+2 AMU Sci./Dip. Engg. 2016-2017

1. How will you name the following compound? $CH_3 - CH = CH_2$
   (a) Propyne (b) Ethyne
   (c) Propene (d) Butene
2. Functional group in Butanone is:
   (a) –CHO (b) COOH
   (c) >C=O (d) –OH
3. The metals stored in oil:
   (a) Zn, Li, Na (b) Li, K, Na
   (c) Li, K, P_4 (d) S_8, P_4, K
4. Electrolysis of Brine gives at anode:
   (a) H_2 gas (b) Cl_2 gas
   (c) O_2 gas (d) H_2O
5. Removal of oil and dirt from cloth by soap and detergent is due to:
   (a) Hydrophobic group
   (b) Hydrophilic group
   (c) Hydrophobic and Hydrophilic group
   (d) Ionic group
6. Which of these allotropes of carbon is formed of hexagonal arrays being placed in layers?
   (a) Diamond (b) C-60 fullerene
   (c) Graphic (d) Both (a) and (b)
7. The compound showing highest boiling point:
   (a) CH_3COOH (b) $CH_3 - CH_2 - CH_3$
   (c) CH_3OH (d) $CHCl_3$
8. The correct order of biological hierarchy from "Kingdom of species" is:
   (a) Kingdom, Order, Family, Class, Phylum, Genus, Species
   (b) Kingdom, Phylum, Order, Class, family, Genus, Species
   (c) Kingdom, Class, Order, Phylum, Family, Genus, Species
   (d) Kindom, Phylum, Class, Order, Family, Genus, Species
9. Members of Phylum Arthropoda lack one of the following features:
   (a) Jointed legs
   (b) Closed type of circulatory system
   (c) Blood filled coelomic cavity
   (d) Exoskeleton
10. Roundworms infect human by:
    (a) Penetration of skin by infective larvae
    (b) Infective larvae reaching gastro-intestinal tract through improperly cooked pork
    (c) Eggs present in contaminated food and water
    (d) Autoinfection
11. Staphylococci is a gram-positive bacteria which stains:
    (a) Purple (b) Red
    (c) Brown (d) Pink
12. The correct difference between prokaryotic and eukaryotic cells is :
    (a) In prokaryotes vacuoles are absent while they are present in eukaryotes
    (b) Microtubulus are present in prokaryotes while absent in eukaryotes
    (c) Prokaryotes have smaller nucleus while eukaryotes have bigger nucleus
    (d) Lysosomes are absent in eukaryotes while they are present in prokaryotes
13. Which is the correct order of increase geological time scale for vertebrate evolution?
    (a)Cenozoic, Mesozoic, Palezoic, Precambrain
    (b)Cenozoic, Palezoic, Mesozoic, Precambrian
    (c)Precambrian, Cenozoic, Paleozoic, Mesozoic,

(d) Precambrian, Paleozoic, Mesozoic, Cenozoic

14. The genotype for the blood group AB is:
(a) I^AI^o (b) I^AI^B
(c) I^BI^o (d) I^oI^o

15. Which of the following alternatives is correct?
(a) Jersey & Browa Swiss are breeds of cattle.
(b) Aseel and Leghorn are breeds of poultry.
(c) Pomphret and Bombey duck are domestic fowl.
(d) Rohu and Catla are fresh water fishers.

16. Choose the correct statement:
(a) Primary consumers are key link between and rest of consumers.
(b) Producers convert chemical energy into light energy.
(c) Available energy gradually decrease from higher to lower trophic levels.
(d) Food webs are rate in natural ecosystems.

17. Select the most appropriate statement:
(a) In flowering plants pollen grains and ovules are spatially separated,
(b) In flowering plants pollen grains and ovules are temporally separated
(c) In flowering plants pollen grains are not indispensable for sexual reproduction.
(d) In flowering plants pollen tube facilitates the delivery of female germ cells to pollen grains.

18. To form *Polygonum* type of embryo sac megaspore nucleus undergoes
(a) 3-Meiotic divisons
(b) 3-Mitotic divisons
(c) 2-Meiotic divisons
(d) 2- Mitotic divisons

19. In a dihylicid cross of yellow and round seeds and green and wrinkled seeds, F_2 seeds showed the four possible combinations in the ratio of:
(a) 1:1:1:1 (b) 9:3:3:1
(c) 1:2:2:1 (d) 9:6:1:1

20. The correct sequence in the pathway of 'Reflex Arc' is :
(a) Receptor → Sensory neuron → Relay neuron → Effector
(b Receptor → Relay neuron → Sensory neuron → Motor neuron → Effector
(c) Receptor → Motor neuron→ Relay neuron → Sensory neuron → Effector
(d) Receptor → Sensory neuron → Motor neuron→ Relay neuron → Effector

21. Kidney has large numbers of filtration units called as:
(a) Flatiron (b) Natron
(c) Neuron (d) Nephron

22. The elongated living plant cell with irregularly thickened cell wall belongs to:
(a) Collenchyma (b) Parenchyma
(c) Fibers (d) Sclerenchyma

23. The breakdown of pyruvate using oxygen takes place in:
(a) Mitochondria (b) Chloroplast
(c) Ribosomes (d) Lysosomes

24. If $a = -\sqrt{35}$, then the value of $a^2 - \frac{1}{a^2}$ is:
(a) $2(6+\sqrt{35})^2$ (b) $4(6+\sqrt{35})^2$
(c) $-24\sqrt{35}$ (d) $24\sqrt{35}$

25. Which of the following is an irrational number between 2 and 3?
(a) 2.357357
(b) 2.101001000101.....
(c) 2.05131313....
(d) 2.579

26. Consider the following statements:
Lets P(x) and Q(x) be two different polynomials with real coefficients of degrees m and n respectively, where $m \geq 0$ and $n \geq 0$, then
Statement I : deg P(x) –Q(x)≤d.
Statement II: deg P(x), Q(x) = m+n
Where 'd' is defined as d = m if > n
= n if n> m
= m or n if m=n
And 'deg' stands for degree of the polynomial.
In your opinion:
(a) Only statement II is true
(b) Both the statements I and II are true
(c) Both the statements I and II are false
(d) Only statement I is true

27. If the polynomial $2x^4 + 7x^3 - 5x^2 + 24x - 16$ is divided $x^2 + 4x + k$, according to the divison algorithm for the polynomials, the remainder comes out to be x + a, then k and a will be respectively:
(a) 3, -1 (b) -3, -1
(c) -3, 1 (d) 3, 1

28. In a triangle ABC one of the angle is 25% more than the sum of other two. Then the largest angle of the triangle is:
(a) 120^0 (b) 110^0
(c) 100^0 (d) None of these

29. The perimeter of an isosceles triangle is 20 cm. if each equal side is twice the base then the length of the three sides of the triangle in cm, are :
(a) 6, 6, 8 (b) 4, 4, 12
(c) 7, 7, 6 (d) 8, 8, 4

30. For what value of 'a' does the following pair of linear equations is inconsistent:
$2x+3y=7, (a-1)x+(a+1)y=3a^2-1$
(a) 5 (b) 6
(c) 7 (d) 8

31. A train covered a certain distance at a uniform speed. If the train would have been 10 km/hr faster. It would have taken 2 hours less than the scheduled time. If the train were slower by 10 km/hr, it would have taken 3 hours more than the scheduled time. The distance covered by the train will be:
(a) 1200 km (b) 1000 km
(c) 800 km (d) 600 km

32. The roots of the quadratic equation $25x^2 + 20x + 7 = 0$ are:
(a) Real roots
(b) No real roots
(c) Real and unequal
(d) Real and equal

33. The real value of p for which the equation $x^2 + 2x + (p^2+1) = 0$ has real root is:
(a) 2, -3 (b) -2, 3
(c) 2, 3 (d) No real value

34. The altitude of a right triangle is 5cm less than the base x cm and the hypotenuse is 6 cm. the quadratic representation of above situation is:
(a) $2x^2 - 10x - 11 = 0$
(b) $x^2 - 5x - 6 = 0$
(c) $x^2 + x - 29 = 0$
(d) $2x^2 + 10x - 11 = 0$

35. If $\log_{10}2$, $\log_{10}(2^x - 1)$ and $\log_{10}(2^x + 3)$ are three consecutive terms of an arithmetic progression, then:
(a) $x = 0$ (b) $x = 1$
(c) $x = \log_2 5$ (d) $x = \log_{10}2$

36. Consider the following statements:
If a, b, c, d, e are in an arithmetic progression, then:

Statement I : $\frac{a}{x}, \frac{b}{x}, \frac{c}{x}, \frac{d}{x}, \frac{e}{x}$ will be in an arithmetic progression, where $x \neq 0$,

Statement II: There exist b_1, c_1, d_1, such that a, b_1, c_1, d_1, e are in an arithmetic progression where $b \neq b_1$, $c \neq c_1$, $d \neq d_1$

In your opinion,

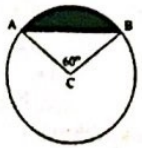
(a) Statement I is true and statement II is false

(b) Statement I is false and statement II is true

(c) Both statement I and II are true

(d) Both statement I and II are false

37. In the adjoining figure ABC is an equilateral triangle and C is the centre of the circle, A and B lie on the circle. What is the area of the shaded region, if the diameter of the circle is 28 cm?



(a) $(102\frac{2}{3} - 49\sqrt{3})cm^2$

(b) $(103\frac{2}{3} - 98\sqrt{3})cm^2$

(c) $(109 - 38\sqrt{3})cm^2$

(d) None of these

38. If the radius of cylinder is doubled but height is reduced by 50% the percentage change in volume is:

(a) 50% (b) 75%

(c) 100% (d) 25%

39. The mean of 7 observations is 8, A new observation 16 is added. The mean of 8 observations is:

(a) 12 (b) 9

(c) 8 (d) 24

40. The following frequency distribution

x :	12	15	17	20	24
y :	3	7	9	10	4

is classified as:

(a) Continuous distribution

(b) Discrete distribution

(c) Cumulative frequency distribution

(d) Both (a) and (b)

41. In an equilateral triangle ABC, D is a point on side BC such that $BD = \frac{1}{3}BC$, then the ratio $AD^2 : AB^2$

(a) 9: 7 (b) 1: 3

(c) 3: 1 (d) 7: 9

42. Which one is not the Euclid's postulate?

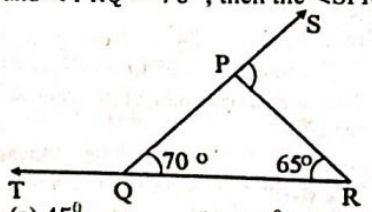
(a) A circle can be drawn with any centre and any radius

(b) A straight line way be drawn from any one point to any other point

(c) A terminated line can be produced definitely

(d) All right angles are equal to one another.

43. In the given figure, side QP and RQ of ΔPQR are produced to points S and T respectively. If $< PRQ = 65^0$ and $< PRQ = 70^0$, then the <SPR is



(a) 45^0 (b) 135^0

(c) 65^0 (d 110^0

44. The moon is about 384000 km from the earth and its path around earth is circular. The moon takes 24 hours to complete one orbit. The speed at which the moon orbits the earth in km/hour is:

(a) 16000 (b) 100571

(c) 50240 (d) 12560

45. ABCD is a parallelogram in which P and Q are mid points of opposite sides AB and CD. If AQ intersects DP at S and BQ intersects CP at R, then the total number of parallelogram are:

(a) 2 (b) 5

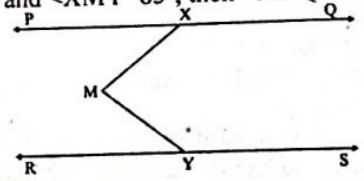
(c) 6 (d) 4

46. If Cot A + Cos 75^0= Tan5^0 + Sin 15^0 when $< A$ lies between 0^0 and 45^0, then the value of A is:

(a) 85^0 (b) 90^0

(c) 95^0 (d) 70^0

47. In the figure, If PQ || RS, <MYR=40^0 and <XMY=85^0, then <MXQ is:



(a) 125^0 (b) 95^0

(c) 135^0 (d) 140^0

48. From each corner of a square of side 7cm, a quadrant of a circle of radius 2 cm is cut and also a circle of diameter 3 cm is cut, the area of remaining portion of the is (in cm^2)

(a) 9.714 (b) 38.795

(c) 29.375 (d) 19.625

49. A triangular park ABC has sides in the ration of 3:5:7 and its perimeter is 300 m. A farmer has to put a fence all around it with barbed wire at the rate of Rs. 30 per meter leaving a space 3.5 m wide for gate on one side. The area of park and cost of fencing is respectely:

(a) 1500 $\sqrt{3}$ m^2 and Rs. 8895

(b) 1500 $\sqrt{15}$ m^2 and Rs.8895

(c) 1500 $\sqrt{15}$ m^2 and Rs. 9895

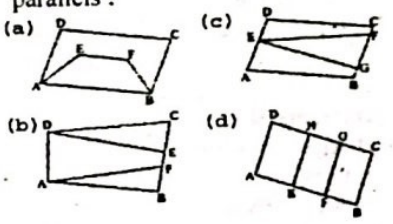
(d) 1500 $\sqrt{3}$ m^2 and Rs. 9895

50. The ratio in which the line segment joining segment joining the points (-3,10) and (6, -8) is divided by (-1, 6) is

(a) 2 : 7 (b) 7 : 2

(c) 1 : 1 (d) 3 : 7

51. Which of the following figure lie on the same base and between the same parallels :



52. The solution of:

$$\frac{5\cos^2 60 - 4\sec^2 30 - \tan^2 45}{\sin^2 30 + \cos^2 30}$$

(a) $\frac{61}{12}$ (b) $\frac{43 - 24\sqrt{3}}{11}$

(c) $-\frac{61}{12}$ (d) $-\frac{12}{61}$

53. If A (-4, -2), B(-3,-5), C(3,-2) and D(2, 3) are the vertices of a quadrilateral, then the area of quadrilateral ABCD is (in square units):

(a) 53 (b) 28

(c) 19 (d) 32

54. Who among the following was conferred with the Indira Gandhi award for national integration on October 31, 2015?

(a) C.N.R. Rao (b) E. Sreedharan

(c) Karan Singh (d) P.V. Rajagopal

55. Who among the following is the author of Dreaming Big My Journey to Connect India released in October 2015?

(a) Som Mittal (b) Sam Pitrod

(c) Kiran Karnik (d) Rajendra Pawar

56. President of India. Pranab Mukherjee recently announced to impose the president's rule in which of the following state?
(a) Kerala
(b) Arunachal pradesh
(c) Andhra Pradesh
(d) Karnataka

57. Which of the following award is given to recognize outstanding achievement in sports?
(a) Padma Shri
(b) Arjuna Award
(c) Param Vir Chakra
(d) Ashok Chakra

58. Azlan Shah Trophy is associated with which sports ?
(a) Football (b) Hockey
(c) Cricket (d) Volleyball

59. Which of the following is the highest award in the field of literature in India?
(a) Sahitya Academy Award
(b) Kabir Samman
(c) Padma Bhusan
(d) Gyanpith Award

60. Indian-born Nobel Prize winner Venkat Ram Krishnan is associated with
(a) Physics (b) Medicine
(c) Economics (d) Chemistry

61. Which city has shut 2,500 firms this year to fight pollution?
(a) Singapure (b) Delhi
(c) Shanghai (d) Beijing

62. Full form of BRICS
(a) Brazil, Russia, India, China and South Africa
(b) Brazil, Russia, Indonesia, China and South Africa
(c) Brazil, Russia, India, China and South Africa
(d) Brazil, Russia, India, China and Singapore

63. The first women film star nominated to the Rajya Sabha was:
(a) Nargis Dutt (b) Shabana Azmi
(c) Madhubala (d) Meena Kumari

64. In which year Sir Syed Ahmad Khan founded the Scientific Society?
(a) 1861 (b) 1862
(c) 1863 (d) 1865

65. Mohammadan Literary Society was founded in 1863 in Calcutta by:
(a) Mirza Ghulam Ahmad
(b) Sir Syed Ahmad
(c) Justice Mahmood
(d) Nawab Abdul Latif

66. Tansen was court musician of which king?
(a) Baz Bahadur
(b) Krishna Deva Rai
(c) Akbar
(d) Ibrahim Adil Shah

67. Who authored the book 'Humayun Nama?
(a) Jahagir (b) Abul Fazal
(c) Gulbadan (d) Noor Jahan

68. Amir Khusru was disciple of which Sufi Saint?
(a) Nizamuddin Aauliya
(b) Shaikh Burhan
(c) Baba Farid
(d) Qutban

69. The first woman who sucked the Prophet Muhammad (PBUH) after his mother was:
(a) Thuwaibah (b) Halima
(c) Shamama (d) Hanna

70. What is the name of grandfather of Prophet Muhammad (PBUH)?
(a) Abdul Muttalib
(b) Abdul Lahab
(c) Abdul Obaid
(d) Abdul Talha

71. Who constructed Alai Darwaza, a gateway to the enclosure of the Quwat-ul-Islam mosque in Delhi?
(a) Jalaluddin Khilji
(b) Alauddin Khilji
(c) Ghayasuddin Khilji
(d) Ikhteyar Khilji

72. Itmaad-ud-daula, whose tomb is built at Agra, was father in law of which Mughal emperor?
(a) Akbar (b) Jahangir
(c) Shahjahan (d) Aurangzeb

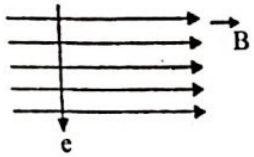
73. At the age of twelve, Prophet Muhammad (PBUH) travelled to Syria with his uncle. what is the name of that Uncle?
(a) Abu Talha (b) Abu Talib
(c) Abu Taif (d) Abu Taba

74. The area under speed-time graph represents a physical quantity which has the unit of:
(a) m (b) m^2
(c) ms^{-1} (d) ms^{-2}

75. Which of the following statement is incorrect regarding an electromagnet?
(a) Magnetism of an electromagnet can be switched on or off as desired
(b) Magnetism depends on current passing through the coils of an electromagnet
(c) The strength of an electromagnet can be changed by changing the number of turns in its coil.
(d) The polarity of an electromagnet is fixed and can not be changed.

76. A 4Ω resistance is doubled on it. then its new resistance will be:
(a) 4Ω (b) 2Ω
(c) 1Ω (d) 8Ω

77. An electron enters in a magnetic field at right angle (see figure below). The direction of force acting on the electrons will be:



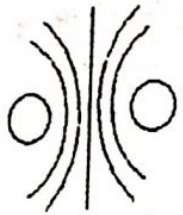
(a) To the right (b) To the left
(c) Out of the page (d) Into the page

78. A positively charged particle projected towards west is deflected towards north by a magnetic field. The direction of magnetic field is:
(a) Toward south (b) Toward east
(c) Downward (d) Upward

79. The Phenomenon of electromagnetic induction is:
(a) The process of changing a body
(b) The process of generating magnetic field due to current passing through a coil
(c) Producing induced current in a coil due to relative between coil and magnet
(d) The process of rotating a coil of an electric motor

80. A strong bar magnet is placed vertically above a horizontal wooden board. The magnetic lines of force will be:
(a) Only in horizontal plane around the magnet
(b) Only in vertical around the magnet
(c) In horizontal as well as in vertical plans around the magnet
(d) In all the planes around the magnet

81. The diagram given below represents magnetic field caused by a current carrying conductor which is:



(a) A long straight wire
(b) A circular coil
(c) A solenoid
(d) A short straight wire

82. An object is put in three liquids having different densities one by one. The object floats with $\frac{1}{9}, \frac{2}{11}$ and $\frac{3}{7}$ parts of its volume outside the surface of liquids of densities d_1, d_2 and d_3 respectively. Which of the following is the correct order of the densities of the three liquids?
(a) $d_1 > d_2 > d_3$ (b) $d_2 > d_3 > d_1$
(c) $d_1 < d_2 < d_3$ (d) $d_3 > d_2 > d_1$

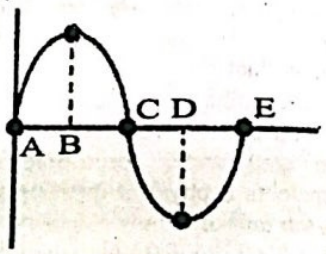
83. Four balls A,B, C & D displace 10 ml, 24 ml, 15ml and 12ml of a liquid respectively, when immersed completely. The ball which will undergo the maximum apparent loss in weight will be:
(a) A (b) B
(c) C (d) D

84. The gravitational force between two objects is F. how will this force change when distance between them is reduced to half?
(a) F/4 (b) 4F
(c) 2F (d) F/2

85. Which among the following bodies is more energetic?
(a) mass M & speed 2V
(b) mass M & speed V
(c) mass 2M & speed V
(d) mass 3M & speed V/2

86. A rod of mass 'm' & length 'l' is lying on a horizontal table. Work done in making it stand on one end will be:
(a) *mgl* (b) *mgl/2*
(c) $\frac{mgl}{4}$ (d) *2mgl*

87. If the sound wave is produced by vibrating tuning fork shown in figure then half of time period is represented by:



(a) AB (b) BD
(c) DE (d) AE

88. A boy 1.5 m tall with his eye level at 1.38 m stands before a mirror fixed on a wall. What should be the minimum length of the mirror so that he can view himself fully?
(a) 1.5 m (b) 3.0 m
(c) 0.75m (d) 1.38 m

89. An erect image 3 times of the size of the object is obtained with a concave mirror of radius of curvature 36 cm. what is the position of the object from the mirror?
(a) 3 cm (b) -6 cm
(c) 18 cm (d) -12 cm

90. The power of a plano-convex lens of refractive index 1.5 and radius of curved surface 15 cm would be:
(a) 3.33 dioptre (b) 1.5 dioptre
(c) 30 dioptre (d) 15 dioptre

91. A change of state from solid to gas is called:
(a) Fusion (b) Fission
(c) Sublimation (d) Evaporation

92. The number of particles in 8g O_2 is:
(a) 1.75×10^{23} (b) 1.89×10^{23}
(c) 1.99×10^{23} (d) 1.51×10^{23}

93. In periodic table, period II has following elements:
(a) Li, Na, K, Rb, Cs, Fr
(b) B, Be, O, N, Li, C
(c) Be, Mg, Ca, Sr, Ba, Ra
(d) Na, Mg, Al, Si, P, S

94. Orange juice was diluted 10 times. Its pH will:
(a) Increase
(b) Decrease
(c) remain unchanged
(d) will become neutral

95. What is the correct order of relative activities of metals:
(a) K<Na>Ca>Mg
(b) Na>K>Ca>Mg
(c) Na>K>Mg>Ca
(d) Mg>Ca>K>Na

96. How many moles of 3.6 g of water will contain?
(a) 0.2 moles (b) 0.5 moles
(c) 1.0 moles (d) 2.0 moles

97. Which one of the following is not possible?
(a) $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$
(b) $Pb + FeSO_4 \rightarrow PbSO_4 + Fe$
(c) $Cu + 2AgNO_3 \rightarrow Cu(NO_3)_2 + 2Ag$
(d) $Zn + MgSO_4 \rightarrow ZnSO_4 + Ag$

98. Milky colour formation in lime water on passing CO_2 gas is due to
(a) Formation $CaCO_3$
(b) Formation $Ca(HCO_3)_2$
(c) Formation Cao
(d) Formation of $CaCl_2$

99. Which of the following statement is not true about metal oxides?
(a) Most of the metal oxides are basic in nature
(b) Most of the metal oxides are insoluble in water
(c) Most of the metal oxides are acidic in nature
(d) Some metal oxides are amphoteric in nature

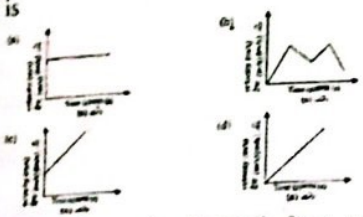
100. For a reaction
$3MnO_2(s) + 4X(s) \rightarrow 3Mn(l) + 2X_2O_3(s)$
Which of the following metals substitute 'X'?
$3MnO_2(s) + 4X(s) \rightarrow 3Mn(l) + 2X_2O_3(s)$
(a) Al (b) Ag
(c) Cu (d) Hg

ANSWERS - 2016-2017

1. (c)	2. (c)	3. (b)	4. (b)	5. (c)	6. (c)	7. (a)	8. (d)	9. (b)	10. (c)
11. (a)	12. (a)	13. (d)	14. (b)	15. (c)	16. (a)	17. (a)	18. (b)	19. (b)	20. (a)
21. (d)	22. (a)	23. (a)	24. (c)	25. (b)	26. Delete	27. (b)	28. (c)	29. (c)	30. (a)
31. (d)	32. (b)	33. Delete	34. (a)	35. (c)	36. (a)	37. (a)	38. (c)	39. (b)	40. (b)
41. (d)	42. (c)	43. (b)	44. (b)	45. (d)	46. Delete	47. (c)	48. Delete	49. (a)	50. (a)
51. Delete	52. (c)	53. (b)	54. (d)	55. (b)	56. (b)	57. (b)	58. (b)	59. (d)	60. (d)
61. (d)	62. (a)	63. (a)	64. (b)	65. (d)	66. (c)	67. (c)	68. (a)	69. (a)	70. (a)
71. (b)	72. (b)	73. (b)	74. (a)	75. (d)	76. (c)	77. (d)	78. (d)	79. (c)	80. (d)
81. (b)	82. Delete	83. (b)	84. (b)	85. (a)	86. (b)	87. (b)	88. (c)	89. (d)	90. (a)
91. (c)	92. (d)	93. (b)	94. (a)	95. (a)	96. (a)	97. (b)	98. (a)	99. (c)	100. (a)

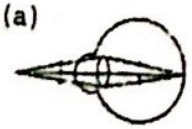
+2 AMU Sci./Dip. Engg. 2015-2016

1. The nature of the velocity-time graph for non-uniform motion of an object is

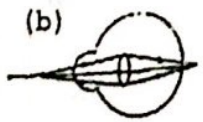


2. A ball is gently dropped from a height of 20 m. If its velocity increases uniformly at the rate of 10 m/sec^2, after what time will it strike the ground?
   (a) 1.414 s (b) 2 s
   (c) 4 s (d) 1 s
3. Which of the following has more inertia if their size is same:
   (a) A rubber ball (b) A stone ball
   (c) A plastic ball (d) An iron ball
4. An objects weight 12N when measured on the surface of the earth, what would be its weight when measured on the surface of the moon?
   (a) 12 N (b) 1 N
   (c) 3 N (d) 2 N
5. A block of wood is kept on a table top. The mass of wooden block is 10 kg and its dimensions are 50cm x 20cm x 10cm. what would be the pressure exerted by the wooden block on the table top, if it is made to lie on the table top with its sides of dimensions 20 cm x 10 cm:
   (a) 2450 N/m^2 (b) 4900 N/m^2
   (c) 980 N/m^2 (d) 9800 N/m^2
6. An object of weight 120N is at a certain height above the ground. If the potential energy of the object is 480 J, the height at which the object is with respect to the ground will be:
   (a) 0.25 m (b) 4 m
   (c) 0.4m m (d) 25 m
7. Two girls A and B each of weight 400 N climb up a rope through a height of 10m. girl A takes 25 s while girl B takes 50 s to accomplish this task. The comparison of power spent by two girls is :
   (a) Both equal
   (b) Girl a has more power
   (c) Girl b has more power
   (d) None of the above
8. A person clapped his hands near a minaret and heard the echo after 4 s. What is the distance of the minaret from the person if the speech of the sound, is taken as 344 m/s?
   (a) 1376 m (b) 688 m
   (c) 2752 m (d) 344 m
9. If the object is placed between centre of curvature C and focus F, the position of the image by a concave mirror is:
   (a) At the focus F (b) At C
   (c) Beyond C (d) Behind mirror
10. A spherical mirror and a thin spherical lens have each a focal length of -15cm. the mirror and lens are likely to be:
    (a) Both concave
    (b) Both convex
    (c) Mirror concave, lens is convex
    (d) Mirror convex, lens is concave
11. Which diagram shows the defect of hypermetropia:

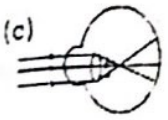
(a)



(b)



(c)



(d) None of these

12. The change in focal length of an eye lens is caused by the action of the :
    (a) Pupil
    (b) Retina
    (c) Ciliary muscles
    (d) Iris
13. A current of 0.5 A is drawn by a filament of an electric bulb for 20 min. Find the amount of electric charge that flows through the circuit?
    (a) 300 C (b) 600 C
    (c) 20 C (d) 200 C
14. 100 J of heat is produced each second in a 4 Ω resistance. Find the potential difference across the resistor:
    (a) 10V (b) 200 V
    (c) 30 V (d) 20 V
15. At the time of short circuit, the current in the circuit:
    (a) reduces substantially
    (b) does not change
    (c) increase heavily
    (d) vary continuously
16. Which is not the part of electric motor:
    (a) insulated copper wire
    (b) coil
    (c) split rings
    (d) stationary brushes (different position)
17. Biogas contains about:
    (a) 29% Methane (b) 80% Methane
    (c) 92% Methane (d) 75% Methane
18. The cause of reddening of the sun and twinkling of stars respectively is:
    (a) Scattering of light and atmospheric
    (b) Atmospheric refraction and scattering of light
    (c) Dispersion and Tyndall effect
    (d) Tyndall effect and dispersion
19. Dry ice is also known as:
    (a) H_2O in solid state
    (b) $CaCO_3$
    (c) CO_2
    (d) D_2O
20. Brass is a mixture of:
    (a) 20% zinc, 80 % iron
    (b) 30 % zinc, 70% iron
    (c) 30% zinc, 70% copper
    (d) 30% iron, 70% copper
21. A solution contains 20 g common salt in 520 g of water. The concentration in terms of mass by mass percentage of the solution is:
    (a) 4.02 % (b) 11.1 %
    (c) 3.84 % (d) 3.70%
22. According to the law of constant proportion in ammonia, nitrogen and hydrogen are always present in the ratio (by mass):
    (a) 1:8 (b) 3:14
    (c) 8:1 (d) 14:3
23. Which among the following is a tetra-element :
    (a) Oxygen (b) Helium
    (c) Phosphorus (d) Neon
24. Isotopes have:
    (a) Same mass number and different atomic number
    (b) Same atomic number and different atomic mass
    (c) Same number of protons and neutrons
    (d) Same number of electrons
25. What is correct electronic configuration of Aluminium?
    (a) 2, 8, 1 (b) 2, 8
    (c) 2, 8, 2 (d) 2, 8, 3
26. $2Pb(NO_3)_2(s) \xrightarrow{heat} 2PbO(s) + 4NO_2(g) + O_2g$ is an example of:
    (a) displacement reaction
    (b) decomposition reaction
    (c) double displacement reaction
    (d) oxidation and reduction

27. Which of the following is an example of redox reaction:
(a) $2Cu + O_2 \rightarrow 2CuO$
(b) $2AgBr \xrightarrow{\Delta} 2Ag + Br$
(c) $ZnO + C \rightarrow Zn + CO$
(d) $2H_2 + O_2 \rightarrow 2H_2O$

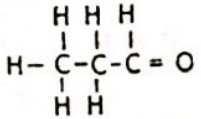
28. Tooth decay starts when the pH of the mouth is:
(a) = 5.5 (b) > 5.5
(c) < 5.5 (d) = 6.0

29. Washing soda is obtained by the recrystallisation of:
(a) Sodium hydrogen carbonate
(b) Bleaching powder
(c) Sodium hydroxide
(d) Sodium carbonate

30. What is the correct order of reactivity of metals in increasing order?
(a) Al>Me>Ca>Cu
(b) Na>Ca>Mg>Zn
(c) Cu>Ca>Al>Me
(d) Au>Ag>Hg>Cu

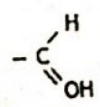
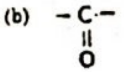
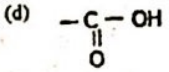
31. The alloy of mercury is called:
(a) Brass (b) Bronze
(c) Amalgam (d) Steel

32. Give name of the structure:



(a) Propanone (b) Prapanol
(c) Propanal (d) Propene

33. What is the structure of functional group carboxylic acid:

(a) 
(b) 
(c) $C=O$
(d) 

34. The atomic size:
(a) Increases down the group
(b) Decreases down the group
(c) Increases along the period
(d) First increases then decreases in period

35. Cells were first discovered by:
(a) Robert Hooke (b) Schleiden
(c) Schwann (d) Virchow

36. Which out of the following is not an example of pteridophyta:
(a) Marsilea (b) Ferns
(c) Horse tails (d) Funaria

37. Which of the following is not a Vertebrate?
(a) Dog fish (b) Rana Tigrina
(c) Turtle (d) Starfish

38. Who amongst the following received Nobel prize for physiology & medicine in 2005?
(a) Marshall and Warren
(b) William and Anderson
(c) Amartya Sen
(d) Abdus Salam

39. The process in which water evaporates and falls on the land as rain and latter flows back into the sea via rivers is called:
(a) Carbon cycle
(b) Nitrogen cycle
(c) Water cycle
(d) None of the above

40. The xylem in plants are responsible for:
(a) Transport for water
(b) Transport for food
(c) Transport for amino acids
(d) Transport of oxygen

41. The breakdown of pyruvate to give carbon dioxide, water and energy takes in:
(a) cytoplasm (b) mitochondria
(c) chloroplast (d) nucleus

42. Which of the following is not a part of the female reproductive system in human beings?
(a) Ovary (b) Uterus
(c) Vas defereus (d) Fallopian Tube

43. The anther contains:
(a) Sepals (b) Ovules
(c) Carpel (d) Pollen grains

44. An example of homologous organs is:
(a) Our arm and a dog's fore-leg
(b) Our teeth and an elephant's tusks
(c) Potato and runners of grass
(d) All of the above

45. Which of the following groups does not contain only biodegradable items?
(a) Grass, flowers and leather
(b) Grass, wood and plastic
(c) Fruit peels, cake and lime juice
(d) Cake, wood and grass

46. Which of the following constitute a food chain?
(a) Grass, wheat and mango
(b) Grass, goat and human
(c) Goat, cow and elephant
(d) Grass, fish and goat

47. Which of the following are environment friendly practices?
(a) Carrying cloth bags to put purchases while shopping.
(b) Switching off unnecessary lights and fans.
(c) Walking to school instead of getting your mother to drop you on her scooter.
(d) All of the above

48. The kidney in human beings are a part of the system for:
(a) Nutrition (b) Respiration
(c) Excretion (d) Transportation

49. The autotrophic mode of nutrition requires :
(a) Carbon dioxide and water
(b) Chlorophyll
(c) Sunlight
(d) All of the above

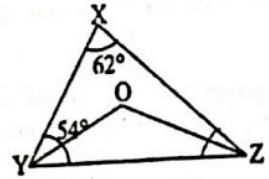
50. A sexual reproduction takes place through budding in
(a) Amoeba (b) Yeast
(c) Plasmodium (d) Leishmania

51. Which of the following statement is false?
(a) Every integer is a rational number.
(b) Every whole number is a natural number.
(c) There are infinitely many rational numbers between any two given rational numbers.
(d) Every real number is represented by a unique point on the number line.

52. Factors of $x^3 - 23x^2 + 142x - 120$ are:
(a) (x + 1)(x - 10) (x - 12)
(b) (x + 1)(x + 10) (x - 12)
(c) (x - 1) (x - 10) (x - 12)
(d) (x + 1)(x - 10) (x + 12)

53. It is given that $\angle XYZ = 64^0$ and XY is produced to point P. If ray YQ bisects $\angle ZYP$, the reflex $\angle QYP$ is:
(a) 322^0 (b) 290^0
(c) 120^0 (d) 302^0

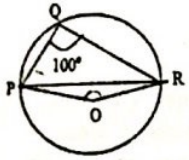
54. In the figure $\angle X = 62^0$ and $\angle XYZ = 54^0$. If YO and ZO are the bisectors of $\angle XYZ$ and $\angle XZY$ respectively of ΔXYZ, $\angle YOZ$ will be:



(a) 110^v (b) 121^v
(c) 142^0 (d) 108^0

55. Which of the following in not correct?
(a) Two circle of same radii are congruent
(b) Two square of same sides are congruent
(c) In a triangle; angle opposite to larger side is smaller
(d) Sum of any two sides of a triangle is greater than the third side

56. In figure <PQR=100^0 where P, Q, R are points on a circle with centre O. The <OPR is:



(a) 30^0 (b) 45^0
(c) 10^0 (d) 60^0

57. ABCD is a cyclic quadrilateral whose diagonals intersect at a point E. if <DBC=70^0, <BAC=30^0. Find <BCD
(a) 80^0 (b) 90^0
(c) 70^0 (d) 60^0

58. The sides of a triangular plot are in ratio 3:5:7 and its perimeter is 300m. It's area in sq. m. is:
(a) 3000 (b) 1580
(c) $1500\sqrt{3}$ (d) $1600\sqrt{2}$

59. A field is in the shape of a trapezium whose parallel side are 25 m and 10 m. The non parallel sides are 14 m and 13 m. The area of field in sq.m. is
(a) 120 (b) 142
(c) 180 (d) 196

60. The diameter of a roller is 84 cm and its length is 120 cm. It takes 500 complete revolutions to move once over to a playground. The area of playground in sq.m. is:
(a) 1482 (b) 1584
(c) 1678 (d) 1614

61. The curved surface area of a cone is 308 cm^2 and its slant high is 14 cm. The total surface area of cone in sq. cm. is:
(a) 312 (b) 412
(c) 362 (d) 462

62. Twenty seven solid iron spheres each of radius r and are S are melted to form a sphere with surface area S. The ratio of S and S is :
(a) 1:9 (b) 1:6
(c) 1:4 (d) 1:3

63. In a mathematics test given to 15 students, the following marks (out of 100) are recorded 41,39, 48, 52, 46, 62, 54, 40, 96, 52, 9,8, 40, 42, 52,60 The median of the data is :
(a) 46 (b) 52
(c) 54 (d) 60

64. Eleven bags of wheat flour; each marked 5 kg actually contained the following weights of flour (in kg) 4.97, 5.05, 5.08, 5.03, 5.00, 5.06, 5.08, 4.98, 5.04, 5.07, 5.00
(a) $\frac{9}{11}$ (b) $\frac{8}{11}$
(c) $\frac{7}{11}$ (d) $\frac{6}{11}$

65. The LCM of 6, 72 and 120 is 360, their HCF is:
(a) 120 (b) 6
(c) 72
(d) None of the above

66. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g(x), the quotient and remainder are x-2 and -2x + 4 respectively. The g(x) is:
(a) $x^2 + x + 1$ (b) $x^2 - x + 1$
(c) $x^2 + x + 1$ (d) $x^2 - x - 1$

67. Five years hence, the age of William will be three times of his son. Five years ago, William's age was seven times that of his son. The present age of William in years is:
(a) 50 (b) 45
(c) 40 (d) 35

68. The sum and product of two numbers is 27 and 182 respectively. One of these is:
(a) 8 (b) 10
(c) 12 (d) 14

69. Sum of the areas of two squares is 468 m^2. The difference of their perimeters is 24m. The side of the large square in m is:
(a) 18 (b) 16
(c) 14 (d) 12

70. The sum of first 51 terms of an AP whose second and third terms are 14 and 18 respectively, is:
(a) 5212 (b) 5458
(c) 5610 (d) 5646

71. Three points A (2,3), B (4, k) and C (6, -3) are collinear. The value of k is:
(a) 3 (b) 2
(c) 1 (d) 0

72. In a triangle ABC, right angled at B, if $\tan A = \frac{1}{\sqrt{3}}$, the value of cosA cosC – sinA sinC will be:
(a) -1 (b) 0
(c) +1 (d) -1/2

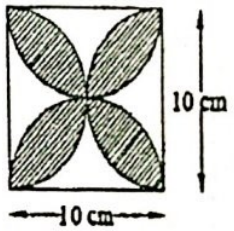
73. The shadow of a tower standing on a level ground is found to be 40 m longer when Sun's altitude is 30^0 than when it is 60^0, the height of tower in m is:
(a) $20\sqrt{3}$ (b) 20
(c) $\frac{20}{\sqrt{3}}$ (d) 10

74. PQ is a chord of length 8 cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T. the length TP in cm is:
(a) 20 (b) $20\sqrt{3}$
(c) 20/3 (d) 10

75. From a solid cylinder whose height is 2.4 cm and diameter 1.4 cm, a conical cavity of the same height and same diameter is hollowed out. The total surface area of the remaining solid in cm^2 is:
(a) 17.6 (b) 20
(c) 10 (d) 8.6

76. The length of the minute hand of a clock is 14 cm. The area swept by the minute hand in 5 minutes, in cm^2, is:
(a) 154/3 (b) 190/3
(c) 120 (d) 69

77. The area of the shaded region in cm^2 where ABCD is a square of side 10 cm with semicircles drawn on each side the square as diameter, is:



(a) 300/7 (b) 400/7
(c) 50 (d) 250/7

78. Two cubes each of volume 64 cm^3 are joined to end. The surface area of resulting cuboid in cm^2 is:
(a) 140 (b) 150
(c) 160 (d) 170

79. A cone of height 24 cm and radius of base 6 cm is made up of modeling clay. It is reshaped form of a sphere. The radius of sphere in cm is:
(a) 6 (b) 8
(c) 7 (d) 5

80. A 20 m deep well with diameter 7 m is dug and earth from digging is evenly spread out to form a platform 22m x 14m, the height of platform in m is:
(a) 4 (b) 3.5
(c) 3 (d) 2.5

81. The Man Booker prize this year has been won by:
(a) Richard Flanagan
(b) Jerome Peter
(c) A.C. Greyling

(d) P. Guildhall

82. Ashraf Ghani is the:
(a) Prime Minister of Tunisia
(b) President of Afghanistan
(c) Secretary General of W.H.O
(d) Famous poet of Pakistan

83. If President of India has to resign, he has to address his resignation letter to the:
(a) Prime Minister
(b) Speaker
(c) Vice-President
(d) Chief Justice

84. Who among the following is known as the 'Blade Runner'?
(a) Oscar Pistorius
(b) Milkha Singh
(c) Usain Bolt
(d) Kobe Bryant

85. 38th parallel is the boundary line between:
(a) USA and Canada
(b) Turkey and Cyprus
(c) Pakistan and Afghanistan
(d) North and South Korea

86. MI-5 is the secret agency of:
(a) U.S.A (b) Israel
(c) U.K (d) France

87. Who is the Chief Economic Adviser of the Prime Minister?
(a) Arvind Subrahmaniam
(b) Rajiv Mehrishi
(c) D.S. Rawat
(d) Rajan Pillai

88. Which of the following is the world's highest dam?
(a) Nurek (b) Guri
(c) Rogun (d) Tehri

89. How many countries participated in the first modern Olympics in 1896?
(a) 10 (b) 12
(c) 13 (d) 15

90. Which of these is not a desert?
(a) Steppe (b) Kolahari
(c) Sahara (d) Patagonia

91. Annual fair held during Pre-Islamic period was called:
(a) Suq (b) Ukaz
(c) Haj (d) Bait

92. Abraha who led an expedition to Ka'abah was ruler of:
(a) Makkah (b) Habsha
(c) Taif (d) Yathrib

93. Who was the foster mother of Prophet Muhammad (PBUH):
(a) Aaminah
(b) Halima Saadiyah
(c) Thuraybah
(d) Umm-e-Kulsoom

94. Who become the guardian of Prophet Muhammad (PBUH) after the death of his grandfather?
(a) Abu Lahab (b) Abu Jahal
(c) Abdul Muttalib
(d) Abu Talib

95. Who is referred as-Ruhul-Ameen?
(a) Jibrael (b) Mika'il
(c) Israfil (d) Iblis

96. The Holy Quran is the Book of?
(a) Allah
(b) Prophet Muhammad (PBUH)
(c) Hazrat Abu Bakr
(d) Hazrat Ali

97. Prophet hood is sealed after Prophet.....:
(a) Hazrat Ibrahim
(b) Hazrat Ismail
(c) Hazrat Ishaq
(d) Prophet Muhammad (PBUH)

98. Al-Qutubul Sitta (Six) are the collection of?
(a) Fiqah (b) Tasawwuf
(c) Quran (d) Hadith

99. The term "Tasawwuf" means:
(a) Sufi Movement
(b) Islamic Law
(c) Sayings doings and deeds of the Prophet Muhammad (PBUH)
(d) Various aspects of Islam

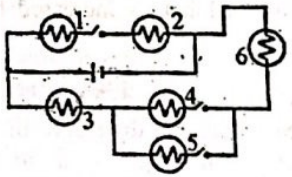
100. Who is known as Toot-i-Hind?
(a) Hazrat Nizamuddin
(b) Amir Khusrow
(c) Baba Farid Ganj-e-Shakar
(d) Nasiruddin Chiragh Dehlawi

ANSWERS - 2015-2016

1. (b)	2. (b)	3. (d)	4. (d)	5. (b)	6. (b)	7. (b)	8. (b)	9. (c)	10. (a)
11. (b)	12. (c)	13. (b)	14. (d)	15. (c)	16. (d)	17. (d)	18. (a)	19. (c)	20. (c)
21. (d)	22. (d)	23. (c)	24. (b)	25. (d)	26. (b)	27. (c)	28. (c)	29. (d)	30. (b)
31. (c)	32. (c)	33. (d)	34. (a)	35. (a)	36. (d)	37. (d)	38. (a)	39. (c)	40. (a)
41. (b)	42. (c)	43. (d)	44. (d)	45. (b)	46. (b)	47. (d)	48. (c)	49. (d)	50. (b)
51. (b)	52. (c)	53. (d)	54. (b)	55. (c)	56. (c)	57. (a)	58. (c)	59. (d)	60. (b)
61. (d)	62. (a)	63. (b)	64. (c)	65. (b)	66. (b)	67. (c)	68. (d)	69. (a)	70. (c)
71. (d)	72. (b)	73. (a)	74. (c)	75. (a)	76. (a)	77. (b)	78. (c)	79. (a)	80. (d)
81. (a)	82. (b)	83. (d)	84. (b)	85. (d)	86. (c)	87. (a)	88. (a)	89. (c)	90. (a)
91. (b)	92. (b)	93. (b)	94. (d)	95. (a)	96. (a)	97. (d)	98. (d)	99. (a)	100. (b)

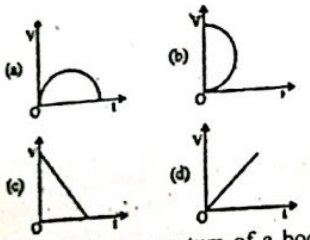
+2 AMU Sci./Dip. Engg. 2014-2015

1. Ibn Battuta visited India during the reign of:
   (a) Balban
   (b) Alauddin Khalji
   (c) Mohd. Bin Tughluq
   (d) Firoz Tughluq
2. Who among the following is known as the Flyling Sikh of India"?
   (a) Milkha Singh
   (b) Ajit Pal Singh
   (c) Joginder Singh
   (d) Mohinder Singh
3. Border Security Force was established in the year:
   (a) 1965 (b)1966
   (c) 1967 (d)1968
4. Maulvi Ahmadullah of Faizabad led the Revolt of 1857 in:
   (a) Delhi (b) Central India
   (c) Bihar (d) Rohilkhand
5. Who among the following had constructed the Red Fort in Delhi?
   (a) Akbar (b) Jahangir
   (c) ShahJahan (d) Aurangzeb
6. Arvind Kejriwal the leader of the Aam Admi Party (AAP) has served in which of these services?
   (a) Indian Administrative Service (IAS)
   (b) Indian Foreign Service (IFS)
   (c) Indian Revenue Service (IRS)
   (d) Indian Police Service (IPS)
7. Sultan Azlan Shah Cup is associated with:
   (a) Football (b) Hockey
   (c) Basketball (d) Cricket
8. Who was the first woman Speaker of the Lok Sabha?
   (a) Najma Heptullah
   (b) Sarojini Naidu
   (c) Meira Kumar
   (d) Sushma Swaraj
9. Telecome company 'Nokia' belongs to which country?
   (a) USA (b) Finland
   (c) Sweden (d) France
10. Buland Darwaza at Fatehpur Sikri was constructed by Akbar to commemorate the:
    (a) Birth of Prince Salim
    (b) Victory of Gujarat
    (c) Victory of Malwa
    (d) Victory of Bengal
11. Real name of Nurjahan wife of Jahangir was :
    (a) Mehrun Nisa (b) Mahinoor
    (c) Qaisar Jahan (d) Jodha Bai
12. Sir Syed Ahmed Khan wrote Tafsir of
    (a) Bible
    (b)Zuboor
    (c) Sahif-e-Ibrahim
    (d) None of these
13. Quran was revealed to prophet Muhamma (P.B.U.H.) at:
    (a) Makkah and Madina
    (b) Madina and Kuf
    (c) Makkah and Taif
    (d) Makkah & Habsha
14. Battle of Uhad was fought in:
    (a) Madina (b) Makkah
    (c) Syria (d) Kufa
15. Where is Masjid-i-Nabwi?
    (a)Habsha (b) Makkah
    (c) Madina (d)Taif
16. Who was famous with the title of "Ameen" in Mekkah?
    (a) Abdullah
    (b) Abdul Muttalib
    (c) Muhammad (SAW)
    (d) Ibrahim
17. The following is known traditionally as Hadith:
    (a) The word of God
    (b) Saying, doing and approval of the Prophet
    (c) Saying of the Companion of the Prophet
    (d) None of these
18. Compilation of the Quran was done during the period of the Companion:
    (a) Abu Bakr Siddique (R.A.)
    (b) Umar Farooque (R. A.)
    (c) Salman Farsi (R.A.)
    (d) AliMurtaza(R.A.)
19. The Islamic calendar is called:
    (a) Hijri (b) Shamsi
    (c) Abbasid (d) Arabic
20. Agreement of Sulah Hudaibiyah was settled in:
    (a) 7A.H. (b) 6 A.H.
    (c) 9A.H. (d) 10A.H.
21. In the electric circuit shown below:



    (a) All the bulbs will glow
    (b) Only bulbs 4, 5 and 6 will glow
    (c) Only bulb 3 will glow
    (d) None of the bulbs will glow
22. The specific resistance of a rod of copper as compared to that of thin wire of copper is:
    (a) more (b) less
    (c) same
    (d) depends upon the length and area of wire
23. Two mirrors are placed at right angles to each other as shown in the figure. The total number of images of an object, O, placed between them, are seen as:

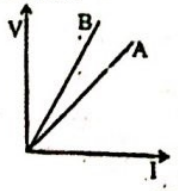
    (a) two (b) three
    (c) four (d)six
24. The echo of a sonar beep is heard 2.50 s later. If the speed of sound in the water is 1400 m/s; the iceberg is at the distance:
    (a) 3500 m (b) 1900 m
    (c) 175m (d) 142m
25. An electric bulb is rated 220 V and 100 W. When it is operated on 110 V, the power consumed will be:
    (a) 100W (b) 75W
    (c) 50W (d) 25W
26. A body floats with 1/3 of its volume outside water and $\left(\frac{3}{4}\right)$ of its volume outside another liquid. The density of the another liquid is:
    (a) $\left(\frac{9}{4}\right)\times10^{3}\,kg\,m^{-3}$
    (b) $\left(\frac{4}{9}\right)\times10^{3}\,kg\,m^{-3}$
    (c) $\left(\frac{8}{3}\right)\times10^{3}\,kg\,m^{-3}$
    (d) $\left(\frac{3}{9}\right)\times10^{3}\,kg\,m^{-3}$
27. If you read a book placed at distance 35.0 cm from your eye and the distance from eye lens to retina is 19.0 mm the focal length of your eye lens is:
    (a) 3.50 cm (b) 5.93 cm
    (c) 2.00 cm (d) 1.89 cm
28. Which of the following cannot be speed-time graph of a body in motion?



29. What is the momentum of a body of mass 100 g, having aK.E. of 20 J?
(a) 2 kg m/s (b) $\frac{1}{2}$ kg m/s
(c) 12 g cm/s (d) None of these

30. In order to calculate the gravitational force of attraction Sir Isaac Newton had made use of:
(a) The planet revolve around the sun in elliptical orbit with the sun at one of its foci
(b) The line joining the planet and the sun sweeps equal areas in equal intervals of time
(c) The cube of the mean distance of a planet from the sun is proportional to the square of its orbital period
(d) Gravitational force is proportional to the rate of change in momentum

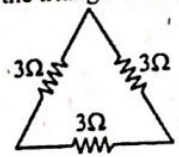
31. The V-I graphs of parallel and series combinations of two metallic resistors are shown in the figure below. The graph that represents parallel combination is:



(a) A (b) B
(c) Both (a) and (b)
(d) None of these

32. Which one of the following take(s) place in hydrogen bomb while detonating:
(a) Fission only
(b) Fusion only
(c) First fission then fusion only
(d) First fusion then fission only

33. Three resistors of resistance 3Ω each are combined to form an equilateral triangle. Resistance between any two ends of the triangle would be:



(a) $\frac{1}{2}\Omega$ (b) 2Ω
(c) 6Ω (d) 9Ω

34. Kinetic energy of a car, when its speed is tripled, is increased by the factor :
(a) 3 (b) 4
(c) 9 (d) 27

35. When a potential difference of 3.0 V across a resistor set up a current of 0.6 A in it to flow. The potential difference required to set up the current of 0.4 A in the resistor:
(a)1.0V (b) 2.0V
(c) 3.0V (d) 4.0V

36. Gold can be dissolved in:
(a) Hydrochloric acid
(b) Nitric acid
(c) Steam
(d) Aqua regia

37. Mixing an acid with water results in:
(a) Decrease in the concentration of H_30^+ ions per unit volume
(b) Increase in the concentration of H_30^+ ions per unit volume
(c) The concentration of H_30^+ ions per unit volume remains same
(d) Absorption of heat

38. Which gas is produced when sodium reacts with ethanol?
(a) Hydrogen
(b) Carbon monoxide
(c) Carbon dioxide
(d) Water vapours

39. When a metal '*x*' reacts with cold water, it produces hydrogen gas and metal hydroxide having formula *XOH*. Its balanced chemical equation is below:
$2X + 2H_20 \rightarrow 2XOH + H_2$
If the molecular mass of *XOH* is 40. The name of metal 'X' is:
(a) Calcium (b) Potassium
(c) Magnesium (d) Sodium

40. The electronic configuration of the element $^{40}_{20}X$ is:
(a) 2, 8, 10 (b) 2, 8, 8, 2
(c) 2, 10, 8 (d) 2, 8, 18, 8, 4

41. A solution reacts with crushed egg shells to give a gas that turns lime water milky. The solution contains:
(a) NaCl (b) KCl
(c) HCl (d) $CaCl_2$

42. Aqua regia is a freshly prepared mixture of:
(a) 3:1 concentrated sulphuric acid and concentrated nitric acid
(b) 3:1 concentrated hydrochloric acid and concentrated sulphuric acid
(c) 3:1 concentrated hydrochloric acid and concentrated nitric acid ,
(d) 3:1 concentrated nitric acid and water

43. Which of the following pairs will give displacement reactions?
(a) NaCl solution and copper metal.
(b) $MgCl_2$ solution and aluminium metal.
(c) $FeS0_4$ solution and silver metal.
(d) $AgN0_3$ solution and copper metal.

44. Formula unit mass of $CaCl_2$ is :
(a) 70u (b) 82u
(c) 111u (d) 63u

45. 1 mole of nitrogen gas is equal to:
(a) 14g (b) 7g
(c) 28g (d) 42g

46. The valency of Fe in Fe_20_3 is:
(a) 2 (b) 3
(c) 4 (d) 5

47. $Na_2SO_4(aq) + BaCl_2(aq) \rightarrow BaSO_4(s) + 2NaCl(aq)$
The above reaction is:
(a) Combustion reaction
(b) Combination reaction
(c) Displacement reaction
(d) Double-displacement reaction

48. Phenolphthalein gives pink colour in:
(a) Acidic medium
(b) Basic medium
(c) Neutral medium
(d) Both acidic and basic

49. HCl dissolves in water and give..... and Cl^- ion:
(a) H^+ (b) OH^-
(c) H_30^+ (d) None of these

50. Plaster of Paris on mixing with water changes to:
(a) $CaS0_4 . 2H_20$
(b) $CaS0_4 . \frac{1}{2} H_20$
(c) $(CaS0_4)_2 . \frac{1}{2} H_20$
(d) $CaSO . H_20$

51. The value of $\tan 48^0 \tan 23^0 \tan 42^0 \tan 67^0$ is:
(a) 0 (b) 1
(c) 2 (d) None of these

52. The two roots of the equations $a(b-c)x^2 + b(c-a)x + c(a-b) = 0$ are 1 and:
(a) $\frac{c(a-b)}{b(c-a)}$ (b) $\frac{b(c-a)}{a(b-c)}$
(c) $\frac{a(b-c)}{b(c-a)}$ (d) $\frac{c(a-b)}{a(b-c)}$

53. If the points (2, 3), (4, k) and (6, -3) are collinear, then the value of k is
(a) 0 (b) 2
(c) -2 (d) 4

54. ABCD is a rhombus and P, Q, R and S are the midpoints of the sides AB, BC, CD and DA the quadrilateral PQRS is a
(a) Rectangle (b) Parallelogram
(c) Triangle (d) Rhombus

55. If the points A(5, 2), B(4, 7) and C(7,-4) form a triangle ABC, then the area of triangle is equal to
(a) -4 (b) 4
(c) +2 (d) 5

56. If the roots of the quadratic equation $(a^2+b^2)x^2-2b(a+c)x+(b^2+c^2)=0$ are equal, then:
(a) 2b - a +c (b) $b^2 = ac$
(c) $b=\frac{2ac}{a+c}$ (d) b - ac

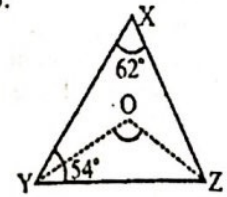
57. If $\bar{x}$ is the mean of $x_1, x_2, x_3, \ldots, x_n$ then mean of $(x_1+k), (x_2+k), (x_3+k), \ldots (x_n+k)$ will be:
(a) $\bar{x}$ (b) $k\frac{1}{x}$
(c) k (d) $\bar{x}+k$

58. Two dice are thrown simultaneously. What is the probability of getting a doublet?
(a) $\frac{1}{6}$ (b) $\frac{1}{12}$
(c) $\frac{5}{18}$ (d) $\frac{11}{36}$

59. In ΔABC, D is the mid-point of BC, E is the midpoint of DC and O is the mid-point of AE. The ratio of areas of ΔAOC and ΔABC is:
(a) 1 : 6 (b) 1 : 7
(c) 1: 8 (d) 1:9

60. The length of a tangent from a point A at distance 5 cm from the centre of the circle is 4 cm. The radius of the circle is equal to:
(a) 5 cm (b) 3cm
(c) 4 cm (d) 8 cm

61. In the adjoining figure if YO and ZO are the bisectors of <Y and <Z then <YOZ equals to:
(a) 121°
(b) 36^0
(c) 40°
(d) 25^0



62. 5 pencils and 7 pens together cost Rs.50 whereas 7 pencils and 5 pens together cost Rs.46, then the cost of one pencil is equal to:
(a) Rs. 5 (b) Rs. 7
(c) Rs. 3 (d) Rs.9

63. The area of a sector of a circle with radius 6 cm, if angle o f the sector is 6 0° is equal to:
(a) $\frac{132}{7}cm^2$ (b) $\frac{135}{7}cm^2$
(c) $130cm^2$ (d) $135\ cm^2$

64. The diagonals of parallelogram are:
(a) bisect each other
(b) equal
(c) perpendicular to each other
(d) None of these

65. Sum of the n term of the series, $\sqrt{2}\ \sqrt{8}, \sqrt{18}, \sqrt{32}, \ldots\ldots\ldots$is
(a) $\frac{n(n+1)}{\sqrt{2}}$ (b) $\sqrt{2}(n)(n+1)$
(c) $\frac{n(n+1)}{\sqrt{2}}$ (d) None of these

66. If α and β are the zeroes of the quadratic polynomial x^2-2x-8, then $\alpha+\beta+\alpha\beta$ is:
(a) 6 (b) -6
(c) -10 (d) 10

67. The quadratic polynomial formed by the reciprocal of zeroes of the quadratic polynomial x^2-3x+2 is:
(a) $-3x^2+x+2$ (b) $2x^2-3x+1$
(c) x^2+2x-3 (d) $2x^2+3x-1$

68. If $\Delta ABC \sim \Delta DEF$ and their areas be, respectively 64 cm^2 and 121 cm^2. If EF = 15.4 cm then the value of BC is
(a) 15 cm (b) 12cm
(c) 11.2 cm (d) 18cm

69. Two poles of heights 6 m and 11m stand on a plane ground. If the distance between the feet of the poles is 12 m. The distance between their tops equal to:
(a) 13 m (b) 14m
(c) 15m (d) 20m

70. If the zeroes of the polynomial x^3-3x^2+x+1 are $a-b$, a, $a+6$, find a and b.
(a) $a=2, b=\pm\sqrt{3}$
(b) $a=1, b=\pm\sqrt{2}$
(c) $a=3, b=0$
(d) $a=\sqrt{2}, b=\sqrt{3}$

71. In ΔABC, 'E' is the mid-point of median AD then, ar(ΔBED)=
(a) 1/3 ar (ΔABC)
(b) 1/4 ar(ΔABC)
(c) 1/8 ar (ΔABC)
(d) 1/6 ar (ΔABC)

72. ABCD is a parallelogram. X and Y are the mid-points of BC and CD respectively, then the area of (ΔAXY) is equal to:
(a) $\frac{1}{2}$ar (ABCD)
(b) $\frac{1}{4}$ar(ABCD)
(c) $\frac{3}{4}$ar(ABCD)
(d) $\frac{3}{8}$ar(ABCD)

73. If $y+\frac{1}{4}=2$ then the value of $16y^3+\frac{1}{4y^3}$ is:
(a) 102 (b) 104
(c) 105 (d) 106

74. A river 3 m deep and 40 m wide is flowing at the rate of 2 km per hour into the sea. How much water will fall into the sea in a minute?
(a) $400\ m^3$ (b) $2400\ m^3$
(c) $4000\ m^3$ (d) $4200\ m^3$

75. If $\alpha+\beta=90°$ and $\alpha=2\beta$, then $\cos^2\alpha+\sin^2\beta$ is equal to:
(a) 1 (b) 0
(c) $\frac{1}{2}$ (d) 2

76. ABC is a right triangle, right angled at C. Let BC=a, CA= b, AB=c and let p be the length of perpendicular from C on AB, then $\frac{1}{p^2}$ is equal to:
(a) $\frac{1}{a^2}+\frac{1}{b^2}$ (b) $\frac{1}{a^2}-\frac{1}{b^2}$
(c) $\frac{1}{a^2+b^2}$ (d) $\frac{1}{a^2b^2}$

77. The value of is $\left(\frac{x^b}{x^c}\right)^{\frac{1}{bc}}\left(\frac{x^c}{x^a}\right)^{\frac{1}{ca}}\left(\frac{x^a}{x^b}\right)^{\frac{1}{ab}}$ on simplifying is:
(a) x (b) $\frac{1}{x}$
(c) 1 (d) -1

78. If the points (a, -11, (5, b), (2, 15) and (1,1) are the vertices of a parallelogram taken in order, then the values of a and b are:
(a) $a=4, b=-3$ (b) $a=-4, b=3$

(c) $a = -4, b = -3$ (d) $a = 4, b = 3$

79. If the volume of a right circular cone is 9856 cm^3 and diameter of base is 28 cm then slant height of cone is :
(a) 49 cm (b) 50cm
(c) 60cm (d) 20cm

80. $(x+y)^3-(x-y)^3-6y(x^2-y^2)$ is equal to:
(a) $x+y$ (b) $x-y$
(c) $8x^3$ (d) $8y^3$

81. Single circular chromosome is found in:
(a) Human cell (b) Amoeba
(c) Plant cell (d) Bacteria

82. The solution used to stain cell is/are:
(a) Iodine
(b) Safranin
(c) Methylene blue
(d) All of these

83. A Pteridophytic plant is:
(a) Bird-wing (b) Flying-fox
(c) Horse-tail (d) None of these

84. This is an alga :
(a) Marsilea (b) Riccia
(c) Spirogyra (d) Marchantia

85. A 'Rabi' crop is:
(a) Rice (b) Maize
(c) Wheat (d) Cotton

86. If a cell is kept in a hypertonic solution, it will:
(a) Swell up
(b) Shrink
(c) Swim in a side
(d) Stay the same size

87. In plants, autotrophic mode of nutrition requires:
(a) Sunlight (b) Chlorophyll
(c) $C0_2$ and H_20 (d) All of these

88. Phototropism in plants is controlled by :
(a) Cytokinins (b) Gibberellins
(c) Auxins (d) Abscisic acid

89. An example of micro-nutrient of the crop plant is :
(a) Manganese (b) Sulphur
(c) Potassium (d) Oxygen

90. Xylem and phloem tissues are found in:
(a) Fern (b) Moss
(c) Riccia (d) Marchantia

91. The site of complete digestion of food is:
(a) Stomach (b) Duodenum
(c) Small intestine (d) Large intestine

92. Which of the following organism reproduces by multiple fission?
(a) Leishmania
(b) Amoeba
(c) Malaria parasite
(d) Both (a) and (b)

93. Brown-Swiss is an exotic breed of:
(a) Cow (b) Hen
(c) Buffalo (d) Wheat

94. Bombay duck and tuna are examples of :
(a) Fresh water fishes
(b) Marine fishes
(c) Honey-bees
(d) Poultry birds

95. Japanese encephalitis or brain fever is caused by:
(a) Bacteria (b) Virus
(c) Protozoan (d) Fungus

96. Which of these is not a true fish?
(a) Jelly fish (b) Flying fish
(c) Sea horse (d) Lion fish

97. Fungal cell wall is made up of:
(a) Lignin
(b) Suberin
(c) Chitin
(d) Cellulose and pectin

98. The five kingdom classification was given by :
(a) Carl Woese
(b) Carolus Linnaeus
(c) Enrst Haechel
(d) Robert Whittaker

99. Eosinophil and basophil cells are found in:
(a) Cartilage
(b) Areolar tissue
(c) Adipose tissue
(d) Blood

100. Solid matrix of cartilage is made up of:
(a) Proteins and sugar
(b) Calcuium and phosphours
(c) Proteins and calcium carbonate
(d) Proteins and phosphorus

ANSWER 2014-2015

1. (c)	2. (a)	3. (a)	4. (d)	5. (c)	6. (c)	7. (b)	8. (c)	9. (b)	10. (b)
11. (a)	12. (a)	13. (a)	14. (a)	15. (c)	16. (c)	17. (b)	18. (a)	19. (a)	20. (b)
21. (d)	22. (c)	23. (b)	24. (c)	25. (d)	26. (c)	27. (d)	28. (b)	29. (a)	30. (c)
31. (a)	32. (c)	33. (b)	34. (c)	35. (b)	36. (d)	37. (b)	38. (a)	39. (d)	40. (b)
41. (c)	42. (c)	43. (d)	44. (c)	45. (c)	46. (b)	47. (d)	48. (b)	49. (c)	50. (a)
51. (b)	52. (d)	53. (a)	54. (a)	55. (c)	56. (b)	57. (d)	58. (a)	59. (c)	60. (b)
61. (a)	62. (c)	63. (a)	64. (a)	65. (c)	66. (b)	67. (b)	68. (c)	69. (a)	70. (b)
71. (b)	72. (d)	73. (b)	74. (c)	75. (c)	76. (a)	77. (c)	78. (d)	79. (b)	80. (d)
81. (d)	82. (d)	83. (c)	84. (c)	85. (c)	86. (b)	87. (d)	88. (c)	89. (a)	90. (a)
91. (c)	92. (c)	93. (a)	94. (b)	95. (b)	96. (a)	97. (c)	98. (d)	99. (d)	100. (a)

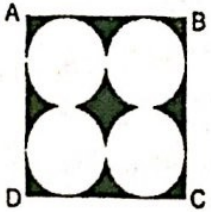
+2 AMU Sci./Dip. Engg. 2013-2014

1. if $x=\frac{1}{1+\sqrt{2}}+\frac{1}{\sqrt{2}+\sqrt{3}}+\ldots$
$\ldots\frac{1}{\sqrt{3}+\sqrt{4}}+\ldots..+\frac{1}{\sqrt{8}+\sqrt{9}}$
Then the value of x is:
(a) 0 (b) 1
(c) 2 (d) 3

2. If $2^{2x+y}=4^{x-y-3}=1$, then (x,y) is:
(a) (-1,-2) (b) (-1,2)
(c) (1,2) (d) (1,-2)

3. The following observations have been arranged in ascending order:
29, 32, 48, 50, x, x+2,78,84,95
If the median of the data is 63, then the value of x is:
(a) 65 (b) 64
(c) 63 (d) 62

4. The area of shaded region in the given figure, where ABCD is a square of side 14 cm is:
(a) 58 cm^2
(b) 83 cm^2
(c) 40 cm^2
(d) 42 cm^2



5. Other zeros of $3x^4+6x^3-2x^2-10x-5$, if two of its zeros are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$ are:
(a) 1,1 (b) -1, -1
(c) 0, 1 (d) $\frac{5}{3},-\frac{5}{3}$

6. Values of a and b for which the following pair of linear equations have an infinite number of solutions are:
$2x+3y=7$
$(a-b)x+(a+b)y=3a+b-2$
(a) a = -5, b =1 (b) a = 5, b= -1
(c) a =5, b = 1 (d) a =-5, b = -1

7. If the number of square centimeters on the surface of a sphere is equal to the number of cubic centimeters in its volume, then the diameter of the sphere is:
(a) 4 cm (b) 5 cm
(c) 6 cm (d) 3 cm

8. The floor of a rectangular hall has a perimeter 250 m. If the cost of painting the four walls at the rate of Rs. 10 per m^2 is Rs. 15000, then the height of the hall is:
(a) 5 m (b) 8 m
(c) 6 m (d) 7 m

9. The roots of $x+\frac{1}{x}=3, x\neq 0$ are:
(a) $3,\frac{1}{3}$
(b) $\frac{3}{2},-\frac{3}{2}$
(c) $\frac{\sqrt{5}}{2},\frac{-\sqrt{5}}{2}$
(d) $\frac{3+\sqrt{5}}{2},\frac{3-\sqrt{5}}{2}$

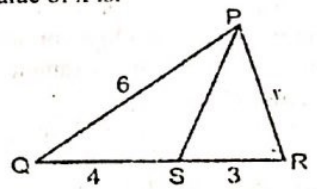
10. Which term of the A.P.: 3, 15, 27, 39,..... will be 132 more than its 54^{th} term?
(a) 45^{th} term (b) 55^{th} term
(c) 65^{th} term (d) 35^{th} term

11. Two A.P.s have the same common difference. The difference between their 100^{th} term is 100, then the difference between their 1000^{th} term is:
(a) 10 (b) 100
(c) 1000 (d) None

12. If $\sin 3A = \cos(A-26^0)$, where 3A is an acute angle, then the value of A is :
(a) $A = 13^0$ (b) $A = 64^0$
(c) $A = 29^0$ (d) $A = 26^0$

13. ABC and BDE are two equilateral triangles such that D is the mid-point of BC. The ratio of areas of triangle ABC and BDE is:
(a) 4 : 1 (b) 1 : 4
(c) 2 : 1 (d) 1 : 2

14. In figure, PS is the bisector of <QPR, in the PQR. If PQ= 6 cm, PR = x cm, QS = 4cm and RS = 3cm, then the value of x is:



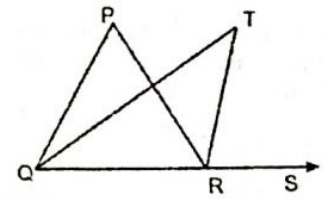
(a) 4.5 cm (b) 9 cm
(c) 8 cm (d) 5.4 cm

15. If (1,2), (4,y), (x,6) and (3,5) are the vertices of a parallelogram taken in order, then x and y are:
(a) x = 3, y - 1 (b) x = 4, y =1
(c) x = 5, y =2 (d) x = 6, y = 3

16. The centre of a circle passing through the points (6, -6), (3, -7) and (3, 3) is:
(a) (2, 3) (b) (3, -2)
(c) (-3, 2) (d) (-2, -3)

17. If the points (7, -2), (5, 1) and (3, k) are collinear, then the value of k is equal to:
(a) 1 (b) 2
(c) 3 (d) 4

18. In the given figure. The side QR of ΔPQR is produced to a point S. if the bisector of <PQR and <PRS meet at point T, then <QTR is equal to:



(a) <QPR (b) 2<QPR
(c) ½ <QPR (d) 1/3 <QPR

19. The value of $\tan 48^0 \tan 23^0 \tan 42^0 \tan 67^0$ is:
(a) 0 (b) 1
(c) 2 (d) 3

20. The value of $\sqrt{\frac{1-\sin A}{1+\sin A}}$ is:
(a) sinA-cosA (b) tan A+ cot A
(c) secA-tanA (d) cosec A+cot A

21. The zeros of the polynomial: x^3-3x^2+x+1 are a – b, a, a+b, then the values of a and b are:
(a) $a=-1, b=\pm\sqrt{2}$
(b) $a=1, b=\pm\sqrt{2}$
(c) $a=\pm\sqrt{2}, b=1$
(d) $a=\pm\sqrt{2}, b=-1$

22. Sum of the areas of two squares is 468 m^2. If the difference of their perimeters is 24 m, the sides of the two squares are:
(a) 18m, 12m (b) 16m, 12m
(c) 18m, 16m (d) 14m, 10m

23. If the pth term of A.P. is $\frac{1}{q}$ & qth term is $\frac{1}{p}$ then sum of pq terms is:,
(a) $\frac{1}{3}(pq-1)$ (b) $\frac{1}{3}(pq+1)$
(c) $\frac{1}{2}(pq+1)$ (d) $\frac{1}{2}(pq-1)$

24. The area of a rhombus if its vertices are (3, 0), (4, 5), (-1, 4) and (-2,-1) taken in order is:

(a) 24 sq. unit (b) 23 sq. unit
(c) 25 sq. unit (d) 22 sq. unit

25. The 'Median' for the following data is:

Marks	No. of Students
00 – 10	5
10 – 25	10
25 – 40	15
40 – 50	40
50 – 60	15
60 – 75	10
75 – 100	5

(a) 40 (b) 45
(c) 48 (d) 50

26. Two dice are rolled. Probability that both show six is:
(a) 1 / 36 (b) 1 / 18
(c) 1 /6 (d) 1 /2

27. A sphere and a cube have equal surface area. Ratio of their volume is:
(a) $\sqrt{6} : \sqrt{\pi}$ (b) $\pi : 6$
(c) $6 : \pi$ (d) $36 : \pi$

28. Number of sides of a polygon is equal to the number of its diagonals, then the polygon is a:
(a) Pentagon (b) Hexagon
(c) Heptagon (d) Octagon

29. If the Arithmetic Mean of 100 values is 50 and their Median is 48, then the approximate value of Mode is:
(a) 44 (b) 46
(c) 49 (d) 54

30. The angle between the hour hand and minute hand of a clock at 10:10 is:
(a) 60^0 (b) 105^0
(c) 115^0 (d) 120^0

31. An organism which obtains nourishment from another larger living organism and harms it also is best defined as:
(a) Parasite (b) Autotroph
(c) Saprophyte (d) Symbiont

32. Which of the following cannot multiply outside the living cells:
(a) Bacteria (b) Protozoa
(c) Viruses (d) Fungi

33. Those plants that grow in places with scanty water are called as:
(a) Mesophytes (b) Hydrohytes
(c) Xerophytes (d) Epiphytes

34. Which of the following is called "Suicide Bag" of a cell?
(a) Plastids
(b) Lysosome
(c) Golgi Apparatus
(d) None of these

35. The organisms that feed on both plants and animals are:
(a) Carnivorous (b) Parasitic
(c) Herbivorous (d) Omnivorous

36. Which is not an example of connective tissue:
(a) Tendon (b) Cartilage
(c) Blood (d) Neuron

37. Sea urchin belongs to:
(a) Enhinodermata (b) Mollusca
(c) Arthropoda (d) Cnidaria

38. Archaeopteryx is considered missing link between:
(a) Fishes and amphibians
(b) Birds and reptiles
(c) Birds and mammals
(d) Reptiles and mammals

39. Villi are present in
(a) Small Intestine
(b) Lungs
(c) Large Intestine
(d) Both (a) & (c)

40. The deficiency of iodine in the diet of a person causes disease known as 'goitre'. This is because of reduction in the production of a hormone namely:
(a) Insulin (b) Thyroxin
(c) Glucagon (d) Testosterone

41. Alveoli are found, in which one of the following parts:
(a) Brain (b) Lungs

(c) Glucagon (d) Stomach

42. Which one is wrong?
(a) Catabolism and anabolism → Metabolism
(b) Meiosis and fertilization → Sexual reproduction
(c) Abiotic and biotic components → Ecosystem
(d) Prebiotic and abiotic components → Ecosystem

43. Which enzyme is present in saliva?
(a) Pepsin (b) Trypsin
(c) Amylase (d) None

44. Pinus is included in which group of plantae?
(a) Pteridophyta (b) Bryophyta
(c) Gymnosperms (d) Angiosperms

45. The tree 'R' of reducing pressure on environment do not include:
(a) Refuse (b) Reduce
(c) Recycle (d) Reuse

46. Sea horse (Hippocampus) comes in which group of Vertebrates:
(a) Amphibia (b) Aves
(c) Reptiles (d) Pisces

47. In a Food Chain, which one of the following is the starting point:
(a) Primary consumers
(b) Secondary consumers
(c) Tertiary consumers
(d) Producers

48. Which is not an invertebrate fossil form?
(a) Trilobite (b) Ammonite
(c) Dinosaur (d) Brachiopod

49. Morphological evidence of evolution is not exhibited by:
(a) Fossile
(b) Homologous organs
(c) Analogous organs
(d) DNA sequence homology

50. Which is not correct:
(a) Y bearing sperm + X –bearing egg→ Male foetus
(b) X bearing sperm + X-bearing egg → female foetus
(c) X-bearing sperm + Y bearing egg → female foetus
(d) XX- bearing sperm +X –bearing egg→ Abnormal female foetus

51. Which is the capital of Spain?
(a) Barcelona (b) Madrid
(c) Lisbon (d) Gibraltor

52. Ranji Trophy is associated with:
(a) Tennis (b) Cricket
(c) Hockey (d) Kabaddi

53. Leander paes is a famous Indian player of :
(a) Tennis (b) Golf
(c) Volley Ball (d) Foot Ball

54. NCERT is concerned with:
(a) Film (b) Sports
(c) Education (d) Law

55. Tsunami had struck Andaman and Nicobar in:
(a) 2004 (b) 2005
(c) 2006 (d) 2007

56. Kofi Annan is the:
(a) Present Secretary General of the UN
(b) Former Secretary General of the UN
(c) Former President of the World Bank
(d) Present President of the World Bank

57. PDS stands for:
(a) Poor Development Scheme
(b) Poor Distribution system
(c) Public Distribution System
(d) Private Distribution System

58. Quartz is made of :
(a) Iron and Carbon
(b) Silicon and Oxygen
(c) Iron and Nitrogen
(d) Silicon & Hydrogen

59. Mummy is:
(a) A dead body
(b) A name for a witch
(c) An embalmed dead body
(d) The American slang word for mother

60. Who formulated first the laws of planetary motion?
(a) Kepler (b) Newton

(c) Galileo (d) Einstein

61. Who did destroy the seat of the Naqshbandi order in Sirhind?
(a) Sikh
(b) British
(c) Hindus
(d) Rival Muslim sects

62. Khwaja Moinuddin Chisti passed away in:
(a) 1098 (b) 1176
(c) 1209 (d) 1236

63. The Anglo-Arabic College was established in:
(a) Calcutta in 1875
(b) Aligarh in 1877
(c) Hyderabad in 1920
(d) Delhi in 1825

64. Sultant period in Muslim Indian history was from:
(a) 1268-1512 (b) 1309-1498
(c) 1206-1526 (d) 1367-1483

65. Qutb Minar in Delhi is located next to:
(a) Masjid Quwwat al-Islam
(b) Jama Masjid
(c) Moti Masjid
(d) Kali Masjid

66. Who was the editor of Hamdard?
(a) Hakim Abdul Hamid
(b) Muhammad Ali Jauhar
(c) Abul Kalam Azad
(d) Hakim Muhammad Said

67. Who among the following in not a compiler of Hadith:
(a) Shah Waliullah
(b) Imam Malik
(c) Imam Nasai
(d) Imam Abu Dawud

68. Who did lead prayers in Prophet Muhammad's (pbuh) last days?
(a) Abu Bakr (b) Umar
(c) Usman (d) Ali

69. After conquering Makkah Prophet Muhammad (pbuh) got all the Makkan unbelievers:
(a) Killed (b) exiled
(c) imprisoned (d) pardoned

70. Abdul-Muttalib was Prophet Muhammad's (pbuh):
(a) Uncle (b) Cousin
(c) Father (d) Grandfather

71. An object is moving with uniform velocity. The area enclosed under the velocity-time graph between any two istants $t=t_1$ and $t=t_2$ gives us:
(a) The magnitude of the displacement
(b) Velocity of the object
(c) Acceleration of the object
(d) Force acting on the object

72. The natural tendency of an object to resist any change in its state of motion is called its:
(a) Weight (b) Momentum
(c) Energy (d) Inertia

73. A batsman hits a cricket ball which then rolls on a level ground. After converting a short distance, the ball comes to rest. The ball comes toa stop because:
(a) The batsman did not hit the ball hard enough
(b) There is a force on the ball opposing the motion
(c) The velocity is proportional to the force on the ball
(d) There is no unbalanced force on the ball, so the ball would want to come to rest.

74. A ball is thrown vertically upwards with a velocity of 49 m/s. What is the total time it takes to return to the surface of the earth?
(a) 5 seconds (b) 10 seconds
(c) 15 seconds (d) 20 seconds

75. An electric bulb of 1000 W is used for 5 hours per day. The 'units' of energy consumed in one day are:
(a) 10 'units' (b) 5 'units'
(c) 4' 'units' (d) 1 'units'

76. A person clapped the hands near a cliff and heard the echo after 4 seconds; Assuming the speed of sound in air at the given temperature to be 346m/s, calculate the distance of the cliff from the person:
(a) 1730 m (b) 1384 m
(c) 865 m (d) 692 m

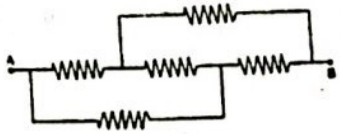
77. Where should an object be placed in front of a convex lens to get a real image of the size of the objects?
(a) At the principal focus of the lens
(b) At infinity
(c) At twice the focal length
(d) Between the optical centre of the lens and its principal focus

78. The human eye can focus objects at different distances by adjusting the focal length of the eye lens. This is due to:
(a) Near sightedness
(b) Far sightedness
(c) Accommodation
(d) Presbyopia

79. A 16 Ω resistance wire is double on it. Calculate the new resistance of the wire:
(a) 01 Ω (b) 04 Ω
(c) 08 Ω (d) 32 Ω

80. A nichrome wire has diameter 0.5 mm and resistivity of 10^{-4} Ωm. what will be the length of the wire to make its resistance of 70 Ω?
(a) 48.75 m (b) 187.5×10^{-4} m
(c) 137.5×10^{-3} m (d) 122.7 m

81. A network of five identical resistors, each of value 10 Q is made as shown in the figure. Equivalent resistance between points A and B is:



(a) 100 Ω (b) 50 Ω
(c) 20 Ω (d) 10 Ω

82. Commonly used electric generators work on the principle of:
(a) Nuclear fission
(b) Nuclear fusion
(c) Solar energy conversion
(d) Electromagnetic induction

83. The temperature at which the fusion of light nuclei may occur is of the order of:
(a) 10^7 deg. K (b) 10^5 deg. K
(c) 10^3 deg. K (d) 10^{-3} deg. K

84. Which energy source may yield relatively pollution free energy?
(a) Wood (b) Solar energy
(c) Coal (d) Petrol

85. The ocean thermal energy is due to
(a) Geothermal changes deep inside the ocean
(b) Nuclear fission inside the ocean
(c) Chemical reactions inside the ocean
(d) Heating of water of the surface of the ocean by the sun

86. Bio-gas does not contain:
(a) CH_4 (b) CO_2
(c) H_2S (d) N_2

87. Identify the substance that is oxidized in the reaction given below
$CuO_{(s)} + H_{2(g)} \rightarrow Cu_{(s)} + H_2O_{(l)}$
(a) CuO (b) H_2
(c) Cu (d) H_2O

88. Tyndall effect in colloidal solution is due to:
(a) Absorption of light by the particle
(b) Refraction of light
(c) Scattering of light by the particles
(d) The presence of electrically charged particles

89. Isobars do not differ in the number of:
(a) Protons (b) Electrons
(c) Neutrons (d) Nucleons

90. Out of the following, the aqueous solution of which compound has the lowest pH?
(a) NaOH (b) NH_4Cl
(c) Na_2CO_3 (d) NaCl

91. Which element has twice as many electrons in its second shell as in its first shell?
(a) Ne (b) B
(c) Si (d) C

92. Which of the following reaction is mainly performed by the alkene?
(a) Substitution
(b) Addition
(c) Decomposition
(d) Replacement

93. In which of the following process metal carbonates change into metal oxide?
(a) Calcination (b) Roasting
(c) Reduction (d) All of these

94. Which of the following is iso electronic of Na+ ?
(a) Cl^- (b) O^-_2
(c) O^{2-} (d) Li^+

95. Ampnoteric oxide is:
(a) Na_2O (b) BaO
(c) ZnO (d) K_2O

96. Oxidation of ethanol with alkaline potassium permanganate produces:
(a) CH_3CHO (b) CH_3COOH
(c) CH_3COCH_3 (d) CH_3COONa

97. The following reaction shows that:
(a) Zn is more reactive metal than Cu
(b) Zn and Cu both have same reactivity
(c) Cu is more reactive than Zn
(d) All of these

98. For rusting of iron, the necessary condition is:
(a) Dry N_2 (b) Moist air
(c) Dry air (d) None of these

99. An isotope of cobalt is used in the treatment of:
(a) Goiter (b) Anaemia
(c) Carbon dating (d) Cancer

100. The organic compound present in tincture of iodine is:
(a) Potassium (b) Iodine
(c) Ethanol (d) Choloroform

ANSWERS - 2013-2014

1. (c)	2. (d)	3. (d)	4. (d)	5. (b)	6. (c)	7. (c)	8. (c)	9. (d)	10. (c)
11. (b)	12. (c)	13. (a)	14. (a)	15. (d)	16. (b)	17. (d)	18. (c)	19. (b)	20. (c)
21. (b)	22. (a)	23. (c)	24. (a)	25. (b)	26. (a)	27. (a)	28. (a)	29. (a)	30. (c)
31. (a)	32. (c)	33. (c)	34. (b)	35. (d)	36. (d)	37. (a)	38. (b)	39. (a)	40. (b)
41. (b)	42. (d)	43. (c)	44. (c)	45. (a)	46. (d)	47. (d)	48. (c)	49. (d)	50. (c)
51. (b)	52. (b)	53. (a)	54. (c)	55. (a)	56. (b)	57. (c)	58. (b)	59. (c)	60. (a)
61. (a)	62. (d)	63. (d)	64. (c)	65. (a)	66. (b)	67. (a)	68. (a)	69. (d)	70. (d)
71. (a)	72. (a)	73. (b)	74. (b)	75. (b)	76. (d)	77. (c)	78. (c)	79. (c)	80. (c)
81. (d)	82. (d)	83. (a)	84. (b)	85. (d)	86. (d)	87. (b)	88. (c)	89. (d)	90. (b)
91. (d)	92. (b)	93. (a)	94. (c)	95. (c)	96. (b)	97. (a)	98. (b)	99. (d)	100.(c)

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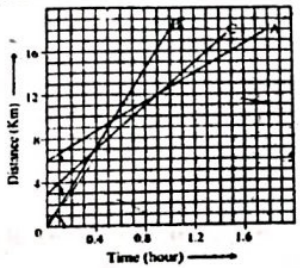
1. Figure shows the distance – time graph of three objects A, B and C. Study the graph and choose the correct answer:



(a) 'A' is travelling fastest
(b) 'B' is travelling fastest
(c) 'C' is travelling fastest
(d) All are travelling with the same speed

2. If momentum is increased by 100%, the percentage increase in kinetic energy is:
(a) 100% (b) 200%
(c) 300% (d) 400%

3. Newton deduced the inverse square law of gravitation:
(a) by observing motion of planetary
(b) by using Kepler's laws of planetary motion.
(c) by studying motion of different objects in the laboratory.
(d) by using data obtained from Cavendish experiment.

4. The kinetic energy of a body becomes 4 times its initial value. The new linear momentum will be :
(a) Same as initial value
(b) Four times the initial value
(c) Twice the initial value
(d) Eight times the initial value

5. A boy of 50 kg runs up a staircase of 45 steps in 9s. if the height of each step is 15cm, his power is (taking g $=10\ ms^{-2}$):
(a) 375 W (b) 500 W
(c) 37.5 W (d) 3.75 W

6. A small wooden block is floating in a tub of water. The water is gradually heated. The volume of wooden block visible above the water level:
(a) Fluctuates
(b) Decrease
(c) Increase
(d) Remains the same

7. The higher the frequency of vibration, the higher is the..... of the sound:
(a) Quality (b) Pitch
(c) Loudness (d) Intensity

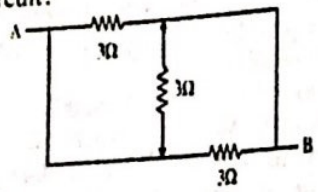
8. A spherical mirror and a thin lens have each a focal length of -15 cm. The mirror and lens are likely to be:
(a) Both concave
(b) Both convex
(c) The mirror is concave and the lens is convex
(d) The mirror is convex and the lens is concave

9. In which one of the following magnification can be -1?
(a) Plane mirror
(b) Convex mirror
(c) Concave mirror
(d) Concave lens

10. The human eye can focus objects at different distances by adjusting the focal length of the eye lens. This is due to :
(a) Presbyopia
(b) Accommodation
(c) Near-sightedness

(d) Far-sightedness

11. Which one of the following is the equivalent resistance of the given circuit?



(a) 1 Ω (b) 3 Ω
(c) 9Ω (d) 6 Ω

12. Two conducting wires of the same material and equal lengths and equal diameters are first connected in series and parallel in a circuit across the same potential difference. The ratio of heat produced in series and parallel combinations for 10 minutes would be:
(a) 1:2 (b) 2:1
(c) 1:4 (d) 4:1

13. The phenomenon of electromagnetic induction is:
(a) The process of generating magnetic
(b) The process of generating magnetic field due to current passing through a coil
(c) Producing induced current in a coil due to relative motion between a magnet and the coil
(d) The process of rotating a coil of an electric motor

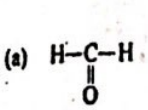
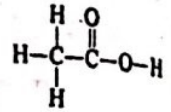
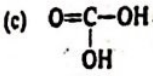
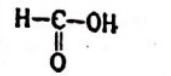
14. Which of one of the following materials is used for making solar cell?
(a) Boron (b) Cadmium
(c) Silicon (d) Uranium

15. On which of the following effects does electric fuse work:
(a) Hall effect
(b) Chemical effect of electric current
(c) Magnetic effect of electric current
(d) Heating effect of electric current

16. During chlor-alkali process, which substance do we get at anode?
(a) Cl_2 (b) H_2
(c) Na (d) O_2

17. Which of the following metals, produce hydrogen gas on reacting with very dilute HNO_3?
(a) Mg (b) Zn
(c) Na (d) Fe

18. An ant when bites us, it injects a substance 'X' which causes pain and irritation. The structural formula of substance 'X' is:

(a) 
(b) 
(c) 
(d) 

19. Which one of the following has highest number of molecules?
(a) 11 gram of CO_2 (b) 9 gram of N_2
(c) 9 gram of O_2 (d) 2 gram of H_2

20. Which hydrocarbon does not undergo addition reaction?
(a) C_3H_6 (b) C_5H_{10}
(c) C_5H_8 (d) C_2H_6

21. The incorrect statement regarding evaporation is :
(a) It is a surface phenomenon
(b) It causes cooling
(c) It is a bulk phenomenon
(d) Rate of evaporation increase with the increase of temperature

22. 2, 2-dimethyl propane is the isomer of which of the following alkane:
(a) Butane
(b) Pentane
(c) Propane
(d) All of the above

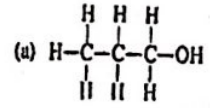
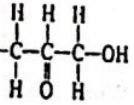
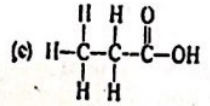
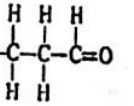
23. Which of the following oxide of nitrogen is most covalent in nature?
(a) N_2O_4 (b) N_2O_5

(c) N_2O_3 (d) NO_2

24. Which of the following method is used to separate two miscible liquids from their mixture?
(a) Crystallization
(b) Differential extraction
(c) Sublimation
(d) fraction distillation

25. The poisonous alcohol is :
(a) Propanol (b) Methanol
(c) Butanol (d) Ethanol

26. Which of the following is propanoic acid:

(a) 
(b) 
(c) 
(d) 

(a) (b)
(c) (d)

27. $2Pb(NO_3)_{2(s)} \xrightarrow{heat} 2PbO_{(s)} + 4NO_{2(g)} + O_{2g}$

the above reaction is:
(a) Exothermic
(b) Photochemical
(a) Decompositon
(b) Displacement

28. Element X forms an oxide with the formula XO. What will be formula of the compound formed when this X reacts with chlorine?
(a) X_2CL (b) XCL_3
(c) XCL_2 (d) XCL

29. A common metal present in bronze and solder alloy is:
(a) Copper (b) Tin
(c) Lead (d) Zinc

30. The nature of Al_2O_3 is:
(a) Acidic
(b) Basic
(c) Both acidic and basic
(d) none of the above

31. Which one is not the correct direction of blood circulation?
(a) artery→ arteriole→network →organ
(b) Organ→capillary network → veinule → organ
(b) Pulmonary artery → lung→ pulmonary vein → heart
(d) Pulmonary vein → lung → pulmonary artery → heart

32. Fish circulatory system does not consist of:
(a) single circulation
(b) double circulation
(c) mixing of oxygenated and deoxygenated blood
(d) closed circulation

33. Vertebrate heart receives oxygenated blood from lungs through:
(a) Pulmonary artery
(b) pulmonary vein
(c) left atrium
(d) right atrium

34. Which is not an asexual reproduction?
(a) Fragmentation(b) Budding
(c) Regeneration (d) Fertilization

35. Which of the following is not a simple tissue in plants:
(a) Parenchyma (b) Phloem
(c) Pollenchyam (d) Sclerenchyma

36. A reflex arc does not involve:
(a) Motor neuron (b) Sensory neuron
(c) Brain (d) Relay neuron

37. A neuron can't have:
(a) An axon
(b) A dendrite
(c) More than one dendrite
(d) Two nuclei

38. Brain in yertebrate is encased in :
(a) Sternum (b) Cranium
(c) Palatine (d) None

39. Thinking part of brain is:

(a) Medulla (b) Cerebellum
(c) Cerebrum (d) Hypothalamus

40. Which one of the following is an example of connective tissue:
(a) cardiac muscles
(b) blood
(c) striated muscles
(d) None of these

41. Variations of which Natural Selection acts are:
(a) Acquired
(b) Hereditary
(c) Environmental
(d) Nutritional

42. Algae belongs to:
(a) Thallophyta
(b) Bryophyta
(c) Pteridophyta
(d) None of the above

43. Which is a true fish?
(a) Jelly fish (b) Cuttle fish
(c) Silver fish (d) Tuna fish

44. Which one is not correct?
(a) feathers, aves
(b) hair, mammalia
(c) gills, pisces
(d) vertebral column, protochordates

45. Sea Horse (Hippocampus) belongs to:
(a) Amphibian (b) Platyhelminhs
(c) Sponges (d) Annelids

46. Which are true coelomates?
(a) Nematodes (b) Platyheminths
(c) Sponges (d) Annelids

47. Whale is an example of which group?
(a) Pisces (b) Amphibian
(c) Reptiles (d) Mammalia

48. Prokaryote cell lacks:
(a) Cell membrane
(b) Nuclear membrane
(c) Plasma membrane
(d) Cell wall

49. A single cell eukaryote organism is called:
(a) Monera (b) Protista
(c) Metaphyta (d) Metazoa

50. Blood pressure is measured with an instrument:
(a) Potometer
(b) Sphygmomanometer
(c) Lactometer
(d) None of the above

51. What is the currency of Bangladesh?
(a) Banga (b) Rupiah
(c) Ringet (d) Taka

52. Who is the author of the novel, "*the* Last Train to Pakistan":
(a) R. K. Narayan
(b) Mulk Raj Anand
(c) Khushwant Singh
(d) Anita Desai

53. What does SIT stand for?
(a) State Investigation Team
(b) Special Intelligence Team
(c) Special Investigation Tribunal
(d) Special Investigation

54. Who is the Deputy Chairman of Planning Commission?
(a) Montek Singh Ahluwalia
(b) Dr. Manmohan Singh
(c) Pranab Mukherji
(d) Sam Pitroda

55. The Nobel Prize winner writer Gunter Grass belongs to:
(a) Austria (b) Germany
(c) Finland (d) Poland

56. Attari is the check post in:
(a) India-Nepal border
(b) India-Afghanistan border
(c) India-Bhutan border
(d) India-Pakistan border

57. The US astronauts landed on the moon is in:
(a) 20 July 1969
(b) 1 January 1968
(c) 5 November 1970
(d) 11October 1961

58. Sanchi a town famous for its stupas is in:

(a) Gujarat
(b) Rajasthan
(c) Odisha
(d) Madhya Pradesh

59. The Hundred Year's War during 1337-1453 was fought between:
(a) England & Germany
(b) Spain & France
(c) England & France
(d) Russia & Turkey

60. Leukemia stands for:
(a) a skin disease (b) a chemical
(c) blood cancer (d) a drink

61. Who was the leader of the Khilafat Movement?
(a) Muhammad Ali Jinnah
(b) Abul Kalam Azad
(c) Muhmmad Ali Johar
(d) Ahmad Raza Khan

62. Wali, one of the earliest Urdu poets, was from:
(a) Punjab (b) Lucknow
(c) Deccan (d) Delhi

63. Babar established the Mughal empire after defeating :
(a) Tughlaqs (b) Lodhis
(c) Khiljis (d) Raja jai Chand

64. Shah Waliullah is a ----- century Muslim intellectual :
(a) 17^{th} (b) 19^{th}
(c) 18^{th} (d) 20^{th}

65. Who did assist Shibli Numani in wiring **Siratun-Nabi?**
(a) Ashraf Ali Thanawi
(b) Sir Syed
(c) Deputy Nazir Ahmad
(d) Syed Sulaiman Nadwi

66. Who among the following is not a Mughal emperor?
(a) Shah Alam (b) Humayun
(c) Firoz Shah (d) Bahadur Shah

67. The Quran was revealed over a period of:
(a) 10 years (b) 23 years
(c) 40 years (d) 15 years

68. The battle of Hunain was fought in the days of:
(a) Prophet Muhammad (pbuh)
(b) Caliph Abu Bakr
(c) Caliph Umar
(d) Caliph Usman

69. The two hillocks close to Kabah are:
(a) Safa & Marwah
(b) Judi & Tur
(c) Tur & Safa
(d) Judi & Marwah

70. Who among these is not the Prophet Mohammad's (pbuh) companion?
(a) Salahuddin Ayyubi
(b) Zayad ibn Harith
(c) Umm Sulaim
(d) Fazal ibn Abbas

71. What is the area of the quadrilateral ABCD where AB=BC= 10 cm, CD= 12cm, AD=20 cm and AC=16cm?
(a) 96 cm^2 (b) 144 cm^2
(c) 160 cm^2 (d) 190 cm^2

72. Consider the following statements:
A:Diagonals of a rhombus are equal
B:Diagonals of a rectangle bisect each other at right angles:
What is your opinion
(a) Only A is true
(b) Only B is true
(c) Both A & B
(d) Both A & B are false

73. There are 5 red and 8 green balls in a bag. A ball is taken out at random from the bag. What is the probability that the ball is red?
(a) 5/13 (b) 5/8
(c) 1/2 (d) 5

74. A die is thrown twice. What is the probability that 6 will not come up either time?
(a) $\frac{11}{36}$ (b) $\frac{12}{36}$

(c) $\frac{24}{36}$ (d) $\frac{25}{36}$

75. Class-mark of a class-interval is given by:
(a) upper limit-lower limit
(b) $\frac{1}{2}$(upper limit-lower limit)
(c) Upper limit + lower limit
(d) $\frac{1}{2}$ (Upper limit + lower limit)

76. Empirical relationship among the three measures of central tendency is:
(a) 3 Mean= Median + 2 Mode
(b) 3 Median = Mode + 2 Mean
(c) 3 Mode = 2 Mean + Median
(d) Mode= 1/2 (Mean + Mode)

77. What is the volume of a sphere whose surface area is $1386cm^2$?
(a) $179\frac{2}{3}cm^3$ (b) $539\ cm^3$
(c) $606\frac{3}{8}\ cm^3$ (d) $4851\ cm^3$

78. How many coins, 3.5 cm in diameter and of the thickness 2mm, must be melted to form a cuboid of dimensions 11 cm x10cm x 7 cm?
(a) 40 (b) 400
(c) 1600 (d) 4000

79. A chord of a circle is equal to the radius of the circle. What is the angle subtended by the chord at a point on the minor arc?
(a) 30^0 (b) 60^0
(c) 150^0 (d) 120^0

80. Which of the following is not true?
(a) The value of sin A can never exceed 1
(b) The value of sec A is always greater than or equal to 1
(c) sin (9-A) sec (90-A) = cot A
(d) $\sec^2 A + \tan^2 A = 1$ for $0^0 \le A \le 90^0$

81. Which one of the following is true?
(a) sin (A + B) = Sin A + Sin B
(b) the value of sin θ increase as θ increase in $(0^0, 90^0)$
(c) the value of cos θ increase as θ increase in $(0^0, 90^0)$
(d) tan A is not defined for A=0

82. If $\cot(A+B)=\frac{1}{\sqrt{3}}$, $\cot(A-B)=\sqrt{3}$ where A> B and $0^0 < A + B < 90^0$, then A and B are respectively:
(a) $60^0, 30^0$ (b) $60^0, 15^0$
(c) $45^0, 30^0$ (d) $45^0, 15^0$

83. A straight highway leads to foot of a tower. A ma standing at the top of the tower observers a car at an angle of depression of 30^0, which is approaching the foot of the tower with a uniform speed. Ten seconds later, the angle of depression of the car is found to be 60^0. What will be the time taken by the car to reach the foot of the tower from this time?
(a) cannot be found
(b) 5 soconds
(c) $5\sqrt{3}$ seconds
(d) 10 seconds

84. If the fifth and fifteenth terms of an AP are 20 and -20 respectively, which term of this AP is zero?
(a) 9^{th} (b) 10^{th}
(c) 19^{th} (d) 20^{th}

85. How many three digits numbers are divisible by 6?
(a) cannot be found (b) 149
(c) 150 (d) 166

86. For what value of n are the n^{th} terms of two AP's : 51, 53, 55.... And 1, 5, 9, 13, ... equal?
(a) 24 (b) 25
(c) 26 (d) 50

87. If the sum first n terms of an AP is $4n-n^2$, what is its common difference?
(a) -2 (b) -1
(c) 1 (d) cannot be found

88. The roots of the quadratic eqution $4x^2 - 4\sqrt{3}x + 3 = 0$ are:
(a) $-\frac{\sqrt{3}}{2}, -\frac{\sqrt{3}}{2}$ (b) $-\frac{\sqrt{3}}{2}, +\frac{\sqrt{3}}{2}$
(c) $\frac{\sqrt{3}}{2}, \frac{\sqrt{3}}{2}$ (d) $-\frac{\sqrt{3}}{4}, -\frac{\sqrt{3}}{4}$

89. AB is diameter of a circle. Point C on its circumference is such that AC= $\sqrt{13}$ cm. BC = 6cm. the area of the circle is :
(a) $3\sqrt{13}cm^2$ (b) $19\frac{1}{4}cm^2$
(c) $38\frac{1}{2}cm^2$ (d) $77\ cm^2$

90. For what values of a and b does the following pair of linear equations have an infinite number of solutions:
$2x + 3y = 7$
$(a-b)x + (a+b)y = 3a + b - 2$
(a) 5, -1 (b) -5, 1
(c) 5, 1 (d) -5, -1

91. If a transversal intersects two parallel lines, then which of the following is true?
(a) each pair of corresponding angles is equal
(b) each pair of alternate interior angle is supplementary
(c) each pair of interior angle on the same side of the transversal is equal
(d) all the above statement are true

92. A girl of height 120 cm is walking away from the base of a post at a speed 1.5 m/s. if the lamp is 6 m above the ground, what will be the length of her shadow after 4 seconds?
(a) 1, 2 m (b) 1.5m
(c) 1.6 m (d) 1.8m

93. In ΔABC, AB=3 $\sqrt{3}$, BC=3 and AC=6, then which one is correct?
(a) $<A=90^0$ (b) $<B=90^0$
(c) $<C=90^0$ (d) none of these

94. Consider the following statements:
A: A linear equation in two variables has infinitely many solutions
B: The graph of $x = a$ is a straight line parallel to x- axis
What is your opinion?
(a) Only A is true
(b) Only B is true
(c) Both A and B are true
(d) Both A and B are false

95. One woman and 2 men can finish some work in 4 days. Three women and two men can finish the same work in 2 days in how many days one woman alone can finish the work?
(a) 6 (b) 8
(c) 12 (d) 16

96. For what value of k will the following pair of linear equation have no solution:
$x + 3y = 1$
$(k-1)x + (2k-1)y = 2k + 1$
(a) 0 (b) 1
(c) 2 (d) 3

97. In which quadrant each of point (3 -1), (-2, -2) and (-5, 2) lie?
(a)Second quadrant, third quadrant, fourth quadrant
(b)Third quadrant, fourth quadrant, second quadrant,
(c)Sponges fourth quadrant, third quadrant, second quadrant
(d)Fourth quadrant, second quadrant third quadrant

98. What figure is obtained by joining the points (4, -1), (5, 3), (6, -1)?
(a) Equilateral triangle
(b) Isosceles triangle
(c) Right triangle
(d) None of thesee

99. If 2 is one of the zeroes of the polynomial $x^3 - 4x^2 + 5x - 2$, then the other two zeros are:
(a) 1,1 (b) 1, -1

(c) -1, -2 (d) -1, -1

$100.\overline{0.001}$ is equal to

(a) $\frac{1}{1000}$ (b) $\frac{1}{999}$ (c) $\frac{1}{990}$ (d) $\frac{1}{99}$

ANSWERS -2012-2013

1. (b)	2. (c)	3. (b)	4. (c)	5. (a)	6. (b)	7. (b)	8. (a)	9. (c)	10. (b)
11. (a)	12. (c)	13. (c)	14. (c)	15. (d)	16. (a)	17. (a)	18. (d)	19. (d)	20. (d)
21. (c)	22. (b)	23. (b)	24. (d)	25. (b)	26. (c)	27. (c)	28. (c)	29. (c)	30. (c)
31. (d)	32. (b)	33. (b)	34. (d)	35. (b)	36. (c)	37. (d)	38. (b)	39. (c)	40. (b)
41. (b)	42. (a)	43. (d)	44. (d)	45. (b)	46. (d)	47. (d)	48. (b)	49. (b)	50. (b)
51. (d)	52. none	53. (d)	54. (a)	55. (b)	56. (d)	57. (a)	58. (d)	59. (c)	60. (c)
61. (c)	62. (c)	63. (b)	64. (c)	65. (d)	66. (c)	67. (b)	68. (a)	69. (a)	70. (a)
71. (b)	72. (d)	73. (a)	74. (d)	75. (d)	76. (b)	77. (d)	78. (b)	79. (d)	80. (d)
81. (b)	82. (d)	83. (b)	84. (b)	85. (c)	86. (c)	87. (a)	88. (c)	89. (c)	90. (c)
91. (a)	92. (b)	93. (b)	94. (a)	95. (b)	96. (c)	97. (c)	98. (b)	99. (a)	100. (b)

+2 AMU Sci./Dip. Engg. 2011-2012

1. Who among the following is famous for translating the Holy Quran into English?
   (a) M.M. Pickthall (b) P.G. Woode
   (c) A. Imran Ali (d) Usman Ghazi
2. How many surahs are there in the Holy Quran?
   (a) 111 (b) 114
   (c) 118 (d) 121
3. Under whose reign did mosque building reach its peak?
   (a) Babar (b) Humayun
   (c) Shah Jahan (d) Auragzeb
4. Which of the following was not a part of Akabar's empire?
   (a) Kashmir (b) Assam
   (c) Kandhar (d) Bengal and Orissa
5. The famous book "Seerat-un-Nabi" was written by:
   (a) Shah Waliullah
   (b) Sir Syed
   (c) Maulana Shibli
   (d) Maulana Mohd Ali
6. Who wrote "India Wins Freedom"?
   (a) Maulana Abul Kalam Azad
   (b) Khawaja Moinuddin Chishti
   (c) J.L. Nehru
   (d) M. K. Gandhi
7. When Prophet Muhammad's mothers died what was his approximate age?
   (a) 4 years (b) 5 years
   (c) 7 years (d) 6 years
8. The last sermon of Prophet Muhammad was delivered on:
   (a) 10^{th} day of Zil Hijjah
   (b) 9^{th} day of Zil Hijjah
   (c) 8^{th} day of Zil Hijjah
   (d) 7^{th} day of Zil Hijjah
9. Haji is obligatory upon Muslims if they?
   (a) Can afford it
   (b) Are married
   (c) Are adults
   (d) Fulfill all of the above criteria
10. How many months are there in the Islamic calendar?
    (a) 10 (b) 11
    (c) 12 (d) 13
11. Who where " The White Tiger"?
    (a) Avind Adiga (b) Kiran Desai
    (c) J.M. Coetzee (d) Salman Rushdie
12. The Union Health Minister of India is:
    (a) Mukul Wasnik
    (b) Ambika Soni
    (c) Ghulam Nabi Azad
    (d) Kapil Sibbal
13. Who wrote "The Fountainhead"?
    (a) John Osborne (b) Ayn Rand
    (c) Henry Miller (d) Pearl S. Buck
14. With which game is the Ryder Cup associated?
    (a) Polo (b) Hockey
    (c) Horse racing (d) Golf
15. Which of the following countries has the largest Muslim population?
    (a) India (b) Pakistan
    (c) Indonesia (d) Iran
16. Who is the Chairman of the Public Account Committee?
    (a) Murli Manohar Joshi
    (b) Arun Jaitely
    (c) Ahmad Patel
    (d) Praful Patel
17. India is the ....biggest producer of rice in the world.
    (a) 2^{nd} (b) 3^{rd}
    (c) 4^{th} (d) 5th
18. Nira Radia is a:
    (a) Film star (b) Corporate lobbyist
    (c) Journalist (d) Novelist
19. Which famous financier was sentenced to 150 years in prison, for financial fraud, in the U.S.?

(a) David Souter (b) Bernie Madoff
(c) John Koore (d) Tom Paine

20. Which famous Indian historian was awarded the John W. Kluge Prize?
(a) Irfan Habib (b) Bipin Chandra
(c) Sumit Sarkar (d) Romila Thapar

21. Consider the following statements:
A: Every whole number is a natural number
B: Every rational number is an integer
In your opinion :
(a) Only A is true (b) Only B is true
(c) Both A and B are true
(d) Both And B are false

22. 0.2313131----- is equal to:
(a) $\frac{229}{999}$ (b) $\frac{229}{990}$
(c) $\frac{231}{990}$ (d) $\frac{231}{99}$

23. if α, β, γ are the zeros of the cubic polynomial $x^3 - mx^2 + nx - l$, then:
(a) $\alpha+\beta+\gamma=m, \alpha\beta+\beta\gamma+\gamma\alpha=n, \ldots \alpha\beta\gamma=l$
(b) $\alpha+\beta+\gamma=-m, \alpha\beta+\beta\gamma+\gamma\alpha=n, \ldots \alpha\beta\gamma=-l$
(c) $\alpha+\beta+\gamma=m, \alpha\beta+\beta\gamma+\gamma\alpha=-n, \ldots \alpha\beta\gamma=l$
(d) $\alpha+\beta+\gamma=m, \alpha\beta+\beta\gamma+\gamma\alpha=n, \ldots \alpha\beta\gamma=-l$

24. For what value of x are the points (x,7), (5,3) and (7,1) collinear?
(a) 1 (b) 2
(c) 3 (d) 4

25. The point on the x-axis which is equidistant from (3,-5) and (6,2)
(a) (1,0) (b) (2,0)
(c) (4,0) (d) (4,5,0)

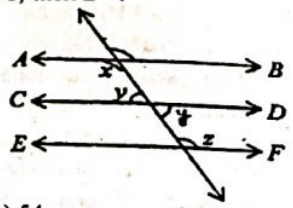
26. If AB is the diameter of a circle whose centre is at (-2,-1) and A is (4,-3) then B is:
(a) (1,-2) (b) (2,-2)
(c) (4,0) (d) (-8,1)

27. The area of the triangle formed by joining the middle points of the sides of the triangle whose vertices are (0,16), (0,0) and (4,0) is :
(a) 8 (b) 32/3
(c) 16 (d) 32

28. Is there a temperature which is numerically the same in both Fahrenheit and Celsius? If yes, find it:
(a) There is no such temperature
(b) -100
(c) -40
(d) 0

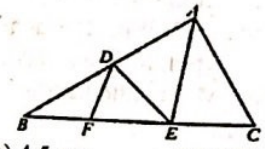
29. if $2x + y = 2xy$ and $\frac{2x+4y}{xy} = 5$, *then* x =?
(a) 0 (b) 1
(c) 2 (d) 2.5

30. if AB || CD and CD || EF and x:y :: 7: 3, then z =?



(a) 54 (b) 126
(c) 140 (d) none of these

31. In ΔABC, DE || AC and DF || AE, if AD =2 cm, AB=6cm, FE=1.5cm, then BC=?



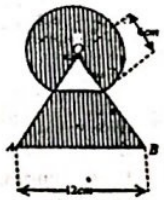
(a) 4.5 cm (b) 6.75 cm
(c) 7.5 (d) 9 cm

32. Diagonals of a trapezium ABCD with AB || CD intersect each other at O. if 2AB=3 CD, the ratio of the areas of triangle of triangles AOB and COD is
(a) 2:3 (b) 3:2
(c) 4:9 (d) 9:4

33. In a circle of radius 5 cm, chords PQ=QR= 6cm. then the length of chord PR=?
(a) 8cm (b) 9.6 cm
(c) $6\sqrt{2}$ (d) 12 cm

34. Two concentric circle are of radius 3 cm and 4cm. the length of the chord of the larger circle which touches the smaller circle is:
(a) $\sqrt{7}$ cm(b) 5 cm
(c) $2\sqrt{7}$ cm (d) 10 cm

35. What is the area of the shaded region where a circular arc of radius 6 cm has been drawn with vertex O of an equilateral OAB of side 12 cm as centre?
(a) $30(\pi+\sqrt{3})cm^2$
(b) $(24\pi+36\sqrt{3}cm^2$
(c) $36(\pi+\sqrt{3})cm^2$
(d) None



36. A village having a population of 6000, requires 100 liters of water per head per day. It has a tank measuring 25m x 12m x 6m. For how many days will the water of this tank last?
(a) 1 day (b) 2 days
(c) 3 days (d) 6 days

37. The curved surface area of a frustum of cone of radii r_1 and r_2 and height h equals $\pi l(r_1 + r_2)$. Then l^2=?
(a) $h^2 + r_1^2 + r_2^2$
(b) $h^2 + (r_1 - r_2)^2$
(c) $h^2 - (r_1 - r_2)^2$
(d) $(h - r_1)^2 + (h - r_2)^2$

38. A solid cylinder of base of 36 cm diameter is melted and recast into a solid cone height 24 cm and radius of the base 36 cm. height of the cylinder is:
(a) 24 cm (b) 30cm
(c) 32 cm (d) $12\sqrt{13}$

39. Which of the following is not a measure of central tendency for ungrouped data?
(a) Mean (b) Median
(c) Mode (d) Histogram

40. The median of the distribution given below is 285.

Class-interval	Frequency
0-100	+
100-200	x
200-300	20
300-400	15
400-500	y
500-600	5
Total	60

The values of x,y are respectively:
(a) 6, 10 (b) 7,9
(c) 9,7 (d) 10, 6

41. The probability of an even lies between:
(a) 0 and 1 (0 and 1 inclusive)
(b) 0 and 1 (0 and 1 exclusive)
(c) -1 and +1
(d) 0 and ∞

42. Consider the following statements:
A: The probability of a sure event is1.
B: The probability of an impossible event is1.
C: For any event E, P(E), P ($\overline{E}$)=1 where $\overline{E}$ stands for 'not' 'E'. In your opinion:
(a) Only A is correct
(b) Only B is correct
(c) All the three are correct
(d) All the three are incorrect

43. A box contain 90disc, numbered from 1 to 90, if one disc is drawn at random from the box, the probability that it bear a two digit number is:
(a) 1/90 (b) 1/2
(c) 8/9 (d) 9/10)

44. Consider the following statements.
A: Only one line can pass through a single point
B: Two distinct lines cannot have more than one point in common.
What is your opinion:

(a) Only A is correct
(b) Only B is correct
(c) Both A and B are correct
(d) Both A and B are incorrect

45. ABCD is a parallelogram AD⊥ DC and CF⊥ AD. If AB=8cm, AE=4 cm. CF=5cm. then AD=?
(a) 2.5 cm (b) 3.2 cm
(c) 6 cm (d) 6.4 cm

46. Sum of areas of two squares is 117 m^2. If the difference of their perimeters is 12m, what is the length of the smaller square?
(a) 4m (b) 5m
(c) 6m (d) 7m

47. Which one of the following is not an AP?
(a) $1^2, 2^2-1^2, 3^2-2^2, 4^2-3^2$.....
(b) $\sqrt{2}, \sqrt{8}, \sqrt{18}, \sqrt{32}$ .....
(c) $2, 3+\sqrt{2}, 4+2\sqrt{2}, 5+3\sqrt{3}$, ...
(d) 0.2, 0.22, 0.222, 0.2222,.....

48. The sum of odd numbers between 0 and 100 is:
(a) 2400 (b) 2450
(c) 2500 (d) 2550

49. If cot 3A=tan (A-10^0), where 3A is an acute angle, then the value of A is:
(a) 20^0 (b) 25^0
(c) 40^0 (d) 30^0

50. The shadow of a tower, standing on a level ground, is found to be 30m longer when the sun's altitude is 30^0 than when it is 60^0. What is the height of the tower?
(a) $10\sqrt{3}m$ (b) 15m
(c) $15\sqrt{3}$ (d) $20\sqrt{3}m$

51. Consider the velocity-time graph of an object that moves under uniform acceleration. The slope of this graph gives us:
(a) kinetic energy of the object
(b) momentum of the object
(c) acceleration of the object
(d) speed of the object

52. A motorcar is moving with a velocity of 72km/h and it takes 5 seconds to stop after brakes are applied. Calculate the force exerted by the brakes on the motorcar. If its mass along with the passengers is 900 kg.
(a) 5400 N (b) 4500 N
(c) 3100 N (d) 3600 N

53. A bullet of mass 40 g is horizontally fired with a velocity 200ms^{-1} from a pistol of mass 2 kg. what is the recoil velocity of the pistol?
(a) 10 m/s (b) -8 m/s
(c) 5 m/s (d) -4 m/s

54. A stone is allowed to fall from the top of a tower 50 m high and at the same time another stone is projected vertically upwards from the ground with a velocity of 25 m/s. Calculate when the two stone will meet:
(a) 2s (b) 4 s
(c) 8s (d) 10s

55. What is the work to be done to increase the velocity of a car from 36 kmh^{-1} to 72 kmh^{-1} if the mass of the car is 2000 kg?
(a) 5×10^7J (b) 2×10^6J
(c) 3×10^5J (d) 4×10^3J

56. At a given temperature, the speed of sound is greater:
(a) in vacuum (b) in air
(c) in water (d) in aluminum

57. An object, 5.0 cm in size is placed at 25.0 cm in front of a concave mirror of focal length 20.0 cm and a sharp image is obtained on the screen placed at the proper location. What is the height of the image?
(a) 20cm (b) -10 cm
(c) -6cm (d) +20 cm

58. the human beings have two eyes instead of one because:
(a) it gives a wider field of view
(b) it gives a smaller field view
(c) distant objects can be seen easily
(d) coloured projects can be seen easily

59. The electrical resistivity of diamond at 20^0 C may be of the order of:
(a) $10^{-8}\Omega$m (b) $10^{-6}\Omega$m
(c) $10^2\Omega$ m (d) $10^{12}\Omega$m

60. How many 440 Ω resistors (in parallel) are required to carry 5 A on a 220 V line?
(a) 4 (b) 6
(c) 8 (d) 10

61. A network of five identical resistor, each of value 25Ω is made as shown in the figure. Equivalent resistance between points A and B is:

(a) 125Ω (b) 50Ω
(c) 25Ω (d) 15Ω

62. A rectangular coil of copper wires is rotated in a magnetic field. The direction of the induced current changes once in each:
(a) Half-revolution
(b) One revolution
(c) One-fourth revolution
(d) Two revolution

63. Most of the sources of energy we use represent stored solar energy. Which of the following is not ultimately derived from the sun's energy?
(a) Geothermal energy
(b) Nuclear energy
(c) Wind energy
(d) Bio-mass

64. The estimated coal reserves of earth are said to be enough to last another:
(a) 5000 years (b) 1000 years
(c) 200 years (d) 50 years

65. The energy produced in the fission of an atom of Uranium is nearly:
(a) 10 million times the energy produced by the combustion of a carbon atom from coal.
(b) 100 million times the energy produced by the combustion of a carbon atom from coal.
(c) 1,000 million times the energy the energy produced by the combustion of a carbon atom from coal.
(d) 10,000 million times the energy produced by the combustion of a carbon atom from coal.

66. Tick (√) the correct statement:
(a)Water vapours at 100^0C have less energy than water at 100^0 C
(b)Water vapours at 100^0C more energy than water at 100^0 C
(c)Water vapours at 100^0C have equal to water at 100^0C
(D)Water vapours at 100^0C have equal to water at 100^0C

67. Tick (√) the correct statement:
a) Camphor and ammonium chloride both undergo sublimation
(b) Only ammonium chloride undergo sublimation
(c) Only Camphor sublimation
(d) Neither of them undergo sublimation

68. Which of the following metals is /are liquid at 50^0C?
(a) gallium (b) mercury
(c) cesium (d) all the above

69. The law of conservation of mass during a chemical reaction was established by:
(a) Maharishi Kanad and Pakudha Katayayam
(b) Antoine L. Laboisier and Joseph L. Proust
(c) Antoine L. Loboisier only
(d) Joseph L. Proust only

70. Which one of the following elements does not show any isotopes?
(a) Carbon (b) Hydrogen
(c) Argon (d) Chlorine

71. A chemical reaction may have taken place if we observe:
(a) Change in state and evolution of gas
(b) Change in color and temperature
(c) Both (A) and (B)
(d) None

72. Which one of the following equations is balanced?
(a) $6CO_2 + 6H_2 \rightarrow C_6H_{12}O_6 + O_2$
(b) $3Fe + 4H_2O \rightarrow Fe_3O_4 + H_2$
(c) $CH_3OH + O_2 \rightarrow CO_2 + 2H_2O$
(d) $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$

73. Sodium bicarbonate is used as:
(a) Baking powder
(b) Fire extinguisher
(c) Both the above
(d) None

74. The example(s) of amphoteric oxide (s) is/are:
(a) Al_2O_3 and ZnO both
(b) Al_2O_3 only
(c) Zno only
(d) None

75. Tick the name of the non-metal which is liquid at room temperature:
(a) Mercury (b) Iodine
(c) Sulphur (d) Bromine

76. Tick one which is not an allotrope of carbon:
(a) Diamond (b) Cryptands
(c) Graphite (d) Fullerences

77. Number of covalent bonds in propane (C_3H_8) is:
(a) 8 (b) 9
(c) 10 (d) 11

78. The metallic properties of elements in modern periodic table:
(a) Increase in a period from left to right
(b) Increase in a group from top to bottom
(c) Both the statements (A) and (B) are correct
(d) None

79. The position of an element in periodic table indicates its:
(a) Chemical reactivity
(b) Number of electrons in its outermost shell
(c) Atomic number
(d) All the above

80. Silicon is surrounded by the elements of atomic number 6, 13, 15 and 32 in the periodic table then:
(a) The properties of the elements of atomic number 6 and 32 will be similar to silicon.
(b) The properties of the elements of atomic number 13 and 15 will be similar to silicon
(c) The properties of the elements of atomic number 6 and 13 will be similar to silicon
(d) The properties of elements of atomic number 15 and 32 will be similar to silicon

81. Which of the following organelles is present in plant cells only:
(a) Mitochondria
(b) Plastids
(c) Vacuoles
(d) Endoplasmic reticulum

82. Which of the following is not a meristematic tissue?
(a) Inercalary meristem
(b) Cambium
(c) Apical meristem
(d) Vascularbundle

83. Which of the following is a thin walled simple permanent tissue?
(a) Collenchyma (b) Sclerenchyma
(c) Parenchyma (d) Vessel element

84. Which of the following group of plants are without specialized vascular system?
(a) Monocots (b) Pteridophytes
(c) Bryophytes (d) Gymnosperms

85. Protective Tissues in animal body is:
(a) Connective tissue
(b) Epithelial tissue
(c) Bryophytes
(d) Areolar connective tissue

86. Arthropoda with a meaning of jointed legs does not include:
(a) Scorpion (b) Housefly
(c) Prawn (d) Octopus

87. Which of the following is not placed under Pisces?
(a) Rohu fish (b) Sea horse
(c) Flying fish (d) Whale

88. Which of the following animal is not placed with aves?
(a) Bat (b) Ostirch
(c) Pigeon (d) Sparrow

89. Carbon and energy requirements of autotrophs are fulfilled through:
(a) Nutrition from soil
(b) Respiration
(c) Assimilation
(d) Photosynthesis

90. The translocation of photosynthates in phloem is achieved by utilising :
(a) Pressure gradient
(b) Energy from ATP
(c) Suction pressure
(d) Without osmotic and suction pressure

91. The growth inhibiting hormone in plant is:
(a) Gibberellin (b) Auxin
(c) Embryo (d) Abscisic acid

92. In germinating seeds, the organ which elongates to become future shoot is called as :
(a) Plumule (b) Radicle
(c) Embryo (d) Cotyledons

93. Central nervous system in humans consist of:
(a) Brain and nerve tissues
(b) Brain and spinal cord
(c) Brain, spinal cord and veins
(d) Brain only

94. The reflex arc connection between input nerves and output nerves are first made in:
(a) Spinal cord (b) Brain
(c) Muscles (d) Skin

95. The gastric glands present in the walls of stomach release mainly:
(a) Bilirubin, HCI, Mucus
(b) HCI, Enzymes, Saliva
(c) Hydrochloric Acid, Enzyme pepsin and Mucus
(d) Enzyme, insulin, saliva

96. The respiratory pigment present in the red blood corpuscles of human blood is :
(a) WBC (white blood corpuscles)
(b) Eosinophils
(c) Haemoglobin
(d) Blood sucrose

97. In human heart, de-oxygenated blood from the body comes to:
(a) Right atrium (b) Left atrium
(c) Right ventricle (d) Left ventricle

98. Which hormone is directly released in the blood of humans and manya animals?
(a) Thyroxin (b) Insulin
(c) Adrenaline (d) Oestrogen

99. The common mode of reproduction in Hydra is
(a) Fission
(b) Fragmentation
(c) Regeneration and budding
(d) Fission and fragmentation

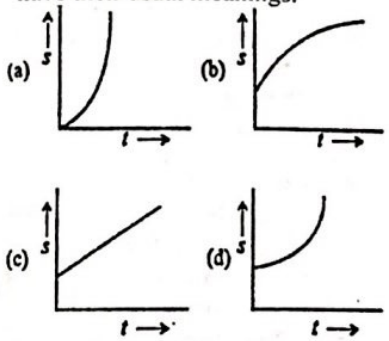
100. Carpel of a flower consists of which of the following parts?
(a) Stigma, Style, Filament
(b) Fialment, Anther, Pollen
(c) Ovary and Ovule
(d) Stigma, Style, Ovary

ANSWERS - 2011-2012

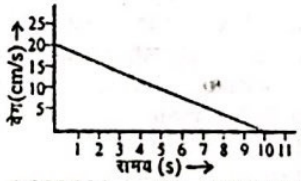
1. (a)	2. (b)	3. (c)	4. (b)	5. (c)	6. (a)	7. (c)	8. (b)	9. (a)	10. (c)
11. (a)	12. (c)	13. (b)	14. (d)	15. (c)	16. (a)	17. (a)	18. (b)	19. (b)	20. (d)
21. (d)	22. (b)	23. (a)	24. (a)	25. (a)	26. (d)	27. (a)	28. (c)	29. (b)	30. (b)
31. (b)	32. (d)	33. (b)	34. (c)	35. (b)	36. (c)	37. (b)	38. (c)	39. (d)	40. (c)
41. (a)	42. (a)	43. (d)	44. (b)	45. (d)	46. (c)	47. (d)	48. (c)	49. (b)	50. (c)
51. (c)	52. (d)	53. (d)	54. (a)	55. (c)	56. (d)	57. (a)	58. (a)	59. (d)	60. (d)
61. (c)	62. (a)	63. (b)	64. (c)	65. (a)	66. (b)	67. (a)	68. (d)	69. (b)	70. (c)
71. (c)	72. (d)	73. (c)	74. (a)	75. (d)	76. (b)	77. (c)	78. (b)	79. (d)	80. (a)
81. (b)	82. (d)	83. (c)	84. (c)	85. (b)	86. (d)	87. (d)	88. (a)	89. (d)	90. (b)
91. (d)	92. (a)	93. (b)	94. (a)	95. (c)	96. (c)	97. (a)	98. (c)	99. (c)	100. (d)

+2 AMU Sci./Dip. Engg. 2010-2011

1. Which of the following graph is represented by $S=ut+\frac{1}{2}at^2$? Symbols have their usual meanings.



2. The velocity time graph of a ball of mass of 20g moving along a straight line on a long table is given in figure. How much force does the table exert on the ball to bring it to rest?



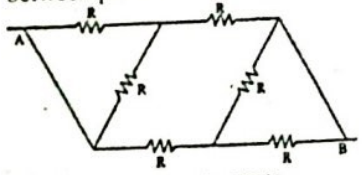
(a) -0.0004 N (b) +0.0004 N
(c) -0.0004 dyne (d) + 0.0004 dyne

3. The astronauts in the space shuttle orbiting the earth are weightless because:
   (a) they are so far from the earth that gravity is too weak to be noticed.
   (b) A gravitational field cannot act in the vacuum of space.
   (c) They are in a state of free fall.
   (d) The gravitational force of the moon balances that of the earth.
4. An object thrown at a certain angle from the ground. The initial and the final points of the path of the object lie on the same horizontal line. What is the work done by the force of gravity on the object?
   (a) 9.8 J (b) 9.8 erg
   (c) 980 erg (d) zero
5. A boy of 50 kg runs up a staircase of 45 steps in 9 seconds. If the height of each steps is 15 cm, his power is (taking $g=10^{ms-2}$)
   (a) 375 W (b) 500 W
   (c) 37.5 W (d) 3.75 W
6. The relative density of silver is 10.8. the density of water is 10^3 kg m^{-3}. The density of silver is:
   (a) 108 kg m^{-3} (b) 10.8 x 10^3 m^{-3}
   (c) 1.08 kg m^{-3} (d) None of the above
7. Which one of the following statement is correct about speed of sound?
   (a)The speed of sound depends on nature of the medium only
   (b)The speed of sound depends on temperature of the medium only
   (c)The speed of sound depends on pressure of the medium
   (d)The speed of sound depends on all above factors.
8. The image formed by a concave mirror is observed to be virtual, erect and larger than the object. Where should be the position of the object?
   (a) Between the principle focus an the centre of curvature
   (b) At the centre of curvature
   (c) Beyond the centre of curvature
   (d) Between the pole of the mirror and its principle focus
9. The clear sky is blue and sunset red because:
   (a) The nitrogen in the air has a blue colour
   (b) The oxygen in the air has a blue colour
   (c) Air molecules scatter more red light than blue light
   (d) Air molecules scatter more blue

light than red light

10. A myopic person has a far point for distinct vision at 5.6 m. what focal length spectacle lenses does he need to see distant objects distinctly?
(a) infinite (b) zero
(c) 12.2 m (d) 560 cm

11. A network of six identical resistors, each of value R is made as shown in the figure. Equivalent resistance between point A and B is:



(a) R/4 (b) 3R/4
(c) 4R/3 (d) 3R

12. A cell, an ammeter and a voltmeter are all connected in series. The ammeter reads a current. I and the voltmeter a potential difference V. If a torch bulb is connected across the voltmeter, then:
(a) both I and V will increase
(b) both I and V will decrease
(c) I will increase but V will decrease
(d) I will decrease but V will increase

13. The essential difference between an AC generator and a DC generator is that:
(a) AC generator has an electromagnet while a DC generator has a permanent magnet.
(b) DC generator generates a higher voltage
(c) AC generator generates a higher voltage
(d) AC generator has slip rings while the DC generator has a commentator

14. A stream of electrons is projected horizontally towards the right. If a magnet brought near the electron beam produces a field directed downward then the electron beam bends:
(a) downward (b) upward
(c) into the page (d) out of the page

15. In the nuclear reaction, ${}_1^3H + {}_1^2H \rightarrow {}_2^4He + X +$ energy, the particle 'X' is:
(a) α (b) γ
(c) ${}_0^1n$ (d) ${}_1^1p$

16. Which is not a fossil?
(a) Homo habilis
(b) Homo sapiens
(c) Homo erectus
(d) Homo neanderthalensis

17. Natural selection theory of C.R. Darwin was indenpendently given by another scientist called:
(a) Alfred Nobel
(b) Alfred Wallance
(c) T. Dobzhansky
(d) S. Wright

18. Which is not true in human?
(a) XO is Turner's syndrome
(b) XXY is Klinefelter's syndrome
(c) XYY is super female
(d) XXX is super female

19. Who among the following is not associated with origin of life?
(a) A.I. Oparin
(b) J.B.S. Haldane
(c) Stanley Miller
(d) Lord Zuckerman

20. Oxytocin is released from pituitary. It is
(a) A protein (b) Octapeptide
(c) Decapeptide (d) Bioamine

21. Which statement is wrong for humans?
(a) Fertilization is internal
(b) Fertilization takes place in fallopian tube
(c) Ovulation is following by fertilization
(d) Ovulation occurs prior to fertilization

22. Which of the following is a growth hormone of plants?
(a) Somatostatin (b) Leptin
(c) Gastrin (d) Auxin

23. Ascent of sap in plants takes place through
(a) Sieve tubes
(b) Phloem
(c) Trachieds and vessels
(d) All of the above

24. Pineal gland is located near
(a) Hypothalamus (b) Thyroid gland
(c) Adrenal gland (d) Pancreas

25. When are two inorganic phosphates used?
(a) ADP to ATP (b) AMP to ADP
(c) AMP to ADP (d) ADP to AMP

26. In which conversion is one inorganic phosphate released?
(a) ATP to AMP (b) ADP to AMP
(c) AMP to ADP (d) ADP to ATP

27. Which is not the correct scientific name of honeybee species?
(a) Apis indica (b) Apis dorsata
(c) Apis craniata (d) Apis mellifera

28. Which of the following aquatic animals are reared for obtaining pearls?
(a) Mussels (b) Prawns
(c) Mullets (d) Oysters

29. Which of the following is an example of micronutrient needed by plants?
(a) Sulphur (b) Magnesium
(c) Maganese (d) Potassium

30. Peptic ulcer is caused by :
(a) Trypanosoma gambinse
(b) Heliobacter pylori
(c) L. donovanae
(d) S. typhimurium

31. Famous book ' Systema Nature' was written by the scientist:
(a) C.R. Darwin (b) Lamarck
(c) G.J. Mendel (d) Carolus linnaeus

32. Members of which phylum are first coelomate with segmented body?
(a) Nematoda (b) Arthropoda
(c) Mollusca (d) Annelida

33. Which of the following belongs to subkingdom phanerogamae?
(a) Gymnosperms
(b) Pteridophytes
(c) Thallophytes
(d) Bryophytes

34. Which distinguishers plant and animals cells?
Tick the wrong option
(a) Glycogen in plants
(b) Starch in plants
(c) Plastid in plants
(d) Plastid in animals

35. Cell wall of the cork cells is impervious to gases and water due to deposition of
(a) cellulose and hemicellulose
(b) lignin
(c) suberin
(d) chitin

36. Roasting results in the production of metal in case of
(a) Bauxite (b) Zinc blende
(c) Cinnabar (d) Iron pyrite

37. Hydrogenation of vegetable oils is an example of :
(a) Physical change
(b) Substitution reaction
(c) Addition reaction
(d) Decomposition

38. Which sodium compound contains ten water molecules of crystallisatin?
(a) Baking soda
(b) Washing soda
(c) Common salt
(d) Sodium hydroxide

39. The components of which one of the following mixtures can be separated by the process of filtration?
(a) Suspension (b) Solution
(c) Emulsion (d) Sol

40. Which is not a chemical change?
(a) Freezing of water
(b) Rusting of iron

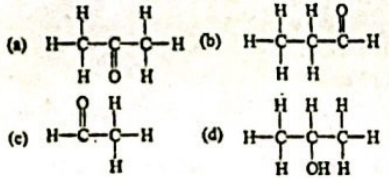
(c) Burning of paper
(d) Digestion of food

41. Al_2O_3 is:
(a) acidic oxide
(b) basic oxide
(c) neutral oxide
(d) amphoteric oxide

42. Which of the following compound is not in tetrahedral geometry?
(a) CCl_4 (b) C_2H_4
(c) CH_2CL_2 (d) CH_4

43. Which of the following alkane obtain when sodium salt of propionic acid is treated with soda-lime?
(a) Methane (b) Ethane
(c) Propane (d) Butane

44. Which of the following is acetone?



45. $2Pb(NO_3)_2(s) \xrightarrow{heat} 2PbO(s) + 4NO_2(g) + O_2(G)$
The above reaction is an example of a:
(a) Combination reaction
(b) Double displacement reaction
(c) Decomposition
(d) Displacement reaction

46. Law of Octaves is applicable only up to:
(a) Br (b) Li
(c) Ca (d) Sr

47. The formula of plaster of paris is:
(a) $CaSO_4.2H_2O$
(b) $CuSO_4\,5H_2O$
(c) $(CaSO_4)_2.2H_2O$
(d) $CaSO_4.1/2H_2O$

48. Among the following groups which is the Dobereiner's traid
(a) Li, Na, K (b) N,P, As
(c) F, Cl, Br (d) Cu, Ag, Au

49. Evaporation of liquid takes place:
(a) At its boiling point
(b) Above its boiling point
(c) Below its boiling point
(d) Above and at its boiling point

50. What is the mass of 3.011×10^{23} molecules of nitrogen gas?
(a) 2.8 g (b) 14 g
(c) 28 g (d) 1.4 g

51. Which of the following is building free encyclopedias in most of the languages of the world?
(a) Encyclopedia Britannica
(b) Wikipedia
(c) Global Heritage
(d) World book of knowledge

52. Which of the following tower buildings in not located in U.A.E.?
(a) Millennium Tower
(b) Almas Tower
(c) Burj Dubai
(d) Aspire Tower

53. Who among the following women has not been a judge of the Supreme Court of India?
(a) Fatima Beevi
(b) Ruma Paul
(c) Sujata Manohar
(d) Lakshmi Srinath

54. The chiang Mai Initiative is a currecy pool of:
(a) Asean
(b) Japan and South Korea
(c) China
(d) All of the above

55. 'Nurek', the world's highest dam is located in:
(a) China (b) Tajikistan
(c) japan (d) Colombia

56. Which of the following is not an agency of the United Nations?
(a) International Court of justice
(b) Food and Agriculture Organization
(c) International Labour Oraganisation

(d) International Maritime Organisation

57. Which of the following is not an Indian missile?
(a) Agni (b) Dhanush
(c) Prithvi (d) Srishti

58. Volkswagon is a car company from
(a) Germany (b) Italy
(c) France (d) U.K.

59. Sebastian Vettel is a
(a) Cricketer
(b) Formula-1car racer
(c) Boxer
(d) Gymnast

60. How much of India's land is under actual forest cover?
(a) About 22% (b) About 30%
(c) About 40% (d) About 45%

61. The 'Zam Zam' water well is in:
(a) Madina (b) Makka
(c) Kerbala (d) Baghdad

62. Which was the earliest mosque built in India?
(a) Jama Masjid, Delhi
(b) Moti Masjid, Agra
(c) Quwatul Islam Mosque, Delhi
(d) Noor Jahan Mosque, Kashmir

63. The calendar system of Indian Muslims is known as:
(a) Sanwat (b) Hijri
(c) Shamsi (d) None

64. Muslims first settled down in India in the:
(a) 6^{th} century (b) 7^{th} century
(c) 8^{th} century (d) 9^{th} century

65. In his poetry Mohammad Iqbal put forward the theory of:
(a) Ishq-i-elahi
(b) Khudi
(c) Wahdat-ul-Wajood
(d) Fana Fillah

66. Mabdavi movement of India was founded by:
(a) Shah Abdul Aziz
(b) Shah Waliullah
(c) Syed Muhammad Jaunpuri
(d) Ahmad Raza Khan

67. The theory of "Wahdat-ul-Shuhud" was propounded by:
(a) Shah Waliullah Dehlawi
(b) Allama Iqbal
(c) Sheikh Ahmad Sirhindi
(d) Syed Shaheed Ahmad Barelavi

68. Babur's Tomb is situated in:
(a) Agra (b) Delhi
(c) Kabul (d) Panipat

69. "Yadgar-i-Ghalib" is an important work, written by:
(a) Altaf Hussain Hali
(b) Allama Iqbal
(c) Mir Taqi Mir
(d) Mirza Ghalib

70. Which of the following is correctly matched?
(a) Hauz Khas-Firoz Shah Tughlaq
(b) Siri Fort-Altamash
(c) Qutub Minar-Muhammad Tughlaq
(d) Tughlaqabad-Alaud-din-Khaliji

71. If the angles of a quadrilateral are in the ratio 3:5:9:13, then the angles of the quadrilateral are:
(a) $36^0, 60^0, 108^0, 156^0$
(b) $35^0, 60^0, 110^0, 155^0$
(c) $45^0, 50^0, 120^0, 145^0$
(d) None of these

72. Which of the following cannot be the probability of an event?
(a) 2/3 (b) 15%
(c) -1.5 (d) 0.7

73. Area of a sector of angle p (in degrees) of a circle with radius R is:
(a) $\frac{p}{360}.2\pi R$ (b) $\frac{p}{180}.\pi R^2$
(c) $\frac{p}{720}.2\pi R^2$ (d) None of these

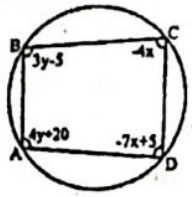
74. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g(x), the quotient and remainder were (x-2) and (-2x + 4)

respectively, then the polynomial g(x) is equal to

(a) $x^2 - x + 1$ (b) $x^2 + x + 1$

(c) $x^2 + x - 1$ (d) $x^2 - x - 1$

75. ABCD is a cyclic quadrilateral then angles A, B, C and D are:



(a) A= 120^0, B=70^0, C=60^0, D=110^0

(b) A= 70^0, B=120^0, C=110^0, D=60^0

(c) A= 60^0, B=70^0, C=120^0, D=110^0

(d) None of these

76. Water in a canal 6m wide and 1.5 m deep, is flowing with a speed of 10km/h. how much area will it irrigate in 30 minutes, if 8cm of standing water is needed?

(a) 5.625 hectares (b) 562.5 hectares

(c) 56.25 hectares (d) 5625 hectares

77. If the sum of first 7 terms of an AP is 49 and that of 17 terms is 289, find the sum of first n terms:

(a) n^3 (b) $2n$

(c) 238 (d) n^2

78. If than (A+B)=$\sqrt{3}$ and tan (A-B)=1/$\sqrt{3}$; 0^0<A+B≤90^0; A>B, find A and B:

(a) <A=75^0, <B=45^0

(b) <A=45^0, <B=15^0

(c) <A=45^0, <B=30^0

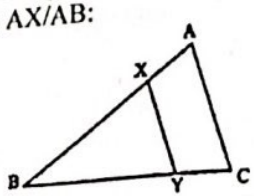
(d) <A=60^0, <B=30^0

79. Sides of two similar triangle are in the ratio 4:9 Areas of these triangles are in the ratio:

(a) 2:3 (b) 4:9

(c) 81:16 (d) 16:81

80. In the given figure, the line segment XY is parallel to side AC of ABC and it divides the triangle into two parts into two parts of equal areas. find the ratio AX/AB:



(a) $\frac{2+\sqrt{2}}{2}$ (b) $\frac{2-\sqrt{3}}{2}$

(c) $\frac{2+\sqrt{3}}{2}$ (d) $\frac{2-\sqrt{2}}{2}$

81. In an equilateral triangle ABC, D is a point on side BC such that BD=1/3, BC then AD^2 is equal to:

(a) 9/7 AB^2 (b) 7/9 AB^2

(c) 7 AB^2 (d) 9 AB^2

82. Find relation between x and y if the points (x,y), (1,2) and (7,0) are collinear:

(a) 3x + y + 7=0 (b) x -3y +7=0

(c) x – 3y -7 =0 (d) x +3y -7 =0

83. The coordinates of the points of trisection of the line segments joining (4,-1) and (-2,-3) are:

(a) $\left(-2,\frac{-5}{3}\right);\left(0,\frac{7}{3}\right)$

(b) $\left(2,\frac{-5}{3}\right);\left(0,\frac{-7}{3}\right)$

(c) $\left(2,\frac{-7}{3}\right);\left(1,\frac{5}{3}\right)$

(d) $\left(2,\frac{-5}{3}\right);\left(-1,\frac{7}{3}\right)$

84. Let A (4,2), B(6,5) an C (1,4) be the vertices of ABC. the median from A meets BC at D. the coordinate of the point D are:

(a) $\left(\frac{9}{2},\frac{3}{2}\right)$ (b) $\left(\frac{9}{2},\frac{7}{2}\right)$

(c) $\left(\frac{7}{2},\frac{9}{2}\right)$ (d) $\left(\frac{-7}{2},\frac{3}{2}\right)$

85. If the points A (6,1), B (8, 2), C (9, 4) and D (P,3) ar the vertices of a parallelogram taken in order, find the value of P:

(a) 6 (b) 5

(c) 3 (d) 7

86. The following observations have been arranged in ascending order. if the median of the data is 63 find the value of x:

29, 32, 48, 50, x, x+2, 72, 78, 84, 95

(a) 64 (b) 62

(c) 63 (d) 65

87. Two concentric circles are of radii 5cm and 3cm. find the length of the chord of the larger circle which touches the smaller circle:

(a) 8cm (b) 4 cm

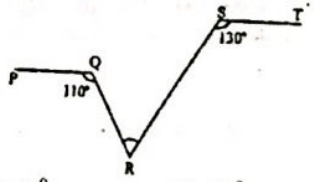
(c) 6 cm (d) 10 cm

88. From a point Q, the lenght of tangent of a circle is 24 cm and distance of Q from the centre is 25 cm. the radius of the circle is :

(a) 4 cm (b) 5 cm

(c) 6 cm (d) 7 cm

89. In the given figure if PQ||ST, <PQR=110^0, <RST=130^0, then <QRSis eqal to:



(a) 45^0 (b) 60^0

(c) 50^0 (d) 40^0

90. If $\tan\theta = \frac{1}{\sqrt{7}}$, the value of $\frac{\cos ec^2\theta - sec^2\theta}{\cos ec^2\theta + sec^2\theta}$ is:

(a) 3/5 (b) 3/7

(c) 3/4 (d) 3/8

91. The angle of elevation of the top of a tower from points at a distance of 4m and 9 m from the base of the tower and in the same straight line with it are complementary. The height of the tower is:

(a) 5 m (b) 6 m

(c) 7 m (d) 8 m

92. The perimeter of a right triangle is 60 cm. its hypotenuse is 25 cm, then area of the triangle is equal to:

(a) 300cm^2 (b) 250 cm^2

(c) 200 cm^2 (d) 150 cm^2

93. A train travels 360 km at a uniform speed. If the speed had been 5km/h more, it would have taken 1 hour less for the same journey. The speed of the train is:

(a) 35 km/hour (b) 30 km/hour

(c) 20 km/hour (d) 40 km/hour

94. Sonu went to a bank to withdraw Rs. 2000. He asked the cashier to give him Rs. 50 and Rs. 100 notes only. Sonu got 25 notes in all. The number of notes of Rs. 50 received by him are:

(a) 8 (b) 12

(c) 10 (d) 15

95. The sum of the 4^{th} and 8^{th} terms of an AP is 24 and sum of the 6^{th} and 10^{th} terms is 44. The first three terms of the AP are

(a) 13, 8, 3 (b) -13, -8, -3

(c) -12, -7, -2 (d) 12, 7, 2

96. If $\cos\theta - \sin\theta = \sqrt{2}\sin\theta$ then the value of $\cos\theta + \sin\theta$ is

(a) $\sqrt{2}\tan\theta$ (b) $\sqrt{2}\cos\theta$

(c) $\sqrt{2}\cot\theta$ (d) $\sqrt{2}\cos ec\theta$

97. A solid sphere of radius 3cm is melted and then cast into small

spherical balls each of diameter 0.6 cm. The number of balls thus obtained are:
(a) 100 (b) 500
(c) 1000 (d) None of these

98. The radius and slant height of a cone are in the ratio of 4:7. If its curved surface area is 792 cm^2, then its radius is equal to $\left(\text{use}\pi = \frac{22}{7}\right)$
(a) 11cm (b) 12 cm
(c) 13 cm (d) 14 cm

99. The roots of a quadratic equation $(k-12)x^2 + 2(k-12)x + 2=0$ are equal, then values of k are:
(a) k =12, k=12 (b) k=14, k=14
(c) k=12, k=14 (d) k=-12, k=-14

100. Three coins are tossed. Probability of getting one head is:
(a) 1/8 (b) 1/3
(c) 3/8 (d) ½

ANSWERS - 2010-2011

1. (a)	2. (a)	3. (c)	4. (d)	5. (a)	6. (b)	7. (d)	8. (d)	9. (d)	10. (d)
11. (b)	12. (c)	13. (d)	14. (d)	15. (c)	16. (b)	17. (b)	18. (c)	19. (d)	20. (b)
21. (c)	22. (d)	23. (c)	24. (a)	25. (c)	26. (b)	27. (c)	28. (d)	29. (c)	30. (b)
31. (d)	32. (d)	33. (a)	34. (d)	35. (c)	36. (c)	37. (c)	38. (b)	39. (a)	40. (a)
41. (d)	42. (b)	43. (b)	44. (a)	45. (c)	46. (c)	47. (d)	48. (a)	49. (c)	50. (b)
51. (b)	52. (d)	53. (d)	54. (d)	55. (b)	56. (a)	57. (d)	58. (a)	59. (b)	60. (a)
61. (b)	62. (c)	63. (b)	64. (b)	65. (b)	66. (c)	67. (c)	68. (c)	69. (a)	70. (a)
71. (a)	72. (c)	73. (c)	74. (a)	75. (a)	76. (c)	77. (d)	78. (b)	79. (d)	80. (d)
81. (b)	82. (d)	83. (b)	84. (c)	85. (d)	86. (b)	87. (a)	88. (d)	89. (b)	90. (c)
91. (b)	92. (d)	93. (d)	94. (c)	95. (b)	96. (b)	97. (c)	98. (b)	99. (b)	100.(c)

+2 AMU Sci./Dip. Engg. 2009-2010

Anaconda spends most of its time in a river, name it:
(a) Murray (b) Parana
(c) Amazon (d) Mississippi

Name of the Prime Minister of England who gave Independence to India:
(a) Neville Chamberlain
(b) Sir Anthony Eden
(c) Sir Clement Attle
(d) Sir Winston Churchill

Name of the mammal that lays eggs:
(a) Playtpus
(b) Whale
(c) Western grey Kangaroos
(d) Anteaters

4. Which country's flag has no prints but is only in one colour?
(a) Sudan (b) Libya
(c) Turkey (d) Egypt

5. Recently launched Nano by Tata Motors has been termed as:
(a) Drive your passion
(b) Sunshine car
(c) People's car
(d) Dream car

6. Pandit Jawaharlal Nehru has two sisters who were famous in the Indian Politics, they were:
(a) Vijay Lakshmi Sucheta
(b) Sucheta, Aruna
(c) Aruna, Krishna
(d) Krishna, Vijay Lakshmi

7. Name the first person who was awarded Bharat Rathna:
(a) C. V. Raman
(b) Rabindranath Tagore
(c) Sarojini Naidu
(d) Homi Jahangir Bhabha

8. The space shuttle Discovery which has recently returned to earth had number of crew:
(a) Three (b) Five
(c) Seven (d) Nine

9. Standard width of a cricket bat is:
(a) $4\frac{1}{4}"$ (b) $4\frac{1}{3}"$
(c) $5\frac{1}{4}"$ (d) $5\frac{3}{4}"$

10. Bees, wasps, ants and sawflies are:
(a) Beetle (b) Bugs
(c) Lepidopetrans (d) Hymenoterids

11. After the death of Emperor Jehangir one of his sons succeeded to the throne with the title of Shahjahan, name him:
(a) Shahryar (b) Khurram
(c) Asfandiyar (d) Hindal

12. What is the distance between parallel lines of broad Gauge?
(a) 1656 cm (b) 1666 cm
(c) 1676 cm (d) 1686 cm

13. The author of the book 'Mutaliya Sir Syed' is:
(a) Ale Ahmed Suroor
(b) Khalique Ahmed Nizami
(c) Abdul Haque
(d) Nurul Hasan Naqvi

14. English team played a cricket match at cricket ground of Aligarh against Aligarh College team in 1891. Four runs were needed for the win of Aligarh College team. One ball was left and last batsman was in, who hit a six, name him:
(a) Maulana Mohammad Ali Jauhar
(b) Maulana Shaukat Ali
(c) Mr. Raja Mahendra Pratap
(d) Mr. C.K. Naidu

15. The name of grandfather (paternal) of Sir Syed Ahmad Khan was:

(a) Syed Hadi
(b) Shah Ghulam Ali
(c) Syed Mir Muttaqui
(d) Mir Syed Mohammad

16. The person who laid the foundation stone of Mohammedan Anglo Oriental College at Aligarh was:
(a) Lord Lytton
(b) Lord Lawrence
(c) Sir Williams Muir
(d) Sir Syed Ahmad Khan

17. Sir Syed Ahmad Khan in 1860 published a magazine "Loyal Mohammad's of India" in English and "Risala Khair-e-Khahan of Muslims" in Urdu. Name the town from which these were published:
(a) Muradabad (b) Fatehpur Sikri
(c) Bijnaur (d) Aligarh

18. The longitude on which Aligarh Muslim University, Aligarh is situated:
(a) $79^0 10'$ (b) $79^0 40'$
(c) $80^0 10'$ (d) $80^0 40'$

19. Name of the mother of Hazarat Ibrahim, the son of Prophet Mohammad (P.B.U.H):
(a) Hazrat Maimun
(b) Hazrat Maira Qubutiya
(c) Hazarat Umm Habiba
(d) Hazrat Jawaria

20. The Prophet Mohammad (P.B.U.H) stayed in the house of a sahabi for seven months after migration from Mecca to Yathrib (Medina), name him:
(a) Utban Ibn Malik Ansari
(b) Kharijah Ibn Zaid Ansari
(c) Abu Ibn Ayub Ansari
(d) Abu Ibn Ibadah Ansari

21. A dealer sells an article for Rs. 75.0 and gain; as much per cent as the cost price of the article. Find th cot price of the article;
(a) Rs. 40 (b) Rs. 45
(c) Rs. 50 (d) Rs. 55

22. A bag contains Rs. 102.00 in the form of rupee, fifty paise and ten coins in the ratio 3:4:10. Find the number of 10 paise coins:
(a) 17 (b) 60
(c) 120 (d) 170

23. Average temperature of Monday, Tuesday and Wednesday was 40^0C and the average temperature for Tuesday, Wednesday and Thursday was 41^0C. If the temperature for Thursday be 42^0C, then what was the temperature on Monday?
(a) 38^0C (b) 39^0C
(c) 40^0C (d) 41^0C

24. Some students planned for a picnic. Budget for food was Rs. 480.00. But eight of them filed to attend and the cost of food there by increased by Rs. 10,00 per head. How many actually attended the picnic?
(a) 12 (b) 14
(c) 16 (d) 8

25. Find the fraction which bears the same ratio to $\frac{1}{27}$ that $\frac{3}{7}$ has with $\frac{5}{9}$:
(a) $\frac{1}{35}$ (b) $\frac{1}{42}$
(c) $\frac{1}{49}$ (d) $\frac{1}{52}$

26. Find the number of straight lines joining six non-collinear points:
(a) 10 (b) 15
(c) 20 (d) 25

27. 2 men and 3 women perform a work in 8 days, 6 women and 8 children perform the same work in 4 days and 1 man and 2 children perform the same work in 16 days. Find the number of days 2 men, 3 women and 8 children shall take to perform the same work:
(a) 2 (b) 3
(c) 4 (d) 6

28. A man starts from a given point. Each time he takes three steps forward, he must take two steps back, how many steps must he take in order to reach a point six steps ahead of the starting point.
(a) 23 (b) 25
(c) 17 (d) 18

29. For what value of p, the expression $2x^2 + 2x+p$ be factorized into real linear factors:
(a) $p > \frac{1}{2}$ (b) $p \geq \frac{1}{2}$
(c) $p \leq \frac{1}{2}$ (d) $p < \frac{1}{2}$

30. The set of values of x satisfying $x+2=\sqrt{2x+7}$:
(a) {-3} (b) {1}
(c) {-3,1} (d) {2}

31. Solve $2^{2x} - 3.2^{x+2} + 32=0$:
(a) {2,3} (b) {1,3}
(c) {1,2} (d) {3,4}

32. If $a^3 + b^3 + 15\,ab=125$ find a+b:
(a) 3 (b) 5
(c) 7 (d) 9

33. The quadratic equation $\frac{1}{x}+\frac{1}{x+b}=\frac{1}{m}+\frac{2}{m+b}$ has roots m and –m then:
(a) $b^2=m^2$ (b) $b^2=2m^2$
(c) $2b^2=m^2$ (d) $2b^2=m$

34. $\tan\alpha, \tan\beta = a$ and $\alpha+\beta=\frac{\pi}{6}$ then $\tan\alpha$ and $\tan\beta$ are roots of the quadratic equation:
(a) $\sqrt{3x^2} - (1-a)x + \sqrt{3a} = 0$
(b) $\sqrt{3x^2} - (1+a)x + \sqrt{3a} = 0$
(c) $\sqrt{3x^2} - (1-a)x - \sqrt{3a} = 0$
(d) $\sqrt{3x^2} + (1-a)x + \sqrt{3a} = 0$

35. $\cos1^0.\cos2^0.\cos3^0.....\cos178^0.\cos179^0.=x+1$then x is equal to:
(a) 1 (b) 0
(c) -1 (d) 2

36. Which of the following is not correct?
(a) $\sin>\sin1^0$ (b) cos2<cos1
(c) sin2> sin1 (d) tan1<tan2

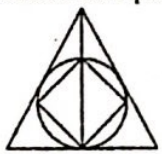
37. Evaluate
$\frac{1}{\sqrt{2}}\cos ec(-675^0)+\sqrt{2}\sec(765^0)$
$-\cot(1215^0)$
(a) 0 (b) 4
(c) -4 (d) -2

38. If θ and ϕ be acute angles and $\sin\theta=\frac{1}{2}$ and $\cos\phi=\frac{1}{3}$ then
(a) $\frac{\pi}{6}<\theta+\phi<\frac{\pi}{3}$ (b) $\frac{\pi}{3}<\theta+\phi<\frac{\pi}{2}$
(c) $\frac{\pi}{2}<\theta+\phi<\frac{2\pi}{3}$ (d) $\frac{2\pi}{3}<\theta+\phi<\frac{5\pi}{6}$

39. The angles of elevation of a tower from two places in the line with the foot of tower are found to be 60^0 and 30^0. if the places be 100 meters apart. find the height of the tower.
(a) $\frac{50\sqrt{3}}{3}$ (b) 50
(c) $50\sqrt{3}$ (d) $50\sqrt{6}$

40. If A lies in the 2nd quadrant and 3 tan A+4=0 the value of 2cotA-5 cosA + sin A is:
(a) $-\frac{53}{10}$ (b) $\frac{23}{10}$
(c) $\frac{37}{10}$ (d) $\frac{7}{10}$

41. A circle is inscribed in an equilateral triangle whose side is 6 units. a square has its vertices on the circumference of the inscribed circle. Find the area of the square:



(a) 6 (b) 8
(c) 12 (d) 16

42. Two cones have their heights in the ratio 1:3 and radii of their bases in th ratio 3:1. Ratio of their volume:

(a) $\frac{1}{3}$ (b) $\frac{3}{1}$
(c) $\frac{1}{9}$ (d) $\frac{9}{1}$

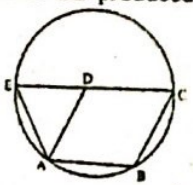
43. Vertices of a triangle are (6,4), (0,3) and (0,8). Find the area of the triangle:

(a) 12 (b) 15
(c) 18 (d) 21

44. ABC is a right angled triangle where $<B=90^0$. And a circle is inscribed in it which has a radius of 6 units then AB+BC-AC is:

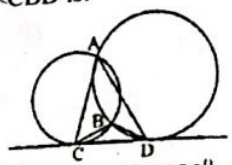
(a) 6 (b) 8
(c) 10 (d) 12

45. ABCD is a parallelogram. A circle passes through points A, B and C and cuts the side CD produced in E then:



(a) AE> AD (b) AE=AD
(c) AE<AD (d) AE=AD

46. Two circle interest in A and B. CD is a direct common tangent touching the circles at C and D if $<CAD = 50$ then <CBD is:



(a) 110^0 (b) 120^0
(c) 130^0 (d) 150^0

47. Angle B of ΔABC is acute. AD i perpendicular to BC. Find BD i AB=5, BC=7, AC=3√2:

(a) $2\sqrt{2}$ (b) 3
(c) 4 (d) 5

48. Find the mode of 2,0,5,4,2:

(a) {2} (b) {4}
(c) {2,4} (d) {2,4,5}

49. The number of students of a class in school is 40, 35, 45, and 42. Th mean marks obtained in a subject an respect are respectively 50, 60, 55 45. Determine average marks o students:

(a) 52.2 (b) 52.4
(c) 52.6 (d) 52.8

50. From a pack of playing card numbering 52 a card is drawn Probability that it is a king:

(a) $\frac{1}{4}$ (b) $\frac{1}{13}$
(c) $\frac{1}{26}$ (d) $\frac{1}{52}$

51. If $\vec{a}=2\hat{i}-3\hat{j}, \vec{b}=4\hat{i}-8\hat{j}$ value of $\vec{ab}$:

(a) 4 (b) -4
(c) 32 (d) -32

52. Visible region of the electromagnetic spectrum lies in:

(a) $10^{-11}-10^{-12}$m
(b) $10^{-6}-10^{-7}$m
(c) $10^{-9}-10^{-10}$m
(d) $10^{-3}-10^{-4}$m

53. An object is placed in front of a concave mirror of radius of curvature 40 cm at a distance of 10 cm, the position of the image could be at a distance of:

(a) -20 cm (b) -10 cm
(c) 10cm (d) 20cm

54. How many electrons would pass through a given cross section in 1 second to constitute a current of 1 Amp?

(a) 1.6×10^{-19} (b) 6×10^{-18}
(c) 1.6×10^{19} (d) 6×10^{18}

55. Freezing point of water is :

(a) 0^0 F (b) 0^0C
(c) 20^0 C (d) -212^0 F

56. Which one of the following is true?

(a) Speed of sound is less in Helium than in air at 20^0 C.
(b) Speed of sound is less in sea water than in water at 0^0C
(c) Speed of sound is less in Hydrogen than in air at 0^0C
(d) Speed of sound is less in sea water than in steel

57. Which of the following is true?

(a) Sound and light need medium to travel
(b) Only sound needs a medium travel
(c) Only light needs a medium to travel
(d) Neither sound nor light need a medium to travel

58. Sometimes we find dogs chasing motorcycles and we usually do not account for it. The reason for this is:

(a) Dogs are attracted by the colour of the motorcycle
(b) Dogs are attracted by the light that falls onto them
(c)They listen to the sounds which donot
(d) they have a tendency to chase anything that goes by them

59. If one unit of electricity cost Rs. 5, how one would have to pay for using 1000 W bulb continuously for 30 days:

(a) Rs. 150 (b) Rs. 3600
(c) Rs. 5000 (d) Rs. 1,50,000

60. Two charges of the same magnitudes are separated by distance of 100 cm and the force acting between them is 10^{-2}N, the charge on each one of them is:

(a) 10-6μC (b) 10^{-6}mC
(c) 10^{-3}C (d) 10^{-6}C

61. Drift speed of the conduction electrons in household wiring is typically:

(a) 4×10^{-5} m/sec (b) 100 m/sec
(c) 330 m/sec (d) 3×10^8 m/sec

62. Big-Bang theory explains:

(a) Evolution of the universe
(b) Nuclear fusion reaction inside a star
(c) Magnetic property of earth
(d) Death of stars

63. In the following reaction, what is the missing particle:

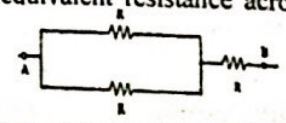
$${}^1_0n+{}^{235}_{92}U\rightarrow{}^{141}_{56}Ba+{}^{92}_{36}Kr+3{}^1_0n+?$$

(a) γ (b) ${}^1_0n$
(c) ${}^1_1p$ (d) e^-

64. What is approximately the mass of proton?

(a) 1 amu
(b) 938 amu
(c) 9.1×10^{-31} amu
(d) 1.6×10^{-27} amu

65. The equivalent resistance across AB is:



(a) $\frac{2R}{3}$

(b) R

(c) $\frac{3R}{2}$

(d) 2R

66. Mohan Could see clearly up to a distance of 2 mts, however, he wanted to see clearly up to 10 mts, what type of lens you would advise him?
(a) Concave lens of power 0.4 dioptre
(b) Convex lens of power 0.4 dioptre
(c) Cncave lens of power 0.6 dioptre
(d) Convex lens of power 0.6 dioptre

67. A box of mass 400 kg rests on a carrier of truck that is moving at a speed of 120 km/hr. the driver applies brake and slows to a speed of 60 km/hr in 20 sec. the constant acceleration generation upon the box in m/s^2.
(a) -0.0025 (b) 0.8
(c) 0.0025 (d) -0.8

68. A 20 kg box is pulled up on a slope with a constant speed to a distance of 4 mts raising it to a height of 2 mts above its starting point, the force $\vec{F}$ that exerted on the box is:
(a) 50N (b) 100N
(c) 150N (d) 200N

69. Magentic field in a long straight solenoid is:
(a) Zero
(b) Decrease as we move towards the ends
(c) Increase as we move towards the ends
(d) It is constant at every point

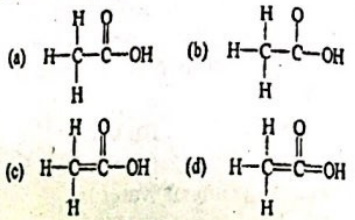
70. Which of the following is not a property of Amorphous solids?
(a) Isotropic in nature
(b) Irregular shape
(c) Super cooled liquids
(d) Long range order

71. In the reaction $Fe+Ni_2O_3$ one gets:
(a) FeO_2 (b) Fe_2O_3
(c) FeO (d) Fe_3O_4

72. In a redox reaction $Cu+2AgNO_3$ gives rise to:
(a) NO_2 (b) Ag
(c) N_2O (d) AgO_2

73. A solution turns red litmus paper into blue. Its pH is:
(a) 5 (b) 7
(c) 10 (d) 12

74. What is the structural formula of acetic acid?



75. Which of the following is correct chemical equation?
(a) $2NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$
(b) $BaCL_2 + H_2SO_4 \rightarrow BaSO_4 + HCl$
(C) $HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + H_2O$
(d) $BaCl_2 + K_2SO_4 \rightarrow BaSO_4 + KCl$

76. Laughing gas is:
(a) N_2O (b) SO_2
(c) NH_3 (d) PH_3

77. Blue colour of water in sea is due to:
(a) refraction of blue light by impurities in sea water
(b) scattering of light by water
(c) reflection of blue sky in water
(d) it is an illusion

78. Silver items when exposed to air becomes blackish, name the black compound:
(a) silver nitrate (b) silver sulphide
(c) silver nitrate (d) silver dioxide

79. $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$
The above is an example of reaction:
(a) Combination reaction
(b) Displacement reaction
(c) Double displacement reaction
(d) Decomposition reaction

80. What is the chemical formula of ammonium carbonate?
(a) NH_4CO_3 (b) $(NH_4)_2CO_3$
(c) $NH_4(CO_3)_2$ (d) $(NH_4)_2(CO_3)_2$

81. Molar mass of $C_2H_6O_2$ is:
(a) 15 (b) 28
(c) 34 (d) 62

82. Blood may be purified by:
(a) dialysis (b) electro-osmosis
(c) coagulation (d) filtration

83. A solution mixed albumen of egg produces a gas which turns water into milky white, name the solution
(a) NaCl (b) KCl
(c) HCl (d) LiCl

84. Which gas is emitted when tartaric acid is heated with sodium bicarbonate?
(a) Cl_2 (b) O_2
(c) CO_2 (d) H_2

85. Richest source of iron among the following is:
(a) Banana (b) Mango
(c) Dates (d) Grapes

86. Milk and egg makes a complete food which is one nutrient which milk lacks and egg completes it?
(a) Protein (b) Iron
(c) Calcium (d) Carbonhydrate

87. Poliomyelitis is a disease of:
(a) Nervous system (b) Liver
(c) Kidney (d) Instestine

88. Robert Kock won the Nobel prize for the discovery of:
(a) Cholera (b) Malaria
(c) Tuberculosis (d) Typhoid

89. Which of the epithelium forms the lining of the small intestine?
(a) Cuboidal epithelium
(b) Squamous epithelium
(c) Ciliated epithelium
(d) Columnar epithelium

90. A white fibrous protein found in some connective tissue is called:
(a) Collagen (b) Plasma
(c) Ligament (d) Matrix

91. The function of parathorme hormone is:
(a)In the development of the immune system
(b)To regulate calcium and phosphate level
(c)To control the growth of human body
(d)To control the rate of metabolism of carbohydrate, protein and fat

92. Which region of the brain controls the reflex movement of the eye muscle?
(a) Midbrain (b) Cerebrum
(c) Cerebellum (d) Medulla

93. Common name of Ancylostoma is:
(a) Roundworm (b) Filarial worm
(c) Hookworm (d) Pinworm

94. Equisetum belongs to which group to plant kingdom:
(a) Pteridophyta (b) Gymnosperms
(c) Bryophyta (d) Thallophyta

95. Which division of the kingdom Plantae are with out specialization vascular tissue?
(a) Brypophyta (b) Thallophyta
(c) Pteridophyta (d) Spermatophta

96. Which among these tissue provides tensile strength elastic and mechanical strength to the plant?
(a) Chlorenchyma (b) Sclerenchyma
(c) Parenchyma (d) Collenchyma

97. The function of Ribosomes is:
(a)Synthesis of protein
(b)To destroy any foreign material that enter the cell
(c)To maintain osmotic pressure in a cell
(d)It forms supporting skeletal frame-work of the cell

98. E.coli and salmonella are examples of:

(a) Cynobacteria
(b) Enterobacteria
(c) Glidding and budding bacteria
(d) Actinomyces

99. Ligaments are elastic structures which connect:
(a) Bones to bones
(b) Muscles to bone
(c) Nerve to muscle
(d) Muscle to muscle

100. Monocot stems, roots and leave do not have have:
(a) Collenchyma (b) Sclerenchyma
(c) Parenchyma (d) Chlorenchyma

ANSWERS - 2009-2010

1. (c)	2. (c)	3. (a)	4. (b)	5. (c)	6. (d)	7. (a)	8. (c)	9. (a)	10. (d)
11. (b)	12. (b)	13. (c)	14. (b)	15. (a)	16. (a)	17. (a)	18. (a)	19. (b)	20. (c)
21. (c)	22. (b)	23. (b)	24. (c)	25. (a)	26. (b)	27. (c)	28. (d)	29. (c)	30. (c)
31. (a)	32. (b)	33. (b)	34. (a)	35. (c)	36. (a)	37. (b)	38. (c)	39. (c)	40. (b)
41. (a)	42. (b)	43. (b)	44. (d)	45. (b)	46. (c)	47. (c)	48. (c)	49. (a)	50. (b)
51. (c)	52. (b)	53. (d)	54. (d)	55. (b)	56. (d)	57. (b)	58. (c)	59. (b)	60. (d)
61. (a)	62. (a)	63. (a)	64. (d)	65. (c)	66. (a)	67. (d)	68. (b)	69. (d)	70. (a)
71. (b)	72. (b)	73. None	74. (a)	75. (a)	76. (a)	77. (a)	78. (b)	79. (b)	80. (b)
81. (d)	82. (a)	83. (c)	84. (c)	85. (c)	86. (b)	87. (a)	88. (c)	89. (d)	90. (a)
91. (b)	92. (b)	93. (c)	94. (a)	95. (a)	96. (d)	97. (a)	98. (b)	99. (a)	100. (a)

+2 AMU Sci./Dip. Engg. 2008-2009

1. The author of "Wings of Fire" is:
(a) Pandit Jawaharlal Nehru
(b) A.P.J. Abdul Kalam
(c) H.J. Bhabha
(d) H.J. Bhabha

2. In the famous trio of Lal, Bal and Pal, Bal stands for:
(a) S.P. Balasubhrimanyam
(b) Laxmipati Balaji
(c) Bal Gangadhar Tilak
(d) K.G. Balakrishnan

3. The director of various films like Hyderabad Blues, Iqbal, Dor etc. is:
(a) Karan Johar (b) Subhash Ghai
(c) Adiya Chopra (d) Nagesh Chopra

4. The width of a cricket ground is around:
(a) 150m (b) 350m
(c) 550m (d) 750m

5. Milan, a famous fashion city is in:
(a) Italy (b) Germany
(c) France (d) England

6. Kimi Raikkonen is associated with:
(a) Rowing
(b) Horse Race
(c) Rugby
(d) Formula one car race

7. "Aryabhatta" the first Indian satellite was launched from:
(a) U.S.A (b) India
(c) U.S.S.R (d) U.K

8. Dr. Salim All was a:
(a) Neurologist (b) Psychiatrist
(c) Ornithologist (d) Chemist

9. Which scientist is credited with concept of "Nanotechnology"?
(a) Richard Feynman
(b) Erawin Schrodinger
(c) Wigner Heisenberg
(d) James Clak Maxwell

10. Which one is not a part of "Great Britain"?
(a) England (b) Scotland
(c) Wales (d) North Ireland

11. Who signs on a one-rupee note?
(a) Revenue Secretary
(b) Secretary, Ministry of Finance
(c) Finance Minister
(d) Governor, R.B.I.

12. Which expedition was the first to sail around the Earth and conclusively proved that the Earth is round?
(a) Sir Francis Drake's
(b) Vasco de Gama's
(c) Christopher Columbus's
(d) Magellan's Victoria

13. Which city is known as sports good's capital of India?
(a) Amristsar (b) Delhi
(c) Jalandhar (d) Mumbai

14. Maulana Abul Kalam Azad edited the newspaper:
(a) Comrade (b) Al-Hilal
(c) Harijan (d) Zamindar

15. Sir Syed Ahmad Khan was "Knighted" in the year:
(a) 1877 (b) 1879
(c) 1881 (d) 1882

16. Motilal Nehru purchased the building, now known as Anand Bhawan in Allahabad from:
(a) Pt. Govind-Bhallabh Pant
(b) Sampurnanand
(c) Sir Syed Ahmad Khan
(d) Rafi Ahmad Kidwai

17. Which is India's most widely exported cereal?
(a) Wheat (b) Rice
(c) Pulse (d) Maize

18. Al-Quran was revealed to the Prophet Mohammad SAW, in nearly:

(a) 19 yrs (b) 21 yrs
(c) 23 yrs (d) 25 yrs

19. Prior to Hijrat (migration) of the Prophet Mohammad SAW, what was the name of Madina?
(a) Butha (b) Saqiya
(c) Yathrib (d) Wabrah

20. The famous paintings like " The Last Supper" and "Mona Lisa" are by:
(a) Paul Cezanne
(b) Leonardo da Vinci
(c) Albrecht Durer
(d) El Greco

21. If the distance between the two charged particles of equal magnitudes be reduced by half while the charges on term are doubled, what change of force would occur?
(a) Increases by 16 times
(b) Decreases by 16 times
(c) Remains unchanged
(d) Decreases by 4 times

22. Name the experiment which established the quantum number of electric charge:
(a) Rutherford's a-particles scattering experiment
(b) Coulomb's experiment
(c) Thomson's experiment
(d) Millikan's oil drop experiment

23. If earth be assumed to be a spherical conductor of radius 6400 km, its capacitance would be approximately:
(a) 300μF (b) 500μF
(c) 700 μF (d) 900 μF

24. Which of the following is correct in order of increasing resistivity?
(a) Copper< Nichrome < Germanium< Wood
(b) Nichrome <Copper <Wood <Germanium
(c) Germanium <Copper <Wood <Nichrome
(d) Copper <Germanium <Wood <Nichrome

25. Three resistors of 10Ω, 20Ω and 30Ω area arranged in parallel and the combination is connected to a battery of emf 100V, the current across 10Ω resistance would be approximately:
(a) 5.5 A (b) 10A
(c) 2 A (d) 0.02 A

26. A long straight wire carries a current of 50 A. the magnitude of the magnetic field B at a distance of 1 m from the wire would be:
(a) 10^{-3}T (b) 10^{-5}T
(c) 10T (d) 1T

27. Earth's magnetic field has a horizontal component except at:
(a) Magnetic pole
(b) Equator
(c) A latitude of 60^0
(d) An altitude of 60^0

28. The frequency of red colour to which our eyes are sensitive is around:
(a) 4×10^{11} Hz (b) 4×10^{12} Hz
(c) 4×10^{13} Hz (d) 4×10^{14} Hz

29. An object placed in front of a concave mirror of focal length 20 cm produces a virtual image which is twice the size of the object, find where it is placed?
(a) 10cm (b) 20cm
(c) -10cm (d) -20cm

30. For a convex lens, if an object is placed beyond $2f$, the position of the image would be:
(a) At focus f (b) Between f and $2f$
(c) Ornithologist (d) Chemist

31. A 100Ω resistor is connected to a 220V, 50 Hz A.C. supply, the peak potential difference is:
(a) 311 V (b) 220 V
(c) 440 V (d) 157 V

32. The position vector for a particle is initially $\vec{r}_1 = \hat{5}j + \hat{6}j + \hat{7}k$ and then later is the displacement from $\vec{r}_1$ and $\vec{r}_2$
(a) $15\hat{i}+5\hat{j}+5\hat{k}$ (b) $5\hat{i}+17\hat{j}+19\hat{k}$
(c) $15\hat{i}+5\hat{j}+5\hat{k}$ (d) $0\hat{i}+0\hat{j}+0\hat{k}$

33. A room has floor dimensions of 5m and 4m and height of 5m. If the density of air be 1.2 kg/m^3 weight of air the room would be: (g=10m/s^2)
(a) 120kg (b) 120N
(c) 1200kg (d) 1200N

34. The mass of 1 atom of Carbon is:
(a) $\frac{12}{6.023\times10^{23}}$kg
(b) $12\times6.023\times10^{23}$kg
(c) $\frac{12}{6.023\times10^{26}}$kg
(d) $12\times6.023\times10^{26}$kg

35. What is the name of India' s first moon mission?
(a) Chandrayan-1 (b) Chandra-1
(c) Chandrama -1 (d) Chandamarna -1

36. Finding your friend you applied the brakes on car which resulted a change of speed from 100km/h to 20km/h, over a distance of 1m, how much is the acceleration?
(a) -4.8×10^6 km/h^2
(b) 4.8×10^6 km/h^2
(c) -9.6×10^6 km/h^2
(d) -9.6×10^6 km/h^2

37. An umpire tosses up a coin with a speed of 10m/sec. if his hand is 1m above the ground, how much total distance the coin will travel before hitting the ground? (g=10 m/s^2)
(a) 5 m (b) 6m
(c) 10 m (d) 11m

38. Friction force is the manifestation of:
(a) Electromagnetic interaction
(b) Weak interaction
(c) Strong interaction
(d) Gravitational interaction

39. The masses of the earth and the moon, which are approximately separated by a distance of 3.8×10^8m are 6×10^{24} kg and 7.4×10^{22} kg respectively. The gravitational potential energy of the Moon-Earth system is : (G=6.67×10^{-11} in S.I. units)
(a) 7.7×10^{32} J (b) -7.7×10^{32} J
(c) 7.7×10^{28} J (d) -7.7×10^{28} J

40. The rate of evaporation increases with:
(a) A decrease in wind speed
(b) An increase in humidity
(c) A decrease of temperature
(d) An increase of surface area

41. A solution contains 50g of common salt in 450 g of water. The concentration in terms of mass percentage of the solution is:
(a) 10% (b) 1000%
(c) 0.1% (d) 0%

42. The size of a proton is approximately:
(a) 10^{-10}m (b) 10^{-12} m
(c) 10^{-14} m (d) 10^{-15} m

43. The formula unit mass of $CaCl_2$ is:
(a) 75.5u (b) 111 u
(c) 125u (d) 145 u

44. Number of electrons in the M-shell of Potassium:
(a) 1 (b) 2
(c) 8 (d) 9

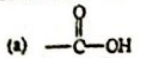
45. Boiling point of $MgCl_2$ is around :
(a) 1000 K (b) 1300 K
(c) 1500 K (d) 1700 K

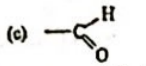
46. While the extraction of metals from ores, the process of calcinations is involved in:
(a) All kinds of metals
(b) Metals of high reactivity
(c) Metals of medium reactivity
(d) Metals of low reactivity

47. When Manganese dioxide is heated with Aluminium powder, which one of the following reaction takes place:
(a) $3MnO_2 + 4Al \rightarrow 3Mn + Al_2O_3$ + heat

(b) $3MnO_2 + 4Al \rightarrow 3Mn + Al_2O_3$
(c) $3MnO_2 + 4Al \rightarrow 3Mn + 4Al + 3O_2$
(d) $3MnO_2 + 4Al \rightarrow 3Mn + 4Al + 3O_2$ + heat

48. The formula of function group in Ketone is:

(a)  (b) 

(c)  (d) —OH

49. Esters react in the presence of an acid or a base to give back the alcohol and
(a) Hydrochloric acid
(b) Nitric acid
(c) Ethanoic acid
(d) Carboxylic acid

50. The atomic number of Iodine is:
(a) 51 (b) 52
(c) 53 (d) 54

51. Which one of the following reacting with a metal does not produce hydrogen gas?
(a) HCl (b) H_2SO_4
(c) HNO_3 (d) CH_3COOH

52. Organic compounds are mostly:
(a) Electrovalent
(b) Co-valent
(c) Tetravalent
(d) Metallic compounds

53. Methane is:
(a) Acyclic (b) Alicyclic
(c) Caboxylic (d) All of these

54. Vital force theory was given by:
(a) Wohler (b) Berzelius
(c) Boyle (d) Charles

55. Which of the following has the richest souce of Vitamin C?
(a) Lemon (b) Orange
(c) Amla (d) Grapes

56. Typhoid is caused by:
(a) Virus
(b) Bacteria
(c) Fungi
(d) Protozoan Microbes

57. The fertilized egg from the female ovary first goes to:
(a) Uterus (b) Colon
(c) Fallopian (d) Urethra

58. The branch of Botany that deals with the study to the structure, function and life history of plant cells is known as:
(a) Genetics (b) Physiology
(c) Taxonomy (d) Cytology

59. The place where the kidneys are located is:
(a) Upper posterior abdominal cavity
(b) In the chest cavity
(c) Below the small intestine
(d) Below the heart

60. The plants that live on other plants but do not receive nutrition from them are known as:
(a) Xerophytes (b) Hydrophytes
(c) Parasites (d) Epiphytes

61. Plants which do have well differentiated body design belongs to:
(a) Bryophyta (b) Angiosperms
(c) Thallophyta (d) Pteridophyta

62. The tissue that makes plant hard and stiff is:
(a) Collenchyma (b) Sclerenchyma
(c) Parenchyma (d) Phloem

63. The hormone in the plant which inhibits growth is:
(a) Cytokinins (b) Abscisic acid
(c) Auxins (d) Gibberellins

64. Which is a stem among these:
(a) Carrot (b) Raddish
(c) Potao (d) Onion

65. Of the total iron present in our body, what percent of it is found in haemoglobin?
(a) 25% (b) 45%
(c) 65% (d) 85%

66. Which was the first organ to be transplanted successfully in humans?
(a) Kidney (b) Heart
(c) Lung (d) Liver

67. Which of these belongs to the phylum Nematoda?
(a) Eathworm (b) Leeches
(c) Ascaris (d) Pila

68. Group of animals which have pores all over their body:
(a) Coelenterata (b) Porifera
(c) Nematoda (d) Mollusca

69. Tissues that form inner lining of the mouth:
(a) Squmous Epithelium
(b) Columnar Epithelium
(c) Cuboidal Epithelium
(d) Glandular Epithelium

70. The breakdown of pyruvate to give carbon dioxide, water and energy takes place in:
(a) Cytoplasm (b) Chloroplast
(c) Mitochondria (d) Nucleus

71. What is the 9^{th} term of the series:
0+1+1+2+3+5+8+13+.....
(a) 15 (b) 17
(c) 19 (d) 21

72. If the length of rectangular field be increased by 50% and the breadth be decreased by 25%, find the % change in area:
(a) 10 ½ % (b) 12 ½ %
(c) 15 ½ % (d) 17 ½%

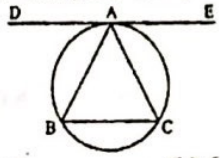
73. Which of the following is an irrational expression?
(a) $\frac{\sqrt{3x}-4}{x^2+1}$ (b) $\frac{x^2-\sqrt{2}}{\sqrt{2x^2}-1}$
(c) $\frac{x+1}{\sqrt{x}-4}$ (d) $\frac{x^2-\sqrt{2}}{x-5}$

74. If bc+ca+ab=0, find the value of
$\frac{bc}{a^2}+\frac{ca}{b^2}+\frac{ab}{c^2}$:
(a) -2 (b) 2
(c) 3 (d) -3

75. Find the sum of real roots of the equations: $x^2+|x|-6=0$:
(a) 0 (b) -1
(c) -4 (d) 1

76. Quadric equation $x^2 + bx + c = 0$ has a root $3-2\sqrt{3}$, find the value of c:
(a) 3 (b) $3\sqrt{3}$
(c) $-3\sqrt{3}$ (d) -3

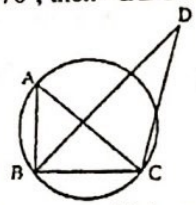
77. In the figure given, BC||DE, AB=6cm, BC=5cm, find AC:



(a) 5 (b) 6
(c) 7 (d) 8

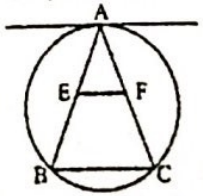
78. If sum of n terms of series be $3n^2 + 5n$, find its 10th term
(a) 60 (b) 62
(c) 64 (d) 66

79. In the figure given $\angle ACB=50^0$, $\angle ABC=70^0$, then $\angle BDC$ is:



(a) 600 (b) Less than 60^0
(c) More than 60^0 (d) Both (b) and (c)

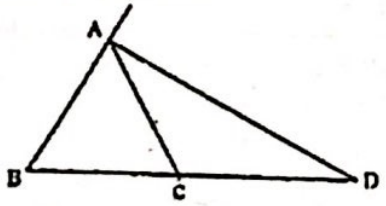
80. In the figure given EF is parallel to the tangent at A, a point of the $\angle ACB= 55^0$, the measure of $\angle AFE$ is:



(a) 57^0 (b) 59^0
(c) 61^0 (d) 63^0

81. If the diagonals of a rhombus be 8cm and 6cm, its area is:
(a) 6sqcm (b) 12sqcm
(c) 24sqcm (d) 48 sq cm

82. Bisector of the exterior angle A of the ΔABC meets BC produced towards C in D, if AB=6 cm. AC=5 cm and BD= 9cm, find CD:



(a) $\frac{13}{2}$cm (b) $\frac{15}{2}$cm
(c) $\frac{17}{2}$cm (d) $\frac{19}{2}$cm

83. $90^0 < \theta < 180^0$ and $\cos 2\theta = \sin 4\theta$ the value of $\tan\theta$ is:
(a) 0 (b) $-1/\sqrt{3}$
(c) -1 (d) $\sqrt{3}$

84. If $\cos\theta = \frac{\sqrt{3}}{4}$ and $270^0 < \theta < 360^0$ then $\cot\theta$ is:
(a) $\frac{\sqrt{3}}{4}$ (b) $\frac{-3}{\sqrt{13}}$
(c) $\sqrt{\frac{3}{13}}$ (d) $-\sqrt{\frac{3}{13}}$

85. If $\tan\theta + \sin\theta = m$, $\tan\theta - \sin\theta = n$ then $m^2 - n^2$
(a) $4\sqrt{mn}$ (b) $2\sqrt{mn}$
(c) $2\sqrt{mn}$ (d) $\sqrt{mn}$

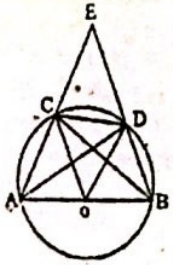
86. If the centroid of a triangle be (0,0) and its two vertices are (4,5) and (-4,7) then the area of Δ is:
(a) 70 (b) 72
(c) 74 (d) 76

87. A tain runs between two stations. A and B. When it runs from A and B its average speed is 100km/h while from B to A the average speed is 150km/h, then the average speed for the entire journey is:
(a) 120 km/h (b) 125 km/h
(c) 130 km/h (d) 135 km/h

88. An insect crawls on a pillar of height 35m. it ascends 5m in the first minute but slips down 3 m in the next minute. If it continues crawling in this way what time it will take to reach at the top of the pillar?
(a) 35 minutes (b) 33 minutes
(c) 31 minutes (d) 29 minutes

89. A batsman in his 12^{th} inning makes a score of 63 and thereby increases his average by 2, what is his average after 12 innings?
(a) 39 (b) 41
(c) 43 (d) 45

90. In the given figure the length of the chord CD is equal to the radius of circle then measure of <AEB is:
(a) 30^0 (b) 45^0
(c) 60^0 (d) 75^0



91. If the mean of the following data be 5 find *p*:

X	2	3	5	*P*	9
f	9	4	6	3	8

(a) 4 (b) 6
(c) 8 (d) 9

92. The length of shadow of a tower is 40m when the angle of elevation of sun be 60^0 Find the angle of elevation when the shadow be of length 120m.
(a) 30^0 (b) 45^0
(c) 60^0 (d) 75^0

93. If the ratio of the volumes of two spheres be 125:64. Find the ratio of their surface area:
(a) 9:16 (b) 16:9
(c) 25:16 (d) 16:25

94. How many tiles of 40cm square each will be required outside of a grassy plot 28 m by 18m?
(a) 450 (b) 500
(c) 550 (d) 600

95. What is the chance of having 53 Sundays in leap year?
(a) 1/7 (b) 2/7
(c) 3/7 (d) 4/7

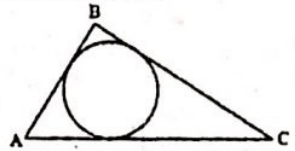
96. If 5 men or 7 women can perform a work in 14 days then find the number of days which shall be taken by 9 men and 7 women to perform the same work ?
(a) 3 days (b) 4 days
(c) 5 days (d) 6 days

97. Find the angle between the hour-hand and minute-hand of a watch at 8:45 AM.
(a) 0^0 (b) $3\frac{1}{2}^0$
(c) $5\frac{1}{2}^0$ (d) $7\frac{1}{2}^0$

98. The mean of 25 numbers is 78.4. Later on, it was detected that by mistake a number 96 was missed as 69, then the correct mean is:
(a) 77.48 (b) 78.48
(c) 79.48 (d) 80.48

99. If O be a point inside a rectangle ABCD. Join OA, OB, OC and OD. If OA=6, OB=$2\sqrt{11}$, OC=8 then OD is:
(a) 6 (b) 5
(c) 4 (d) 3

100. In the given triangle ABC, the sides AB= 9cm, BC=12 cm, AC=15 cm, then the radius is :



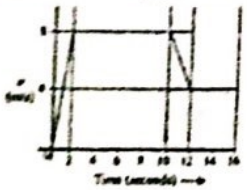
(a) 3 ½ (b) 3
(c) 2 ½ (d) 2

ANSWERS - 2008-2009

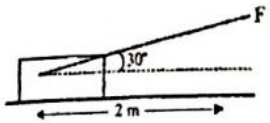
1. (c)	2. (c)	3. (d)	4. (a)	5. (a)	6. (b)	7. (c)	8. (c)	9. (b)	10. (d)
11. (b)	12. (b)	13. (c)	14. (b)	15. (a)	16. (c)	17. (b)	18. (c)	19. (c)	20. (b)
21. (a)	22. (d)	23. (c)	24. (a)	25. (b)	26. (b)	27. (a)	28. (d)	29. (c)	30. (b)
31. (a)	32. (a)	33. (d)	34. (c)	35. (a)	36. (a)	37. (d)	38. (a)	39. (d)	40. (d)
41. (a)	42. (d)	43. (b)	44. (c)	45. (d)	46. (c)	47. (a)	48. (b)	49. (d)	50. (c)
51. (c)	52. (b)	53. (a)	54. (b)	55. (c)	56. (b)	57. (c)	58. (d)	59. (c)	60. (d)
61. (c)	62. (b)	63. (b)	64. (c)	65. (c)	66. (a)	67. (c)	68. (b)	69. (a)	70. (a)
71. (d)	72. (b)	73. (c)	74. (c)	75. (a)	76. (d)	77. (b)	78. (b)	79. (b)	80. (a)
81. (c)	82. (b)	83. (c)	84. (d)	85. (a)	86. (b)	87. (a)	88. (c)	89. (b)	90. (c)
91. (b)	92. (a)	93. (c)	94. none	95. (b)	96. (c)	97. (d)	98. (c)	99. (c)	100. (b)

+2 AMU Sci./Dip. Engg. 2007-2008

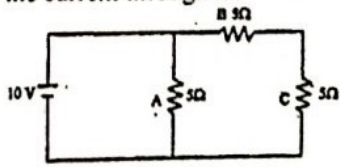
1. An object has a uniform acceleration of 3m/s^2. At a certain time its velocity is 10m/s. What was its velocity 2 seconds earlier?
   (a) -2 m/s (b) +6m/s
   (c) +4 m/s (d) -0 m/s
2. The velocity-time graph of a runner is shown below. Calculate the distance travelled by the runner.
   (a) 80 m (b) 100 m
   (c) 120 m (d) 140 m



3. A ball of mass 70g moving with a speed of 0.5 m/s Vs is stopped by a player in 0.05 seconds. Calculate the force exerted by the player:
   (a) 0.07 N (b) 0.7N
   (c) 7.0N (d) 3.5N
4. Volume of a 500 g box is 450 cm^3. What is the relative density of the material of the box and its weight in water?
   (a) 1.43, 100 g (b) 1.45,50g
   (c) 1.11,50g (d) 1.50,150g
5. A body A of 100 N weight is placed on a table Another smaller body B of 50 N weight is placed on top of A. what is the force on (1) upper body B from the lower body a and (2) the lower body A from the table?
   (a) 150 N, 150 N (b) 100N, 150N
   (c) 50 N, 50N (d) 50N, 150N
6. Calculate the initial upward acceleration of a rocket of mass 1.3 x 10^4 kg, if the initial upward force produced by its engines is 2.6 x 10^5 N (take g=10m/s^2):
   (a) 13 m/s^2 (b) 26 m/s^2
   (c) 10 m/s^2 (d) 20 m/s^2
7. A ball of mass 1.5 kg is dropped from the tower 40 m high. (1) what is its speed when it has covered 20 m? (2) What is its speed when it hits the ground?
   (a) 20m/s, 20√2m/s
   (b) 15m/s, 20√2m/s
   (c) 20m/s, 30√2m/s
   (d) 30m/s, 50m/s
8. A satellite of mass m is a circular orbit of radius *a* around earth (mass M, radius R). the speed of the satellite v is:
   (a) $v=\sqrt{\frac{GMm}{R}}$ (b) $v=\sqrt{\frac{GM}{R}}$
   (c) $v=\sqrt{\frac{GM}{a}}$ (d) $v=\sqrt{\frac{Gm}{a}}$
9. A force F acts in a body of mass *m* initially at rest producing a uniform acceleration a for a time interval t. the work done W on the body is:
   (a) ½ m a^{2}t^2 (b) ½ m a F
   (c) ½ m a^2 F (d) ½ m a F^2
10. A body of mass 0.5 kg is thrown vertically upward by spending 2 Joules of energy. Calculate the height to which it rises (take g= 10 m/s^2):
    (a) 0.5 m (b) 0.2 m
    (c) 0.4 m (d) 2.0 m
11. Applying a force, F=50N on an object the displacement is 2m. the force F makes an angle of 30^0 with the horizontal. Calculate the work done:
    (a) 50√2 J (b) 50√3 J
    (c) 100√2 J (d) 100√3 J



12. Calculate the final temperature of water when 2 kg of water at 80^0 C is mixed with 8 kg of water at 20^{0}C:
    (a) 32^0 C (b) 40^0 C
    (c) 36^0 C (d) 45^0 C
13. What is wavelength of ocean waves of speed 20 m/s and time period 5 second?
    (a) 20m (b) 4 m
    (c) 100m (d) 200m
14. Which of the following is wrong?
    (a)Image formed by a concave mirror is always smaller than the object
    (b)Image formed by a concave minor is always real.
    (c)Image formed by a plane mirror is always virtual
    (d)Image formed by a concave lens is a always virtual.
15. Two lenses of powers + 2.0 D and 1.5 D are placed in contact with each other. What is the focal length of the combination and the nature of this lens combination?
    (a) 200 cm. convergent
    (b) 150 cm, divergent
    (c) 350 cm. convergent
    (d) 150 cm, divergent
16. Three resistances is A, B and C each of 5Ω are connected to a battery of 10V as shown in the figure. Calculate the current through C:



    (a) 2 amp (b) 1 amp
    (c) 3 amp (d) 0.6 amp
17. The device used to generate electrical energy is:
    (a) Electrical motor (b) Generator
    (c) Galvanometer (d) Voltmeter
18. The number of molecules in 11 g of CO_2 are:
    (a) 0.25 x 10^{23} (b) 0.50 x 10^{23}
    (c) 1.00 x 10^{23} (d) 1.51 x 10^{23}
19. The value of charge/ mass ratio of electron was determined by:
    (a) W.K. Roentgen (b) J.J. Thomson
    (c) Marie Curie (d) Niels Bohr
20. Which of the following reactions is an example of combination reaction?
    (a) $Zn(s)+CuSO_4(aq)\rightarrow ZnSO_4(aq)+Cu(s)$
    (b) $BaCl_2(aq)+Na_2SO_4(aq)\rightarrow BaSO_4(s)+2NaCl(aq)$
    (c) $CaCO_3(s)\rightarrow CaO(s)+CO_2(g)$
    (d) $C(s)+O_2(g)\rightarrow CO_2(g)$
21. The clement 'X' and 'Y' have atomic numbers 12 and 17 respectively. Element 'X' reacts with element 'Y' to form compound with molecular formula
    (a) XY (b) XY_2
    (c) XY_3 (d) X_2Y_3
22. The atomic radius (pm) of Li, Na, K and Rb varies in the order:
    (a) Na<K<Rb<Li (b) K<Na<Li<Rb
    (c) Li<Na<K<Rb (d) Rb<K<Na<Li
23. The electron affinity value (kJ mol^{-1}) of fluorine (F) is less than:
    (a) Hydrogen (H) (b) Lithium (Li)
    (c) Oxygen (O) (d) Chlorine (Cl)
24. Which of the following is an example of strong electrolyte?
    (a) H_2CO_3 (b) NH_4OH
    (c) NaCl (d) COOH-COOH
25. If pH of a solution changes from 5 to 4, the change in hydrogen ion concentration shall be :
    (a) Two times (b) Five times
    (c) Ten times (d) Twenty times

26. Bleaching powder is manufactured by the reaction of :
(a) $CaCl_2$ and $CaCO_3$
(b) Cl_2 and $Ca(OH)_2$
(c) Cl_2 and $CaSO_4$
(d) Cl_2 and $Ca(HCO_3)_2$

27. The hard glass is obtained by fusing:
(a) Soda ash, sand and limestone
(b) A mixture of sand, lime, borax and alkali carbonates
(c) Potassium carbonate, limestone
(d) Potassium carbonate ,lead oxide and sand

28. Which of the following metal is most reactive?
(a) Aluminium (b) Lead
(c) Mercury (d) Silver

29. Which of the following alloys contains chromium?
(a) Steel (b) Stainless steel
(c) Magnalium (d) Brass

30. Which of the following is monomer of natural rubber?
(a) Chloroethene (b) Cholorprene
(c) Isoprene (d) Buta-1, 3-diene

31. Alkaline KMO_4 oxidises propanon to:
(a) Propanoic acid(b) Ethanoic acid
(c) Methanoic (d) Oxalic acid

32. Which of the following metals can displace Zn from $ZnSO_4$ solution?
(a) Calcium (b) Copper
(c) Iron (d) Mercury

33. Heating of sodium ethanoate with soda lime yields:
(a) Ethane (b) Methane
(c) Ethanol (d) Methanol

34. The compound formed by the reaction of ethyne with bromine is:
(a) Br-CH=CH-Br
(b) $Br\text{-}CH_2\text{-}CHBr_2$
(c) CH_2=CH-Br
(d) $Br_2CH\text{-}CHBr_2$

35. Cell were first discovered by Robert Hooke in the year:
(a) 1665 (b) 1674
(c) 1831 (d) 1839

36. The plant cells have a rigid cell wall that lies:
(a) Outside the plasma membrane
(b) Inside the plasma membrane
(c) In between the plasma membrane
(d) None of the above

37. During mitosis nucleolus and nuclear membrane are lost in stage:
(a) Prophase (b) Metaphase
(c) Anaphase (d) Telophase

38. An example of simple and permanent tissue is:
(a) Xylem (b) Phloem
(c) Selerenchyma (d) None of these

39. The shape of squamous epithelial tissue is:
(a) Cubical (b) Falttened
(c) Pillar like (d) All the above

40. Fresh water sponge belongs to phylum:
(a) Arthropoda (b) Annelida
(c) Porifera (d) Aschleminthes

41. In animal kingdom the largest phylum is:
(a) Arthropoda (b) Annelida
(c) Mollusca (d) Echinodermata

42. In sea horse heart is two chambered, in wall lizard it is three chambered while in pigeon it is four chambered and incase of man it is:
(a) 1 chambered (b) 2 chambered
(c) 3 chambered (d) 4 chambered

43. Energy giving food sources are:
(a) Cereals like Rice and Wheat
(b) Proteins, Milk, Meat
(c) Minerals, Vitamins
(d) All the above

44. Lead chromate is a common adulterant of:
(a) Powdered Haldi
(b) Powdered Dhania
(c) Powdered Mirch
(d) Edible Oil

45. AIDS disease was first detected in :
(a) England (b) USA
(c) South Africa (d) India

46. Biosphere means:
(a) Part of atmosphere plus life
(b) Part of hydrosphere plus life
(c) Part of lithosphere plus life
(d) All the above

47. The overall equation of photosynthesis is:
(a) $6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{sunlight}} C_6H_{12}O_6 + 6H_2O + 6O_2$
(b) $6CO_2 + 6H_2O \xrightarrow[\text{Chlorophyll}]{\text{sunlight}} C_6H_{12}O_6 + 6O_2$
(c) $6CO_2 + 6H_2O \xrightarrow[\text{Chlorophyll}]{\text{sunlight}} C_6H_{12}O_6 + O_2$
(d) None of the above

48. In insects respiratory organ is:
(a) skin (b) Gills
(c) Lungs (d) Trachea

49. A person having AB blood group can receive blood from the person having a blood group of:
(a) A and B both (b) AB only
(c) O only (d) All the above

50. In plants the movement during pollen tube growth is due to:
(a) Phototropism
(b) Geotrotropism
(c) Chemotropism
(d) Photoperiodism

51. Fatehpur Sikri was built by:
(a) Akbar (b) Babur
(c) Shahjahan (d) Jahangir

52. An Indian who received the Noble prize within the last ten years is:
(a) Mashalkar
(b) Amartya Sen
(c) Ram Swamp Bhatnagar
(d) Rabindra Nath Tagore

53. In 1857 the rebelling sepoys who occupied Delhi Declared the following to be their sovreign;
(a) Jahandar Shah
(b) Akbarshah II
(c) Bahadur Shah Zafar
(d) Shah Alam II

54. Kalidas wrote:
(a) Harshacharita (b) Kadambari
(c) Kamasutra (d) Shakuntala

55. Kathakali is performed mostly in:
(a) Kerala (b) Karnataka
(c) Bengal (d) Gujarat

56. Gandhiji was born in:
(a) Durban, South Africa
(b) Porgandar, Gujarat
(c) Mumbai, Maharashta
(d) Karachi, Sind

57. The state in India which has been re-electing the government of same political front for the largest number of years is:
(a) Tamil Nadu (b) Andhra pradesh
(c) West Bengal (d) Karnataka

58. A Vice-chancellor of the Aligarh Muslim University who rose later to be the President of India, was:
(a) Fakhruddin Ali Ahmad
(b) Dr. Ziauddin Ahmad
(c) Dr.Abdul Kalam
(d) Dr. Zakir Husain

59. The leader of Soviet Union (Russia) under whom Hitler was defeated in World War II, was:
(a) Stalin (b) Lenin
(c) Trotsky (d) Brezhnev

60. The only power that has actually use atomic weapons against another country is:
(a) Russia (b) United States
(c) Germany (d) United Kingdom

61. In a group of 80 people, 45 like coffee, 50 like tea and each person likes at least one of the two drinks. The number of people who like both coffee and tea is:
(a) 5 (b) 10

(c) 15 (d) 20

62. The domain of the real valued functin $f(x)= \sqrt{x}+\sqrt{x-10}$ is:
(a) $(x:0\le x\le 10, x\in R)$
(b) $(x:x\ge 10, x\in R)$
(c) $x:x < 10, x \in R]$
(d) None of these

63. The value of
$$\frac{3\sqrt{2}}{\sqrt{6}+\sqrt{3}}-\frac{4\sqrt{3}}{\sqrt{6}+\sqrt{3}}+\frac{2\sqrt{3}}{\sqrt{6}-\sqrt{2}}$$
(a) $\sqrt{3}$ (b) $2\sqrt{3}$
(c) $4\sqrt{3}$ (d) 0

64. If $3x-3^{x-1}=18$, then the value of x is:
(a) 3 (b) 8
(c) 27 (d) 216

65. Rs. 49 was divided among 150 children. Each girl 50 paise and each boy 25 paise. the number of boys was:
(a) 101 (b) 102
(c) 103 (d) 104

66. The number of degree in an angle which is equal to one-fifth of its supplement is:
(a) 15 (b) 30
(c) 60 (d) 150

67. The sum of the base angle of a triangle is 140^0 and their difference is 40^0. The angles of triangle are:
(a) $90^0, 50^0, 40^0$ (b) $100^0, 40^0, 40^0$
(c) $80^0, 40^0, 60^0$ (d) $130^0, 30^0, 20^0$

68. The base of a triangle is smaller than its altitude. If its area is $1/2\ x^2+2x+3/2$, its base is:
(a) (x + 1) (b) (x + 2)
(c) (x + 3) (d) (x - 4)

69. The perimeter of a rectangle is 82 m and its area is $400m^2$. The breadth of the rectangle is:
(a) 25 m (b) 16 m
(c) 9 m (d) 20 m

70. A goods train leaves a station at a certain time at a fixed speed. After 6 hours, an express train leaves the same station and moves in the same direction at a uniform speed of 90 km/hr. this train catches the goods train in 4 hours. The speed of the goods trains is:
(a) 36 km/hr (b) 40 km/hr
(c) 42 km/hr (d) 45 km/hr

71. If (x-a) is a factor of $(x^3-3x^2a+2a^2x+b)$, then the value of b is:
(a) 0 (b) 1
(c) 2 (d) 3

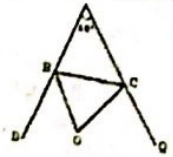
72. If $(x + k)$ is a H.C.F. of (x^2+ax+b) and (x^2+cx+d) then the value of k is:
(a) $\frac{b+d}{a+c}$ (b) $\frac{a+b}{c+d}$
(c) $\frac{a-b}{c-d}$ (d) $\frac{b-d}{a-c}$

73. The value of
$$\frac{x-3}{x^2-x-6}+\frac{2x-1}{2x^2+5x-3}-\frac{2x+5}{x^2+5x+6}$$
(a) 0 (b) 1
(c) -1 (d) 0

74. The ratio of the sum and the product of the roots of $7x^2-12x+18=0$ is:
(a) 7 : 12 (b) 3: 2
(c) 2 : 3 (d) 7 : 18

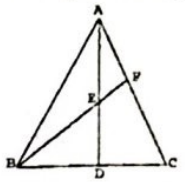
75. If $(x^{3/2}-xy^{1/2}+x^{1/2}y-y^{3/2})$ is divided by $(x^{1/2}-y^{1/2})$ then the quotient is:
(a) x+y (b) x-y
(c) $x^{1/2}+y^{1/2}$ (d) x^2-y^2

76. The sides AB and AC of the triangle ABC are produced to P and Q respectively. The bisectors of <PBC and <QCB intersect at O. If $<BAC=60^0$, then <BOC is:



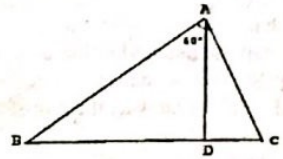
(a) 25^0 (b) 30^0
(c) 45^0 (d) 60^0

77. In ΔABC, AD is the median through A and E is the mid-point of AD and BE produced meets AC at F. then AF is equal to:



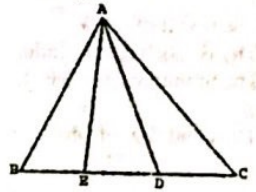
(a) 1/5 AC
(b) 1/4 AC
(c) 1/3 AC
(d) 1/2 AC

78. In a right angled ΔABC, right angled at A, if AD ⊥ BC such that AD=p. If BC=a, CB=b and AB=c, then:



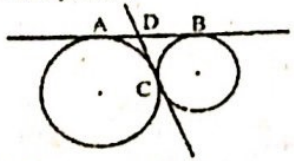
(a) $p^2=b^2+c^2$ (b) $1/p^2=1/b^2+1/c^2$
(c) p/a = p/b (d) $p^2=b^2c^2$

79. In the given figure, AD is median of ΔABC and AE ⊥ Bc. If BC=*a*, *CA=b*, *AB=c*, *AD=p*, *AE=h and DE=x*, then b^2+c^2 is equal to:



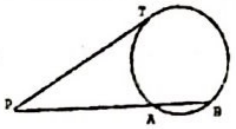
(a) $2p^2=1/2a^2$ (b) p^2+a^2
(c) $2p^2+a^2$ (d) p^2+2a^2

80. In the given figure, AB and CD are two common tangents to two touching circles. If DC=4 cm, then AB is equal to:



(a) 4 cm (b) 6 cm
(c) 8 cm (d) 12 cm

81. If PAB is a secant to a circle intersecting it at A and B, PA =8cm and a tangent PT is of length 12 cm, then chord AB is:



(a) 10cm (b) $4\sqrt{5}$cm
(c) 4 cm (d) 18 cm

82. The sum of all 2 digit natural numbers is:
(a) 4750 (b) 4905
(c) 3376 (d) 4680

83. The value of $\frac{\cos 68^0}{\sin 22^0}+\frac{\sin 20^0}{\cos 70^0}$
(a) 0 (b) -1
(c) 1 (d) 2

84. If the length of shadow of a pole is double of the length of the pole then the angle of elevation of the sum is:
(a) 30^0 (b) 45^0
(c) 60^0 (d) None of these

85. The volume of a sphere of radius r is equal to volume of a right circular cone of the base of radius r. the height of the cone is:
(a) r (b) 2r
(c) 3r (d) 4r

86. Three cubes of sides 8cm. 6 cm, and 1cm are melted to form a new cube. The surface area of the cube so formed is:
(a) 480 cm^2 (b) 486 cm^2
(c) 490 cm^2 (d) 500 cm^2

87. Tickets numbered from 1 to 20 are mixed up and a ticket is drawn at random. The probability that drawn ticket has a number multiple of 3 or 7 is:
(a) 1/15 (b) 1/2

(c) 2/5 (d) 7/20

88. The arithmetic mean of 5 numbers is 27. If one of these numbers is removed then mean becomes 25, the removed number is:
(a) 28 (b) 26
(c) 25 (d) 35

89. The point on x-axis equidistant from the points A(7,6) and (-3,4):
(a) (0,4) (b) (-4, 0)
(c) (3,0) (d) (0,3)

90. Two vertices of a triangle ABC are A(-1,4) and B(5,2) and its centroid is (0,-3). The Co-ordinates of C are:
(a) (4,3) (b) (-4,-15)
(c) (-15,-4)(d) None of these

91. The first Vice-Chancellor of Aligarh Muslim University was:
(a) Sahibzada Aftab Ahmad Kha
(b) Sir Ross Masood
(c) Raja Muhammad Ali of Muhmudabad
(d) Dr. Ziauddin Ahmad

92. Sir Syed Ahmad Khan was the editor of the famous journal:
(a) Tahzeeb-ul-Akhlaq(b) Al-Hilal
(c) Comrade (d) Young India

93. The Mughal empire was established in India by:
(a) Jahangir (b) Humayun
(c) Babur (d) Shahjahan

94. Abul Fazl, the famous historian of Akbar's reign, is the author of:
(a) Akbarnama
(b) Muntkhab-ul-Tawarikh
(c) Tabaqat-i-Akbari
(d) Badshahnama

95. Sir Syed Ahmad Khan established the Scientific Society in:
(a) 1851 (b) 1864
(c) 1875 (d) 1886

96. The Mohammedan Anglo-Oriental College was established in:
(a) 1870 (b) 1875
(c) 1880 (d) 1885

97. The famous sufi-poet Amir Khusra was the disciple of:
(a) Shaikh Moinuddin Chisti
(b) Shikh Qutubuddin Bakhtiar Kaki
(c) Shaikh Nizamuddin Aulia
(d) Shaik Shahabuddin Suhrawardi

98. In post independence India, Maulana Abul kalam Azad was the minister of:
(a) Home affairs
(b) Educations
(c) External Affairs
(d) Health and Social Welfare

99. Kabir was the disciple of:
(a) Ravidas (b) Raidas
(c) Ramananda (d) Ramadas

100. Sir Syed's book *Asar-us-Sanadid* deals with:
(a) The revolt of 1975
(b) The Bristish rule in India
(c) The monuments of Muslims in India
(d) The condition of Muslims in India

ANSWERS - 2007-2008

1. (c)	2. (b)	3. (b)	4. (c)	5. (d)	6. (c)	7. (a)	8. (b)	9. (a)	10. (c)
11. (b)	12. (a)	13. (c)	14. (d)	15. (a)	16. (b)	17. (b)	18. (d)	19. (b)	20. (d)
21. (b)	22. (c)	23. (d)	24. (c)	25. (c)	26. (b)	27. (c)	28. (a)	29. (b)	30. (c)
31. none	32. (a)	33. (b)	34. (d)	35. (a)	36. (a)	37. (a)	38. (d)	39. (b)	40. (c)
41. (a)	42. (d)	43. (a)	44. (a)	45. (b)	46. (d)	47. (b)	48. (d)	49. (d)	50. (c)
51. (a)	52. (b)	53. (c)	54. (d)	55. (a)	56. (b)	57. (c)	58. (d)	59. (a)	60. (c)
61. (c)	62. (b)	63. (c)	64. (a)	65. (d)	66. (b)	67. (a)	68. (c)	69. (b)	70. (a)
71. (a)	72. (d)	73. (a)	74. (c)	75. (a)	76. (d)	77. (c)	78. (b)	79. (a)	80. (c)
81. (a)	82. (b)	83. (d)	84. (d)	85. (d)	86. (b)	87. (c)	88. (d)	89. (c)	90. (b)
91. (c)	92. (a)	93. (c)	94. (a)	95. (b)	96. (b)	97. (c)	98. (b)	99. (c)	100.(c)

+2 AMU Sci./Dip. Engg. 2006-2007

1. If x+y=5 and $xy=6$, then the value of$(x^3 - y^3)$
(a) 0 (b) 10
(c) 15 (d) 19

2. $x^{29}-x^{25}+x^{13}-1$ is divisible by:
(a) Both (x-1) and (x+1)
(b) (x-1) but not by (x-1)
(c) (x+1) but not by (x-1)
(d) Neither (x-1) not (x+1)

3. If $(5x^2 + 14x + 2)^2 - (4x^2 - 5x + 7)^2$ is divided by $(x^2 + x + 1)$ then quotient q and remainder r are given by:
(a) q= $(x^2 +19x -5)$, r=1
(b) q= $9(x^2 +19x -5)$, r=0
(c) q= $(x^2 +19x -5)$, r=0
(d) q= $9(x^2 +19x -5)$, r=1

4. If (x – 1) is the H.C.F. of $(x^2 -1)$ and $px^2 - q(x+1)$, then
(a) p =2q (b) q=2p
(c) 3p = 2q (d) 2p =3q

5. The monthly income of A and B are in the ratio 4:3. Each of them saves Rs. 600. If the ratio of their expenditure is 3:2, then the monthly income of A is:
(a) Rs. 2400 (b) Rs. 1800
(c) Rs. 2000 (d) Rs. 3600

6. If one root of $3x^2 + 11x + k = 0$ be reciprocal of the other, then the value of k is:
(a) 1 (b) 2
(c) 3 (d) 4

7. $\frac{x^2-7x+12}{x^2-2x-35} \times \frac{x^2-13x+42}{x^2-x-6} \times \frac{x^2+7x+10}{x^2-10x+24}$
(a) $\frac{x-1}{x-3}$ (b) $\frac{x-6}{x+7}$
(c) $\frac{x-7}{x+12}$ (d) 1

8. The value $\left(\frac{xa}{x^b}\right)^{\frac{1}{ab}} \left(\frac{xb}{x^c}\right)^{\frac{1}{ab}} \left(\frac{xc}{x^a}\right)^{\frac{1}{ab}}$ is
(a) 1 (b) 0
(c) $1/x^{ab}$ (d) None of these

9. Let A be the set of squares of natural numbers and x∈ A, y ∈ A. Then:
(a) $x + y \in A$ (b) $x - y \in A$
(c) $x/y \in A$ (d) xy ∈ A

10. L.C.M. of two numbers is 14 times their H.C.F. the sum of L.C.M and H.C.F. is 600. If one number is 280, then the other is:
(a) 40 (b) 60
(c) 80 (d) 100

11. The value of $\frac{(0.05)^2 + (0.41)^2 + (0.073)^2}{(0.005)^2 + (0.041)^2 + (0.0073)^2}$ is:
(a) 0.1 (b) 10
(c) 100 (d) 1000

12. The length and breadth of a square are increased by 30% and 20% respectively. The area of the rectangle so formed exceeds the area of the square by:
(a) 20% (b) 36%
(c) 50% (d) 56%

13. The average temperature for Monday, Tuesday and Wednesday was 40°C. The average for Tuesday, Wednesday and Thursday was 41°C. If the temperature on Thursday be 42°C, the temperature on Monday was:
(a) 37^0C (b) 38^0C
(c) 39^0C (d) 40^0C

14. If (a+b) : (a-b) = 1:5, then $(a^2 - b^2)$: $(a^2 + b^2)$ equals:
(a) 2 : 3 (b) 3 : 2
(c) 5 : 13 (d) 13 : 5

15. A goods train leaves a stations at a certain time at a uniform speed. After 6 hours, an express train leaves the same stations and moves in the same direction at a uniform speed of

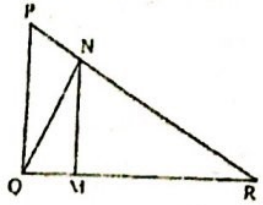
90km/hr. this train catches the goods train in 4 hours. The speed of the goods train is:
(a) 30 km/hr (b) 32 km/hr
(c) 36 km/hr (d) 38 km/hr

16. The ages of two persons differ by 20 years. If 5 year ago, the elder one be 5 times as old as the younger one, their present age are:
(a) 30 years, 10 years
(b) 25 years, 5 years
(c) 29 years, 9 years
(d) 50 years, 30 years

17. An amount was put at simple interest at a certain rate for 2 years. Had it been put at 3% higher rate, it would have fetched Rs. 300 more. The amount was:
(a) Rs. 4000 (b) Rs. 5000
(c) Rs. 6000 (d) Rs. 6500

18. The area of a rhombus each one of whose sides measures 20cm and one diagonal is 24cm is:
(a) 380 cm^2 (b) 384 cm^2
(c) 390 cm^2 (d) 400 cm^2

19. In ΔPQR, side QR=10cm and height PQ= 4.4 cm. If PR=11 cm, then altitude QN equals:



(a) 3 cm (b) 4 cm
(c) 5 cm (d) 6 cm

20. A copper wire of diameter 3mm is evenly wrapped on the cylinder of length 42cm and diameter 49 cm to cover the whole surface. The length of wire is:
(a) 215.6 m (b) 192.4m
(c) 204.8m (d) 196.5 m

21. Three cubes of sides 8cm, 6cm and 1 cm are melted to form a new cube. The surface area of the cube so formed is:
(a) 480 cm^2 (b) 486 cm^2
(c) 490 cm^2 (d) 496 cm^2

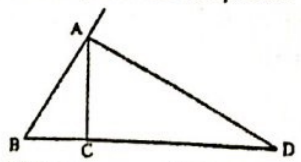
22. The diameters of two cones are equal. If their slant height are in the ratio 5:4, the ratio of their curved surface areas is:
(a) 4:5 (b) 25:16
(c) 16:25 (d) 5:4

23. The sum of all odd numbers between 100 and 200 is:
(a) 6200 (b) 6500
(c) 7500 (d) 3700

24. The value of $\sin 43^0 \cos 47^0 + \cos 43^0 \sin 47^0$ is:
(a) 0 (b) 1
(c) $\sin 4^0$ (d) $\cos 4^0$

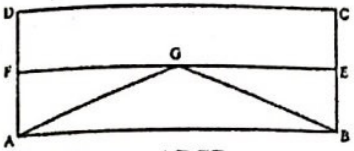
25. ΔABC is such that AB=3 cm, BC =2cm and CA=2.5 cm. ΔDEF is similar to ΔABC. If EF =4cm. then the perimeter of ΔDEF is:
(a) 7.5 cm (b) 15cm
(c) 22.5 cm (d) 30 cm

26. In the given figure, the exterior bisector of <BAC meets BC produced at D. If AB=6cm, BC=4cm and AC=5cm, then CD is equal to:



(a) 24 cm (b) 30 cm
(c) 20 cm (d) 33 cm

27. If ABCD is rectangle E, F are the midpoints of BC and AD respectively and G is any point on EF, then the area of the triangle GAB equals:



(a) ½ the area ABCD
(b) ¼ the area ABCD
(c) 1/3 the are ABCD
(d) 1/6 the area ABCD

28. n coplanar straight lines meet at a point. The angles between consecutive lines are x^0, $2x^0$, ... nx^0. the value of n in order that the mini-mum angle be 24^0 is:
(a) 3 (b) 4
(c) 5 (d) 6

29. The ratio in which the line segment joining A (2,-3) and B (5,6) is divided by x-*axis is:*
(a) 1:2 (b) 2 : 1
(c) 3 : 5 (d) 2 : 3

30. Two circles touch externally. The sum of their areas is 130πsq.cm, and the distance between their centres is 14 cm. the radius of the smaller circle is:
(a) 2cm (b) 3 cm
(c) 4 cm (d) 5 cm

31. When acidified hydrogen peroxide is added to a solution of potassium iodide, iodide is liberated. If the concentration of iodine rises from 0 to 10^{-5} mol L^{-1} in 10 seconds the reaction rate will be:
(a) 10^{-4} mol L^{-1} S^{-1}
(b) 10^{-5} mol L^{-1} S^{-1}
(c) 10^{-6} mol L^{-1} S^{-1}
(d) 10^{-4} mol L^{-1} S^{-1}

32. Which of the following compound is an example of weak electrolyte:
(a) NaCl (b) KCl
(c) HCl (d) CH_3COOH

33. When 0.02 mol of HCl is added to enough water of make the final volume of 2.0 L, then the pH of solution will be :
(a) 1.8 (b) 2
(c) 2.8 (d) 4

34. The pyrex glass is made by fusing mixture of:
(a)Sand, lime borax and alkali carbonate
(b)Potassium carbonate and lime stone
(c)Soda ash, sand and lime ston
(d)postassium carbonate, lead oxide and sand

35. If steel is heated to bright red hot, and is then cooled slowly, the process is called:
(a) Quenching (b) Tempering
(c) Annealing (d) Calcining

36. Ther relative reactivities of metal Mg, Al, Zn aned Fe varies in the order:
(a) Mg>Al>Zn>Fe
(b) Fe>Zn>Al>Mg
(c) Mg>Fe>Al>Zn
(d) Mg>Zn>Fe>Al

37. The elements 'X' and 'Y' have atomic numbers 12 and 8 respectively. Element 'X' reacts with element 'Y' to form compound with molecular formula:
(a) XY (b) XY_2
(c) X_2Y (d) XY_3

38. In electrolytic cell for refining of copper, the cathode is made of:
(a) Impure copper
(b) A strip of pure copper
(c) Graphite
(d) Bronze

39. Which of the following alloys does not contain copper?
(a) Brass (b) Bronze
(c) Duralumin (d) Mangnalium

40. On treatment with sodium borohydride propane gives:
(a) 1- propanol (b) 2- propanol

(c) Propanal (d) Propene

41. Which of the following metals is most reactive?
(a) Calcium (b) Iron
(c) Copper (d) Mercury

42. Concentrated nitric acid oxidises sulphur to:
(a) SO_2 (b) H_2SO_3
(c) H_2SO_4 (d) SO_3

43. Which of the following reaction is an ex-ample of saponification?
(a) $2C_2H_5OH + 2Na \rightarrow 2C_2H_5ONa + H_2$
(b) $C_2H_5OH + CH_3COOH \xrightarrow{H_2SO_4} CH_3COOC_2H_5 + H_2O$
(c) $CH_3CH_2OH \xrightarrow{alk.KMnO_4} CH_3COOH$
(d) $CH_3COOC_2H_5 + NaOH \rightarrow CH_3COONa + C_2H_5OH$

44. Aldehydic functional group is present in:
(a) Propanol (b) Propanal
(c) Propanone (d) Propanoic acid

45. Chemically, detergents are sodium salts of:
(a) Sulphonic acid
(b) Oleic acid
(c) Stearic acid
(d) Palmitic acid

46. For a general reaction $aA+bB \leftrightharpoons cC+dD$ at equilibrium, equilibrium constant can be written as:
(a) $K=[C]^c[D]^d$
(b) $K=[A]^a[B]^b/[C]^c[D]^d$
(c) $K=[C]^c[D]^d/[A]^a[B]^b$
(d) $K=[A]^a[B]^b$

47. The boundary layer of each cell that separates its contents from other cells is made up of:
(a) Lipids and carbohydrates
(b) Lipids and proteins
(c) Protein and carbohydrates
(d) Lipids, proteins and carbohydrates

48. The main component of cell wall that provideS strength to the plant cell are fibrous:
(a) Disacchrides
(b) Polysaccharides
(c) Monosaccharides
(d) Fructose and Maltose

49. The sac like bodies, packed with the martial systhesized in the lumen of endoplasmic reticulum, are used in the formation of:
(a) Lysosomes (b) Peroxisomes
(c) Lysosomes and peroxisomes
(d) Lysosomes and centrosomes

50. The cells with thin wall, dense cytoplasm and few vacuoles is the characteristic of:
(a) Cambium (b) Phloem
(c) Xylem (d) Cortex

51. The tissue that transports sucrose is characterized with the presence of:
(a) Sieve tube, companion cell and fiber
(b) Sieve tube, parenchyma and fibre
(c) Sievee tube, companion cel and parenchyma
(d) Sieve tube, companion cell, parenchyma and fiber

52. In which respect fats resemble with carbohydrates?
(a) Presence of C, H and O
(b) Presence of C and H
(c) Presence of C, H and O
(d) Presence of C, H and N

53. The organic chemical that are used in our body as co-enzymes are classified as:
(a) Vitamins
(b) Hormones
(c) Vitamins and Hormones
(d) Protein and Hormones

54. The oxidation/reduction reaction in the cells require the presence of:
(a) Iron (b) Calcium
(c) Sodium (d) Phosphorus

55. The presence of sunken stomata is the characteristic of:
(a) Xerophyres
(b) Mesophytes
(c) Hydrophytes
(d) Xerophytes and Hydrophytes

56. To activate plant pigments, the wavelength of lie in the range of:
(a) 320-800 nm (b) 660-800 nm
(c) 400-800 nm (d) 360-800 nm

57. The photolysis of water in photosynthesis releases:
(a) $2H^+ + 2e^- + E$
(b) $2H^- + 2e^- + 1/2O_2$
(c) $2H^+ + 1/2O_2 + E$
(d) $2H^+ + 2e^- + NADPH$

58. How many pairs of elongated glands are present in the mid gut of grasshopper's digestive system?
(a) 6 (b) 4
(c) 8 (d) 2

59. The exchange of gases between blood capillaries and the tissue takes place because of
(a) Simple exchange
(b) Concerntration gradient
(c) Active process
(d) Active and exchange process

60. Indentify the fragments of blood that lack nuclei:-
(a) Platelets
(b) RBC
(c) WBC and RBC
(d) Plateles and RBC

61. Clumps formed during blood transfusion is the result of the interaction between the products of:
(a) RBC and WBC
(b) Plasma and platelets
(c) RBC and Plasma
(d) WBC and Plasma

62. The contractile vacuoles in single celled animals perform:
(a) Excretory function
(b) Osmoregulation function
(c) Excretory and osmoregulatory function
(d) Excretory and storage functions

63. The differentiation of vegetative to reproductive phase involves:
(a) Proteins and hormones
(b) Chromophore
(c) Chromoproteins
(d) Hormones

64. DNA molecule consists of two polynucleotide strands where each helix turns at a length of :
(a) 3 nm with 10 nucleotides
(b) 3.6 nm with 8 nucleotides
(c) 3.4 nm with 8 nucleotides
(d) 3.4 nm with 10 nucleotides

65. Fro a domestic electric bulb with line voltage of 250 volts drawing a current of 0.24 amperes and lighted for 10 hours, which of the following is correct:
(a) charge flowing through the circuit is 8640 coulomb and bulb is of 100 watts
(b) Charge flowing through the circuit is 8640 coulomb and bulb is of 60 watts
(c) Charge flowing through the circuit is 864 coulomb and bulb is of 100 watts
(d) Charge flowing through the circuit is 864 coulomb and bulb is of 60 watts.

66. A circuit containing three resistance of 2,3 and 6 ohms connected in parallel is joined to another resistance of 1 ohm in series and then connected to a battery of 12 volts. The total resistance of the circuit and the current flowing through the circuit is:
(a) 2 ohms and 12 amperes
(b) 6 ohms ad 2 amperes
(c) 2 ohms and 6 amperes
(d) 6 ohms and 6 amperes

67. The principle of Electomagnetic induction is used in :

(a) Generation of electricity
(b) Calculation of magnetic field around a bar magnet
(c) Calculation of force between the charged particles
(d) Calculation of voltage drop across a resistance in a circuit

68. Read the following statements:
I: Superconductors offer no resistance to the flow of current,
II: Superconductivity has been found to exist
III: Electric charge cannot flow through superconductors.
Which of the following is true:
(a) I, II and III (b) II and III only
(c) I and III only (d) I and II ony

69. Read the following statements :
I. About half of the solar energy striking the earth's periphery reaches its surface
II. The ultraviolet radiations are not absorbed in earth's atmosphere
III. The solar energy on earth induces wind, storms, rain ocean waves etc.
IV. The solar radiation reaching earth's surface is mostly in the form of heat and visible light.
Which of the following is true:
(a) I, II and III (b) II, III and IV
(c) I, III and IV
(d) None of the above statements is correct.

70. Read the following statements:
I. In nuclear fission heavy uranium atoms split into lighter atoms
II. In nuclear fusion mass is converted into energy.
III. In nuclear fusion process nuclei of low atomic numbers combine to form heavier atomic nucleus.
IV. Energy in the sun is mostly produced due to nuclear fission.
Which of the following is true:
(a) I, II and III
(b) II, III and IV
(c) I, III and IV
(d) None of the above

71. Read the following statements for a situation where a ray of light passes from, a medium '1' to the medium '2':
I. the ratio-sin(i)/sin(r) where 'i' and 'r' are the angles of incidence and the angle of refraction is called refractive index of medium '2' with respect to medium '1'.
II. $n_{21} = \sin i / \sin r = n_2/n_1$
III. The absolute refractive index of medium '1' n_1 ratio of speed of light in medium 1 to the speed of light in vaccum.
Which of the following is true:
(a) I and II
(b) II and III
(c) I and III
(d) None of the above

72. A 5 cm tall object is placed at a distance of 30 cm perpendicular to the principle axis of a convex lens of focal length 20 cm. in this case which of the following statement is true:
(a)The image length is 10 cm, real , erect at a distance of 60cm on the right of lens.
(b)The image length is 10 cm, virtual,erect at a distance of 60cm, on the left of lens.
(c) The image length is 10 cm, real, inverted at a distance of 60 cm on the right of lens.
(d) The image length is 5cm, real, erect at a distance of 30 cm on the right of lens.

73. Read the following statements about the Earth:
I. The earth appears blue and green from space due to the reflection of light from water and landmass on its surface.
II. THE thin atmosphere around the Earth acts like green house and keeps the temperature within suitable range.
III. The ozone layer around Earth passes ultraviolet radiations coming from the sum to the Earth's surface.
which of the following is true
(a) I and II
(b) II and III
(c) I and III
(d) All the above statements are incorrect

74. The brakes are applied to a moving car producing a negative acceleration of 2 m/s^2 and the car slops after 6s. The distance travelled by the car after applying the brakes is:
(a) 128 m (b) propanal36 m
(c) 32m (d) 16 m

75. Two spheres A and B with mass m_1 and m_2 respectively are placed of a flat platform and move towards each other with the respective velocity of u_1 and u_2. After collision they move in opposite direction with velocity v_1 and v_2. The velocity of sphere B after collision is
(a) $v_2 = \{m_1(u_1 + v_1) + m_2u_2\}/m_2$
(b) $v_2 = \{m_1u_1 + m_2u_2\}/m_2$
(c) $v_2 = \{m_1(u_1 + v_1) - m_2u_2\}/m_2$
(d) $v_2 = \{m_1(u_1 - v_1) + m_2u_2\}/m_2$

76. A boy throws a ball upwards and the ball after travelling in air hits the ground some distance away from the boy. The path followed by the ball is:
(a) A straight line
(b) Two sides of a triangle
(c) A parabola
(d) An ellipse

77. Small metallic ball is suspended by a thread from a fixed support and the pendulum then swings from one extreme side to another. For this swinging back and forth motion read the following statements:
I.The kinetic energy of the system is minimum at the mid position.
II.The potential energy is minimum at the extreme position
III.The sum of potential energy and the kinetic energy is zero at every position of the pendulum.
Which of the following is true:
(a) I,II and III
(b) II, III and IV
(c) I, III and IV
(d) None of these

78. Read the following statements:
I. The quantity of heat required by 1 kg of a substance to raise its temperature to 1°C is called 'specific heat' of the substance..
II. The heat required to completely change 1kg of a solid to liquid without change of temperature is called 'latent heat' of melting of the substance.
III. Eat may be called energy of molecular motion and gain of the heat increases molecular motion.
Which of the following is true:
(a) I and II
(b) II and III
(c) I, II and III
(d) None of the above

79. For a wave motion with wavelength L, frequency f, time period T and the wave velocity V.
(a) $f = 1/T$; $V = fL$ (b) $f = T$; $V = fL$
(c) $f = 1/T$; $V = f/L$ (d) $f = 1/T$; $L = V/T$

80. The time period T of a pendulum of length L, and mass M is given by:
(a) $T = 2\pi\sqrt{Mg}$ (b) $T = 2\pi\sqrt{Lg}$
(c) $T = 2\pi\sqrt{L/g}$ (d) $T = 2\pi\sqrt{M/g}$

81. The Aligarh Muslim University came into existence in
(a) 1877 (b) 1875
(c) 1920 (d) 1921

82. The "Essays on the life of Mohammad" was written by:
(a) Maulana Abul Kalam Azad
(b) Maulana Shibli Nomani
(c) Sir Syed Ahmad
(d) Maulana Hali

83. Who started the Rama Krishna Mission:
(a) Annie Besant
(b) Raja Ram Mohan Roy
(c) Gopal Krishna Gokhale
(d) Swami Vivekanad

84. The first Khalifa to succeed Hazrat Mohammad was:
(a) Hazrat Osman Ghani
(b) Hazrat Omar
(c) Hazrat Abu Bakr
(d) Hazrat Ali

85. Hazrat Amir Khursro was the disciple of:
(a) Khwaja Moinuddin Chisti
(b) Hazrat Nizamuddin Aulia
(c) Baba Fariduddin Ganjshakar
(d) None of the above

86. The famous story "idgah" was written by
(a) Krishan Chander
(b) Munshi Prem Chand
(c) Ghulam Abbas
(d) Ishmat Chugtai

87. The Badshahi Masjid at Lohore was built by:
(a) Humayun (b) Akbar
(c) Shahjahan (d) Aurangzeg

88. Sir Syed Ahmad Khan founded the Scientific Society in:
(a) 1864 (b) 1862
(c) 1865 (d) 1876

Who has written "Sare Jahan Se Achcha'.....
(a) Tagore (b) Prem Chand
(c) Khusro (d) Iqbal

90. Which Indian language also uses Urdu script:
(a) Gujarati (b) Sindhi
(c) Bengali (d) Punjabi

91. The Mughal Emperor Who was the patron of fine arts was:
(a) Aurangzeb (b) Jahangir
(c) Shahjahan (d) Akbar

92. The National Anthem of India has been composed by:
(a) Bankim Chandra Chatterjee
(b) Sarat Chandra
(c) Rabindranath Tagore
(d) Sukumar Ray

93. The author of "Glimpses of World History" is
(a) Jawaharlal
(b) Bipin Chandra
(c) Mahatma Gandhi
(d) V.K. Krishna Menon

94. World War II lasted from:
(a) 1935-1942 (b) 1939-1945
(c) 1939-1942 (d) 1939-1946

95. The founder of the British Empire in India was:
(a) Lord Wellesley
(b) Lord Curzon
(c) Lord Clive
(d) Warren Hastings

96. The place of worships of the Jew is:
(a) The first Temple
(b) The Synagogue
(c) The Church
(d) The Monastery

97. The British scientist who discovered electromagnetism was:
(a) Marie Curie
(b) Isaac Newton
(c) Michael Faraday
(d) Albert Einstein

98. The Arjuna Award is given to people for outstanding contribution / performance in:
(a) Literature (b) Sports
(c) Music (d) Science

99. Which of the following is incorrectly matched:
(a) Telescope-to view distant objects in space
(b) Barometer-measure atmospheric pressure
(c) Voltmeter-measure the relative density of liquid
(d) Hydrometer- measure the relative density of liquid

100. The famous Indian ornithologist was:
(a) Jim Corbett
(b) Salim Ali
(c) Kalpana Chawala
(d) Rakesh Sharma

ANSWERS - 2006-2007

1. (d)	2. (b)	3. (b)	4. (a)	5. (a)	6. (c)	7. (d)	8. (d)	9. (d)	10. (c)
11. (c)	12. (d)	13. (c)	14. (c)	15. (c)	16. (a)	17. (b)	18. (b)	19. (b)	20. (a)
21. (b)	22. (d)	23. (c)	24. (b)	25. (b)	26. (c)	27. (b)	28. (c)	29. (a)	30. (b)
31. (c)	32. (d)	33. (b)	34. (a)	35. (c)	36. (a)	37. (a)	38. (b)	39. (d)	40. (b)
41. (a)	42. (c)	43. (d)	44. (b)	45. (a)	46. (c)	47. (b)	48. (b)	49. (a)	50. (a)
51. (d)	52. (a)	53. (a)	54. (d)	55. (a)	56. (c)	57. (b)	58. (c)	59. (b)	60. (d)
61. (a)	62. (c)	63. (d)	64. (d)	65. (b)	66. (c)	67. (a)	68. (d)	69. (c)	70. (a)
71. (a)	72. (c)	73. (d)	74. (b)	75. (d)	76. (c)	77. (d)	78. (c)	79. (a)	80. (c)
81. (c)	82. (c)	83. (d)	84. (c)	85. (b)	86. (b)	87. (d)	88. (a)	89. (d)	90. (b)
91. (b)	92. (c)	93. (b)	94. (c)	95. (c)	96. (b)	97. (c)	98. (b)	99. (c)	100. (b)

+2 AMU Sci./Dip. Engg. 2005-2006

1. With the use of three different weights of 1 kg, 3kg and 9kg, how many objects of different weight can be weighed, if the objects to be weighed and the given weights may be placed in either pan of the scale?
   (a) 15 (b) 13
   (c) 11 (d) 9
2. The largest number by which the expression $n^3 - n$ is divisible by all integral values of n is:
   (a) 2 (b) 3
   (c) 4 (d) 6
3. If $\left(a+\frac{1}{a}\right)^2 = 3$, then $a^3+\frac{1}{a^3}$ equals:
   (a) $3\sqrt{3}$ (b) 0
   (c) $7\sqrt{7}$ (d) $6\sqrt{3}$
4. The fraction $\frac{5x-11}{2x^2+x+6}$ was obtained by adding the two fractions $\frac{A}{x+2}$ and $\frac{B}{2x-3}$ the values of A and B must be:
   (a) A= -1 B= 3 (b) A = -11, B=3
   (c) A=5, B=-11 (d) A = 3, B= -1
5. There is a group of cows and men, the number of legs was 14 more than twice the number the number of heads. The number of cows was:
   (a) 5 (b) 7
   (c) 10 (d) 12
6. Two candles of the same height are lighted at the same time. The first is consumed in 4 hours and the second in 3 hours. Assuming that each candle burns after being lighted was the first candle twice the height of the second?
   (a) $\frac{3}{4}hr$ (b) $1\frac{1}{2}hr$
   (c) $2\,hr$ (d) $2\frac{2}{5}hr$
7. Two boys A and B start at the same time to ride from Aligarh to Bulandshahr, 60 km away. A travels 4 km an hour slower than B. B reaches Bulandshahar and at once turns back meeting A 12 km from Bulandshahar. The speed of A was:
   (a) 4 km/hr (b) 8 km/hr
   (c) 12 km/hr (d) 16 km/hr
8. In a single throw of two dice, the probability of getting a total of 8 is:
   (a) $\frac{1}{36}$ (b) $\frac{7}{36}$
   (c) $\frac{5}{36}$ (d) None of these
9. The volume of the largest sphere carved out of cube is $\frac{11}{21}$ cm^3. The side of the cube is: ($\pi=\frac{22}{7}$)
   (a) 1 cm (b) 2 cm
   (c) 3 cm (d) $\frac{1}{2}$ cm
10. In the GCD of $x^2 + ax-3$ and $2x^2+x+b$ is $x+1$, then the values of a and b are respectively:
    (a) -1, 0 (b) 0, -1
    (c) 2, 0 (d) -2 , -1
11. The pair of equation $3^{x+y}=81$ and $81^{x-y}=3$ has:
    (a) No common solution
    (b) The solution $x=2, y=2$
    (c) The solution $x=\frac{5}{2}, y=\frac{3}{2}$
    (d) The solution $x=\frac{17}{8}, y=\frac{15}{8}$
12. In the quadratic equation $\frac{x(x-1)-(m+1)}{(x-1)(m-1)}=\frac{x}{m}$ the roots are equal when:
    (a) $m=\frac{1}{2}$ (b) $m=-\frac{1}{2}$
    (c) m = 1 (d) m = -1
13. Two numbers whose sum is 6 and whose difference is 8 are the roots of the equation:
    (a) $x^2-6x+7=0$ (b) $x^2-6x-7=0$
    (c) $x^2+6x+8=0$ (d) $x^2+6x-7=0$
14. The value of a in the equation, $\log_{10}(a^2-15a)=2$ are :
    (a) $\frac{15\pm\sqrt{233}}{2}$ (b) 20, -5
    (c) ± 20 (d) None of these
15. When the sum of the first ten terms of an A.P. is four times the sum of the first five term, the ratio of the first term to the common difference is:
    (a) 1 : 2 (b) 2 : 1
    (c) 1 : 4 (d) 4 : 1
16. Simplifying $\left[\sqrt[3]{\sqrt[6]{a^9}}\right]^4\left[\sqrt[6]{\sqrt[3]{a^3}}\right]$ the result is:
    (a) a^{16} (b) a^{12}
    (c) a^8 (d) a^4
17. The sum of three number is 98. The ratio of the first to the second is $\frac{2}{3}$ and the ratio of the second to the third is $\frac{5}{8}$. The second number is:
    (a) 15 (b) 20
    (c) 30 (d) 32
18. The point P is outside a circle and is 13 cm from the centre. A secant from P cuts the circle at Q and R so that the external segment of the secant PQ is 9 cm and QR is 7 cm. the radius of the circle is:
    (a) 3 cm (b) 4 cm
    (c) 5 cm (d) 6 cm
19. A circle of radius 10 cm has its centre at the vertex C of an equilateral triangle ABC and passes through the other two vertices. The side AC extended through C intersects the circle at D. the angle ADB is:
    (a) 15^0 (b) 30^0
    (c) 60^0 (d) 90^0
20. The base of a triangle is 15cm. two lines are drawn parallel to the base, terminating in the other two sides, and dividing the triangle into three equal areas. the length of the parallel line closer to the base is:
    (a) $5\sqrt{6}$ cm (b) 10 cm
    (c) $4\sqrt{3}$ cm (d) 7.5 cm
21. The number of distinct lines representing the altitudes, medians and interior angle, bisectors of a triangle that is isosceles, but not equilateral is:
    (a) 9 (b) 7
    (c) 6 (d) 3
22. If two poles 2′ and 80′ high are 100′ apart, then the height of the point of intersection of the lines joining the top of each pole of the foot of the opposite pole is:
    (a) 50′ (b) 40′
    (c) 60′ (d) 16′
23. The medians of a right triangle which are drawn from the vertices of the acute angles are 5 and $\sqrt{40}$ .The value of the hypotenuse is:
    (a) 10 (b) $2\sqrt{40}$
    (c) $\sqrt{13}$ (d) $2\sqrt{13}$
24. The value of $\cos(40^0+\theta) - \sin(50^0-\theta) + \frac{\cos^2 40^0+\cos^2 50^0}{\sin^2 40^0+\sin^2 50^2}$ is:
    (a) 0 (b) -1
    (c) 1 (d) None of these

25. A 25 foot ladder is placed against a vertical wall of a building. the foot of the ladder is 7 feet from the base of the building. if the top of the ladder slips 4 feet, then the foot of the ladder will slide:
(a) 9 ft (b) 15 ft.
(c) 5 ft. (d) 8 ft.

26. A right circular cone has its base a circle having the same radius as a given sphere. the volume of the cone is one half that of the sphere. The ratio of the altitude of the cone to the radius of its base is:
(a) $\frac{1}{1}$ (b) $\frac{1}{2}$
(c) $\frac{2}{3}$ (d) $\frac{2}{1}$

27. The coordinates of the centroid of a triangle are $\left(\frac{1}{3},4\right)$ and two of its vertices are (-7,6) and (8,5). The third vertex of the triangle is:
(a) (1, 0) (b) (0, 1)
(c) (-1, 0) (d) (0, -1)

28. Rs. 800 at 5% per annum compound interest amount to Rs. 882 in :
(a) 4 years (b) 3 years
(c) 2 years (d) $1\frac{1}{2}$ years

29. The price of an article is cut 10%. To restore it to its former value, the new price must be increased by:
(a) 10% (b) 9%
(c) $11\frac{1}{9}\%$ (d) 11%

30. If an angle of a triangle remains unchanged but each of its two including sides is doubled, then the area becomes:
(a) 2 times (b) 3 times
(c) 4 times (d) 6 times

31. The solubilizations of organic material in each cell is controlled by the hydrolase released from:
(a) Peroxisomes (b) Leucoplasts
(c) lysosomes (d) Vacuoles

32. The cells of protective tissues are specialized in many ways which develop by the deposition of:
(a) Suberin (b) Tannin
(c) Cellulose (d) Pectin

33. The body is filled with haemocoel, in the phylum:
(a) Annelida (b) Porifera
(c) Arthopoda (d) Cnidaria

34. Fats are comparable with carbohydrates, as they have:
(a) Carbon and hydrogen atoms
(b) Carbon hydrogen and oxygen atoms
(c) Carbon Nitrogen and oxygen atoms
(d) Carbon, hydrogen and nitrogen atoms

35. Identify the vitamin which, as such is not available in vegetables:
(a) Ascorbic acid (b) Vitamin K
(c) Vitamin E (d) Vitamin A

36. The common method adopted for disinfectin of drinking water, employed in home appliances is by using filters and:
(a) UV-Radiation
(b) Chlorination
(c) Ozonisation
(d) Chlorination and ozonisation

37. Diet, rich in maize and, causes/ disbalance in Niacin because of its:
(a) Highter degree of absorption
(b) Lower degree of absorption
(c) Fixation
(d) Inactivation

38. The chemical method adopted for the control of weeds is by the spray of:
(a) Idole-3-acetic acid
(b) 2,4-dichlorophenoxyacetic acid
(c) Aluminium phosphate
(d) Malathion

39. Which one of the following may not be classified as pigment?
(a) Carotenoid (b) Phytochrome
(c) Cryptochrome (d) Hormone

40. The light reaction in photosynthesis leads to the production of:
(a) ATP and NADPH
(b) ATP and photolysis of water
(c) ATP, NADPH and photolysis of water
(d) ATP, NADH and photolysis of water

41. Rapid muscular activity result in the production of:
(a) Ethanol and energy
(b) Ethanol, water and energy
(c) Water and energy
(d) Ethanol, CO_2 and energy

42. Older parts of the roots exchange gases through:
(a) Root hairs (b) Lentils
(c) Epidermis (d) All of the above

43. The life span of R.B.C. is:
(a) 150 days (b) 120 days
(c) 100 days (d) 125 days

44. The function of the extracellular fluid, following towards the heats, is:
(a) Fight against infection
(b) Carry disgusted fat towards the tissue
(c) Return protein to the tissue
(d) All of the above

45. Neuron is the structural and functional unit of nervous system, passing the message in the form of:
(a) Chemicals
(b) Electrical and Chemical
(c) Electrical and hormonal
(d) Electrical , chemical and hormonal

46. Adenine and thymine bases of the two parallel strands of deoxyribosenucleic acid are paired by the presence of:
(a) Hydrogen bond
(b) Covalent bond
(c) Electrostatic force
(d) Coordinate bond

47. Name the hormone that is used for the senescence of fruits:
(a) Auxin (b) Gibberelin
(c) Ethylene (d) Abscissic acid

48. Salt water is an example of:
(a) Heterogeneous mixture
(b) An element
(c) Solution
(d) Compound

49. 4 g of oxygen will have:
(a) 0.125 mol of oxygen
(b) 1.25 mol of oxygen
(c) 12.5 mol of oxygen
(d) 125 mol of oxygen

50. Existence of neutrons was demonstrated by:
(a) Chadwick (b) J.J. Thompson
(c) Niels Bohr (d) Rutherford

51. The elements 'A' and 'B' have atomic numbers 12 and 17, respectively. Element 'A' reacts with element 'B' to from compound with molecular formula:
(a) AB (b) AB_2
(c) A_2B (d) A_2B_3

52. The atomic radius of Li, K, Rb, and Cs varies in the order:
(a) Li>K>Rb>Cs (b) K>Cs>Rb>Li
(c) Rb>Cs>K>Li (d) Cs>Rb>K>Li

53. The electron affinity of F, Cl, Br and I varies I the order
(a) F<Cl>Br>I (b) F<Cl<Br<I
(c) F>Cl>Br>I (d) F>Cl>Br<I

54. The elements 'W', 'X' 'Y; and 'Z' have atomic number of 4, 11, 13 and 15 respectively, which of these elements is/are s-block element/elements?
(a) 'W' and 'X' (b) 'X' and 'Y'
(c) 'W' and 'Z' (d) 'Z'

55. Which of the following molecules has polar covalent bond?

(a) Cl_2 (b) O_2
(c) HI (d) NaCl

56. Which of the following is an example of combination reaction?
(a) $2Mg(s)+O_2(g) \rightarrow 2MgO(s)$
(b) $Pb(s)+CuSO_4(aq) \rightarrow PbSO_4(aq)+Cu(s)$
(c) $BaCl_2(aq)+Na_2SO_4(aq) \rightarrow BaSO_4+NaCl(aq)$
(d) $ZnCO_3(s) \rightarrow ZnO(s)+CO_2(g)$

57. Which of the following metals is most reactive?
(a) Magnesium (b) Calcium
(c) Aluminium (d) Zinc

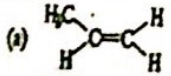
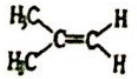
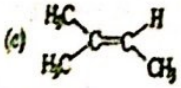
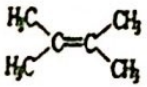
58. In electrolytic cell for refining of aluminium, the anode is made up of
(a) Pure aluminium
(b) Impure alumina
(c) Graphite
(d) Cryolite

59. Bronze is an alloy of:
(a) Copper and zinc
(b) Copper and tin
(c) Copper, nickel and chromium
(d) Copper and aluminium

60. Nylon is a:
(a) Polyamide (b) Polythene
(c) Polyester (d) Polypropene

61. Ethene reacts with water in presence of sulphuric acid to give:
(a) Ethanal
(b) Ethanol
(c) Ethyl sulphate
(d) Diethyl sulphate

62. Ethyne is prepared by the reaction of:
(a) Hydrogen and kerosene
(b) Sodium ethanoate and soda lime
(c) Water and ethane
(d) Hydrogen and ethane

63. Which of the following is an isomer of 2-butene?
(a) 
(b) 
(c) 
(d) 

64. The two planets nearest to Earth are:
(a) Mercury and Venus
(b) Mercury and Mars
(c) Jupiter and Venus
(d) Venus and Mars

65. Asteroids, the small rocky bodies, generally have their orbits between:
(a) Jupiter and Saturn
(b) Mars and Jupiter
(c) Mercury and Sun
(d) Uranus and Neptune

66. Read the following sttements:
(I)Acid rain damges mouments, buildings etc, due to corrosion
(II)Acid rain upgrades soil and increases agricultural productivity
(III)Acid rain is a result of air pollution
Which of the following is true:
(a) I and II (b) II and III
(c) I and III (d) I, II and III

67. Which of the following group consists of all non-biodegradable pollutions:
(a) Wood, sewage, plastics, mercury
(b) Insecticides , paper, radioactive waste, lead
(c) Arsenic, mercury, urine and faecal matter, aluminum
(d) Pesticides, aluminum, plastics, mercury

68. Read the following statements:
I. The greenhouse effect increases the temperature of Earth's atmosphere causes the greenhouse effect.
II. The presence of high concentration of carbon dioxide in the Earth's atmosphere.
III. The greenhouse effect occurs when the emitted solar radiation is not retained and escape out of the Earth's atmosphere:
Which of the following is true:

(a) I and II (b) II and III
(c) I and III (d) I, II and III

69. Examine the following groups of sources of energy available to us:
I. Petroleum and coal
II. Soar and tidal
III. Wind and hydelpower
Which of the following combination is pollution free source of energy
(a) I and II (b) II and III
(c) I and III (d) I, II and III

70. From the destructive distillation of coal we obtain:
(a) Methane, carbon dioxide and charcoal
(b) Coal tar, oxygen carbon dioxide, nitrogen oxides and charcoal
(c) Ammonia, hydrogen, charcoal and ash
(d) Coal tar, coal, gas, ammonia and coke

71. A car starts from rest and attains a speed of 36 km/h in 10 seconds. The distance traveled by the car in the above duration is
(a) 1000m (b) 500m
(c) 100m (d) 50m

72. For a particle which moves around a circular path of radius 'r' and takes time 't' to go a round the circle one, the velocity of the particle is:
(a) $2\pi r/t$ and the direction changes continuously
(b) $4\pi r/t$ and the direction always toward the centre of the circle
(c) $2\pi r/t$ and the direction is always in the direction of the opposite to the centre of the circle.
(d) $4\pi r/t$ and the direction is always in the direction of the tangent on the circle.

73. Consider the following statements regarding friction on bodies:
(I) Forcer of Friction decreases with the application of lubricant
(II) Rolling friction is lesser than the sliding friction
(III) We always try to minimize friction.
Which of the following is true:
(a) I and II (b) II and III
(c) I and III (d) I, II and III

74. For a hypothetical spherical body revolving around Earth with radius r=R/100 and mass m=M/100, where R and M are the radius and the mass of earth respectively, the acceleration due to the gravitational force exerted by the above body on its surface would be (taking g as the acceleration due to the gravity on Earth's surface):
(a) 1000g (b) 100g
(c) 10g (d) 0.1g

75. A body of mass 100 kg moving with a uniform velocity of 72 km/h has kinetic energy equal to:
(a) $1 \times 10^2 J$ (b) $2 \times 10^4 J$
(c) $3 \times 10^6 J$ (d) $4 \times 10^8 J$

76. Read the following statements:
I. The velocity of a fastest moving car is lesser than the velocity of sound
II. The velocity of light is greater than the velocity of sound in air
III. We do not hear echo in rooms smaller than 17m.
Which of the following is true:
(a) only I (b) Only II
(c) only III (d) I, II and III

77. For a concave mirror, the image of an object kept at the centre of curvature would be formed:
(a) Read and inverted, diminished at infinity
(b) Virtual and erect, enlarged, beyond the centre of curvature
(c) Real and inverted, same size, at the centre of curvature
(d) Virtual and erect, same size, behind of the mirror

78. Consider the following statements:
I. The electric charge is conserved: it can neither be created nor destroyed
II. Ohm's law defines resistance, a property of the current carrying conductor.
III. 1 kilowatt hour is equal to $3x\ 10^6 J$
Which of the following is true:
(a) I and II (b) Only II
(c) only III (d) I, II and III

79. The direction of the force on a current-carrying conductor in a magnetic field can be obtained:
(a) By Fleming's right hand rule.
(b) By Fleming's left hand rule
(c) By measuring only the value of the current flowing through the conductor.
(d) By noting the direction of the magnetic field only

80. Read the following statements:
I. The natural uranium contains about 99% U^{235}
II. In nuclear fission reaction of U^{235}, 5 fast neutrons are released.
III. The nuclear fusion reaction is accompanied by absorption of energy.
Which of the following is true:
(a) I and II (b) Only II
(c) only III
(d) None of the above statements

81. Which of the following persons has been honored with the Padam Vibhushan this year:
(a) R.K. Lakshman
(b) Irfan Habbib
(c) Shahrukh Khan
(d) Qurratulain Hyder

82. 'My Experiments with Truth' was written by:
(a) Mohammad Ali Jinnah
(b) Abul Kalam Azad
(c) Mohandas Karamchand Gandhi
(d) Motilal Nehru

83. Who is the leader of opposition in the Lok Sabha:
(a) Atal Bihari Vajpayee
(b) lal Krishna Advani
(c) Jaswant Singh
(d) Vankaiah Naidu

84. Which state of India receives the maximum average annual rainfall:
(a) Tamil Nadu (b) Maharasthtra
(c) Assam (d) Madhya Pradesh

85. A Tsunami is a powerful, often devastating sewage caused by:
(a) Submarine earthquake
(b) Submarine volcanic eruption
(c) Cyclonic winds
(d) (a) and (b) above

86. Pope John Paul II is succeeded by:
(a) Edward de Costa
(b) Ernest Schrodinger
(c) Emmanuel de Pedrola
(d) Joseph Ratzinger

87. Teacher's day is celebrated on:
(a) 5th May (b) 5th September
(c) 5th November (d) None of these

88. Which of the following agencies works for the well being of children:
(a) UNESCO (b) UNICEF
(c) WHO (d) UNICORN

89. Christopher Columbus discovered the New World:
(a) 1492 (b) 1498
(c) 1526 (d) None of these

90. Which country suffered the greatest loss of life and property in Tsunami disaster:
(a) Thailand (b) India
(c) Indonesia (d) Sri Lanka

91. The real name of the a Arab Scholar Avicenna is
(a) Al-Beruni (b) Al Razi
(c) Ibn Khaldun (d) Ibn Sina

92. The M.A.O. College become the Aligarh Muslim University in the year:
(a) 1930 (b) 1920
(c) 1921 (d) 1925

93. Urdu poetry which deals with death and sorrow in known as:
(a) Ghazal (b) Qasida
(c) Marsiya (d) Nazm

94. Musnhi Premchand's original writings were in:
(a) Sanskrit (b) Hindi
(c) Urdu (d) Both Hindi & Urdu

95. Which famous Urdu poet wrote 'Bang-e-Dara'
(a) Allama Iqbal
(b) Mirza Ghalib
(c) Faiz Ahmad Faiz
(d) Mir Taqi Mir

96. The Taj Mhal, built by the Mughal Emperor Shah Jahan represents:
(a) Islamic Architecture
(b) Indian Architecture
(c) Indo-Greek Architecture
(d) Indo-Persian Architecture

97. Tansen was a musician at the court of which Mughal emperor:
(a) Humayun (b) Akbar
(c) Jahangir (d) Shah Jahan

98. The Jama Masjid of Delhi was built by:
(a) Babar (b) Humyun
(c) Akbar (d) Shah Jahan

99. A 17th century book 'Kitab-e-Nauras' which praises Hindu and Muslim saints was written by :
(a) Baz Bahadur
(b) Ibrahim Adil Shah-I
(c) Ibrahim Adil Shah-II
(d) Amir Khusro

100. A true representative of Indo-Islamic poetry in the medieval period was:
(a) Amir Khusro
(b) Omar Khyyam
(c) Malik Mohammad Jaisi
(d) Kabir

ANSWERS - 2005-2006

1. (b)	2. (d)	3. (b)	4. (d)	5. (b)	6. (d)	7. (b)	8. (c)	9. (a)	10. (d)
11. (d)	12. (a)	13. (b)	14. (c)	15. (a)	16. (d)	17. (c)	18. (d)	19. (b)	20. (a)
21. (d)	22. (d)	23. (d)	24. (c)	25. (d)	26. (d)	27. (b)	28. (c)	29. (c)	30. (c)
31. (c)	32. (d)	33. (c)	34. (b)	35. (a)	36. (b)	37. (b)	38. (b)	39. (d)	40. (c)
41. (d)	42. (c)	43. (b)	44. (d)	45. (b)	46. (a)	47. (d)	48. (c)	49. (a)	50. (a)
51. (b)	52. (d)	53. (a)	54. (a)	55. (c)	56. (a)	57. (b)	58. (b)	59. (b)	60. (a)
61. (b)	62. (c)	63. (b)	64. (d)	65. (b)	66. (c)	67. (d)	68. (a)	69. (b)	70. (d)
71. (d)	72. (a)	73. (a)	74. (b)	75. (b)	76. (d)	77. (c)	78. (a)	79. (b)	80. (d)
81. (c)	82. (c)	83. (b)	84. (c)	85. (a)	86. (a)	87. (b)	88. (b)	89. (a)	90. (c)
91. (d)	92. (b)	93. (c)	94. (d)	95. (c)	96. (d)	97. (b)	98. (d)	99. (d)	100.(c)