1. Astronomical unit (AU) is distance between Earth and Sun. 1 AU =
   a) 1.496×10^8 Km
   b) 9.46×10^{12} Km
   c) 3.084×10^{13}K.m
   d) None

2. Who discovered electron?
   a) Thomson b) Goldstein
   c) Rutherford d) Chadwick

3. The magnitude of the sum of the two vectors is equal to the difference of their magnitudes. What is the angle between.the vectors?
   a) 0^0 b) 45^0
   c) 90^0 d) 180°

4. A particle is moving on a straight line path with constant acceleration directed along the direction of instantaneous velocity which of the following statement is true?
   a) Particle may reverse the direction of motion.
   b) Distance covered = magnitude of displacement.
   c) Average velocity is less than average speed.
   d) Average velocity = instantaneous velocity.

5. A ball is projected from the top of a tower at an angle 60° with the vertical. What happen to the vertical component of its velocity?
   a) Increases continuously.
   b) Decreases continuously.
   c) Remains unchanged.
   d) First decreases and then increases.

6. A particle moving along a circular path due to a centripetal force having constant magnitude is an example of motion with:
   a) Constant speed and velocity.
   b) Variable speed and velocity.
   c) Variable speed and constant velocity.
   d) Constant speed and variable velocity.

7. A rod of mass M and length L is lying on a horizontal table. The work done in making it stand on one end will be: g
   a) MgL b) MgL/2
   c) MgL/4 d) 2MgL

8. A body weights:
   a) Very slightly greater at night
   b) Very slightly less at night.
   c) Exactly equal at day & night.
   d) Zero at night.

9. Two vessels have different base area. They are filled with water to the same height. If the amount of water in one be 4 times that in the other, then the ratio of pressure on their bottom will be:

a) 16:1 b) 8:1
c) 4:1 d) 1:1

10. The speed of light in air is 3×10^8 m/s. What will be its speed in diamond whose refractive index is 2.4?
a) 3×10^8 mls b) 330 m/s
c) 1.25×10^8 m/s d) 224×10^8 m/s

11. Critical angle for water is:
a) 24° b) 49°
c) 42° d) 35°

12. The pressure of H_2 gas at a gas thermometer is 80cm at 0°C, 110cm at 100°C. At what temperature will it record 95cm pressure?
a) 50°C b) 75°C
c) 95°C d) 150°C

13. Heat required to raise the temperature a body through 1°C is known as:
a) Specific heat capacity
b) Water equivalent,
c) Molar specification
d) Thermal c aprtcity

14. The diameter of wire is reduced to half. Now the resistance changes by factor:
a) 2 b) 4
c) 8 d) 16

15. Which of the fore wing is called red planet?
a) Venus b) Mercury
c) Mars d) Jupiter

16. The waste material present in an ore is called
a) Flux b) Alloy
c) Gangue d) Slag

17. Vapour density of a gas is 22. Its molecular weight will be:
a) 33 b) 22
c) 44 d) 11

18. If 30g of Mg and 30 g of O_2 are reacted, then the residual mixture contains
a) 40g MgO + 20g O_2
b) 45g MgO+ 15g O_2
c) 50g MgO+ 10g O_2
d) 60g MgO only

19. Which of the following set of quantum number is not possible?
a) n = 2 l = 1 m = 0 s = +1/2
b) n = 2 l=2 m = +1 s = -1/2
c) n= 2 1=1 m = -1 s = +1/2
d) n = 2 1=1 m = 0 s = -1/2

20. Radioactivity was discovered by:

a) Henry Becquerel
b) Rutherford
c) J.J Thompson
d) Madam Curie

21. Which of the following expression at pressure represents Chlare's law?
a) $V \alpha 1/T$ b) $V \alpha 1/T^2$
c) $V\alpha T$ d) V=d

22. Solid CO_2 is an example of:
a) Ionic crystal b) Covalent crystal
c) Metallic crystral d) Molecular crystal

23. Which bond has maximum M.P. and B.P?
a) Ionic
b) Covalent
c) CO-ordinate covalent
d) Hydrogen bond

24. The atomic no. of an elemeet is 38. In which block do it lies?
a) s-block b) p-blcck
c) d-block d) f-block

25. During fermentation of glucose the enzyme used is:
a) Zymase b) Lipase
c) Invertase d) Amylase

26. What is the empirical formula of a hydrocarbon containing 75 % carbon?
a) C_2H_4 b) CH_4
c) C_3H_9 d) C_2H_6

27. Example of amphoteric oxide is:
a) SO_2 b) Na_2O
c) ZnO d) NO

28. Colour pigments can be separated by:
a) Filtration b) Distillation
c) Chromatography d) Sublimation

29. Which one is manufactured from sea weeds?
a) F_2 b) I_2
c) Cl_2 d) Br

30. These used in welding of iron or steel is:
a) Mechane b) Ethane
c) Ethylene d) Acetylene

31. A patent is generally advised to specially consume more meat, lentils, milk and egg in diet only when he/she suffers, from:
a) Rickets b) Kwashiworker
c) Anaemia d) Scurvey

32. Tetanus disease is:
a) Viral b) Bacterial
c) Fungal d) None

33. Kind of Epithelium in inner lining of blood vessels?
a) Cuboidal epithelium
b) Columnar
c) Ciliated columnar
d) Squammous epithelium

34. Which part of brain is involved in regulating body temperature?
a) Medulla oblongata
b) Cerebrum
c) Cerebellum
d) Hypothalamus

35. Antibiotic was coined by:
a) Pasteur b) Edward Jenner
c) Fleming d) Salman Waksman

36. Not a feaure of Annelida?
a) Closed circulatory system
b) Segmentation
c) Pseudocoelom
d) Ventral nerve cord

37. Evolutionary history of organism is:
a) Phylogeny b) Ancestry
c) Paleontology d) Ontogeny

38. HIV that caused AIDS 1st start destroying:
a) B-Lymphocytes b) Platelets
c) Leucocytes d) Helper T-cells

39. Blood calcium level is lowered by deficiency of:
a) Parathormone b) Calcitonin
c) Thyroxine d) Both b and c

40. 1st healthy mammal to be cloned is:
a) Molly sheep b) Dolly sheep
c) Polly sheep d) Monkey

41. Ribosome can also be called:
a) Microsome b) Oxyosome
c) Dictyosome d) Ribonucleotide

42. The first transgenic crop is:
a) Tobaccoo b) Wheat
c) Tomato d) sMaize

43. Tobacoo mosaic virus is:

a) Rod shaped b) Brick shaped
c) Spherical d) None

44. Bacterial DNA is identified as:
a) DNA only
b) DNA with histone
c) DNA without histone
d) DNA and RNA

45. Which is sensitive to SO_2 pollution?
a) Lichens b) Algae
c) Mosses d) Gymnosperms

46. Cause of motility in male gamete is:
a) Photo taxis b) Chemo taxis
c) Thermo taxis d) Thermotropism

47. Milk is purified by:
a) Fermentation b) Pasteurisation
c) Preservation d) Sterilisation

48. Pollution can bring change in:
a) Abiotic environment
b) Biotic environment
c) Both a and. b
d) Animals

49. BOD is:
a) Biological oxygen deficit
b) Biosphere oxygen demand
c) Biological oxygen demand
d) None

50. Which inn of cinchona is used as a drug?
a) Bark b) Leaf
c) Pericarp d) Endosperm

51. Set A is a proper subset of B if :
a. A-B $\subseteq$ A b. B$\subset\overline{A}$
c. A $\subset$ B d. A $\subset\overline{B}$

52. If A and B are two sets containing 10 and 20 distinct elements repetitively. The, the minimum number of elements in A$\cup$B is :
a. 30 b. 50
c. 40 d. 80

53. the value of $\begin{vmatrix} 1 & w & w^2 \\ w & w^2 & 1 \\ w^2 & 1 & w \end{vmatrix}$ *is*

a. w^2 b. -1

c. w d. 0

54. The sum of the series $S_n = 1^2+2^2+3^2+.....n^2$ is :

a. n(n+1) b. $\frac{n(n-1)(2n-1)}{6}$

c. $\frac{n(n+1)(2n+1)}{6}$ d. $\left(\frac{n(n+1}{2}\right)^2$

55. If 6,18,24,162 .....are in G.S. then common ration r is :

a. 12 b. 9

c. 3 d. 7

56. If $2Sin^2\theta+\sqrt{3}\ Cos\theta+1 = 0$, then θ = ……

a. 150^o b. 120^o

c. 180^o d. 90^o

57. Let F:R→R be defined by $f(x) = Sin\ X$ and g:R→R be defined by $g(x) = x^2$, then $gof(x)$ =

a. Sin^2x b. 2Sinx

c. $Sinx^2$ d. 2Cosx

58. If $Cos\theta+Sec\theta = 2$, then the value of $Sec^7\theta+Cos^5\theta$ =

a. 2 b. 1

c. 1/2 d. $\sqrt{2}$

59. If $4\ Sin^{-1}x+Cos^{-1}x = \pi$ then the value of x is:

a. 1 b. $\sqrt{3/2}$

c. $1/\sqrt{2}$ d. 1/2

60. Find $\frac{dy}{dx}$, If $x = at^2$, $y = 2at$.

a. t b. t^2

c. /t d. $1/t^2$

61. Find the derivative of e^{2x+3}

a. $2e^{2x}$ b. $2e^{2x+3}$

c. $2e^2$ d. $2e^{2x+6}$

62. For parallel or anti-parallel vectors θ is :

a. 0^o or 90^o b. 90^o or 180^o

c. 0^o or 180^o d. 180^o or 360^o

63. If $\vec{a} = \vec{\imath} +\vec{\jmath} -2\vec{k}$ and $\vec{b} = 2\vec{\imath} - \vec{\jmath} - \vec{k}$ are any two vectors. Find the angle between two.

a. $\pi/3$ b. $\pi/4$

c. $\pi/2$ d. none

64. For what value of k, $3x^2-4kxy+5y^2 = 0$ represents a pair of co-incident lines ?

a. $\pm\frac{\sqrt{7}}{2}$ b. $\pm\frac{\sqrt{15}}{4}$

c. $\pm\frac{\sqrt{7}}{4}$ d. $\pm\frac{\sqrt{15}}{2}$

65. The lines are real and distinct if :

a. $h^2>ab$ b. $h^2<ab$

c. $h^2 = ab$ d. none

66. The value of k for which the equation $2x^2-7xy+3y^2-5x-5y+k = 0$ represents a pair of straight lines ?

a. 4 b. -3

c. 2 d. 6

67. If $ax+by+c_1 = 0$ and $ax+by+c_2 = 0$ are two parallel lines, then distance between them is:

a. $\frac{|c_2+c_1|}{\sqrt{a^2+b^2}}$ b. $\frac{|c_2-c_1|}{\sqrt{a^2+b^2}}$

c. $\left|\frac{c_2-c_1}{\sqrt{a^2-b^2}}\right|$ d. none

68. The equation of tangent to circle $x^2+y^2+4x-6y-13 = 0$ at point (3,4) is :

a. $3x+4y = 17$ b. $2x-7y = 9$

c. $5x+y = 19$ d. $5x+3y = 1$

69. The staraight line $(x+y+1)+\lambda(2x-y-1) = 0$ is perpendicular to the line $2x+3y-8 = 0$, then λ =

a. 7 b. -5

c. 1 d. 3

70. If a polygon has same number of diagonals as it's sides, it is a :

a. pentagon b. Hexagon

c. Heptagon d. Octagon

71. A certain pump can drain a fuel 375 gallon tank in 15 minutes . At this rate , how many more minutes would it take to drain a full 600 gallon tank ?

a. 24 b. 18

c. 15 d. 9

72. From 1985 to 1990 , the berry production of bush x increased by 20% . From 1990 to 1995 , it is increased by 30% . What was percentage increased in berry production over the entire 10 years 1985 to 1995 ?

a. 50% b. 53%

c. 56% d. 60%

73. If $f(x) = x+2$ and $g(x) = x^3$, then $fog(1)$ is :

a. 2 b. 3

c. 1 d. 4

74. A business man marked the selling price of an article 20% above the cost price . If he sells the article at 10% discount on marked price , find the profit percentage ?

a. 8% b. 12%

c. 10% d. 14%

75. A women is 6 years younger to her husband and he is 5 times as old as his daughter. If daughter was 7 years old two years back, what is percentage of women?

a. 39 years b. 45 years

c. 50 years d. 35 years

76. $\int 7\sqrt{x^3}dx =$

a. $14x^{5/2}+c$ b. $14/5x^{5/2}+c$

c. $5/14x^{5/2}+c$ d. $7/2x^{5/2}+c$

77. $\int \frac{1}{\sqrt{x}}$ dx is :

a. $\log(\sqrt{x})+c$ b. $2x+c$

c. $2\sqrt{x}$ d. $2x^2+c$

78. In a building with 10 floors, the number of rooms in each floor is R, If each room has C chairs, total chairs in building is :

a. 10R+C b. 10R+10C

c. 10RC d. 10/RC

79. Solve for x : $= \frac{3x-1}{\sqrt{3x+1}} = \sqrt{3x-1}$

a. 1/3 b. 3

c. 1/2 d. 2

80. Area of triangle with sides x = 0, y = 0 and 4x+5y = 20 is :

a. 20 b. 10

c. 5 d. 1

81. His pocket has been picked. It means:

a) Picked his been his pocket

b) They have his pocket picked.

c) Someone has picked his pocket.

d) Picking has been done to his pocket.

82. More serious from the parent's point of view than the increasing expenditure on children's education is finding a good school. The more serious thing is:

a) The parent's point of view

b) finding a good school

c) Children's education

d) increasing education

83. Here's may report ----- it at last.

a) I finish b) I finished

c) I've finished d) I'm finished

84. Your parents are very upset with you and you are regretting over the wrong doing.

a) I wish they would understand me

b) I wish I could tell them the truth

c) I wish I hadn't disobeyed them

d) I wish they were happy

85. He gave up ……

a) Smoke b) to smoke

c) Smoking d) to smoke

86. The professor and psychologist…… come.

a) has b) have

c) has d) was

87. Where's Robert? …….. a shower?

a) Does he have b) Has he

c) Has fiant d) Is he having

88. An Englishman killed his mother for trying to save an Indian's life. The person trying to save the Indian's life…….

a) was an English woman
b) was saved
c) was Killed
d) was an Indian

89. I didn't use smoke in the past but these days I'm used to…….

a) Smoke b) smokes
c) Smoked d) smoking

90. Indirect speech of: She said. "Good bye, my friend."

a) She told her friends good bye.
b) She bade good bye to he friends.
c) She shouted good bye to her friends.
d) She shouted good bye to her ends.

91. Fate smiles…… him in all his ventures.

a) upon b) at
c) with d) for

92. The downfall of this dictatorial regime is …

a) imminent b) eminent
c) urgent d) optional

93. Unexpected change in somebody's fortune is called :

a) Vicissitude b) Verisimilitude
c) Fortunate d) Catastrophe

94. It's time to take tea. It means …….

a) tea should be taken
b) tea is to be taken
c) it's time for tea to be taken
d) tea should be taken now

95. When I looked round the door, the baby …… quietly.

a) is sleeping b) slept
c) was sleeping d) were sleeping

96. …… a party next Friday. We've sent out the invitations.

a) We had b) We have
c) We'll have d) We are having

97. By 2020, I….. Bachelor's in science.

a) complete
b) an completing
c) will complete
d) will have completed

98. Julia was out of breathe because ……

a) she had been running
b) She did run
c) she's been running
d) she's run

99. This house is …of the two .

a) the best b) the better that
c) the better d) better

100. At this time tomorrow……. Over the Pacific Ocean.

a. we flying b. we'll fly
c. we'll be flying d. we to fly

Answers

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