NEW STANDARD ACADEMY

Exam	NEET	Marks: 720
Date : 10-07-23	CLASS : 11TH	Time: 3:20 min.

Section-A
PHYSICS

1. The unit of power is
(a) Joule
(b) Joule per second only
(c) Joule per second and watt both
(d) Only watt

2. In $S = a + bt + ct^2$. S is measured in metres and t in *second*s. The unit of c is
(a) None
(b) m
(c) ms^{-1}
(d) ms^{-2}

3. If u_1 and u_2 are the units selected in two systems of measurement and n_1 and n_2 their numerical values, then
(a) $n_1 u_1 = n_2 u_2$
(b) $n_1 u_1 + n_2 u_2 = 0$
(c) $n_1 n_2 = u_1 u_2$
(d) $(n_1 + u_1) = (n_2 + u_2)$

4. If $x = at + bt^2$, where x is the distance travelled by the body in kilometres while t is the time in seconds, then the units of b are
(a) km/s
(b) $km-s$
(c) km/s^2
(d) $km-s^2$

5. The equation $\left(P + \dfrac{a}{V^2}\right)(V - b)$ constant. The units of a are
(a) $Dyne \times cm^5$
(b) $Dyne \times cm^4$
(c) $Dyne/cm^3$
(d) $Dyne/cm^2$

6. In C.G.S. system the magnitude of the force is 100 dynes. In another system where the fundamental physical quantities are kilogram, metre and minute, the magnitude of the force is
(a) 0.036
(b) 0.36
(c) 3.6
(d) 36

7. A physical quantity is measured and its value is found to be nu where $n =$ numerical value and $u =$ unit. Then which of the following relations is true
(a) $n \propto u^2$
(b) $n \propto u$
(c) $n \propto \sqrt{u}$
(d) $n \propto \dfrac{1}{u}$

8. The frequency of vibration f of a mass m suspended from a spring of spring constant K is given by a relation of this type $f = C m^x K^y$; where C is a dimensionless quantity. The value of x and y are
(a) $x = \dfrac{1}{2}, y = \dfrac{1}{2}$
(b) $x = -\dfrac{1}{2}, y = -\dfrac{1}{2}$
(c) $x = \dfrac{1}{2}, y = -\dfrac{1}{2}$
(d) $x = -\dfrac{1}{2}, y = \dfrac{1}{2}$

9. The velocity of water waves v may depend upon their wavelength λ, the density of water ρ and the acceleration due to gravity g. The method of dimensions gives the relation between these quantities as
(a) $v^2 \propto \lambda g^{-1} \rho^{-1}$
(b) $v^2 \propto g \lambda \rho$
(c) $v^2 \propto g \lambda$
(d) $v^2 \propto g^{-1} \lambda^{-3}$

10. The equation of a wave is given by
$$Y = A \sin \omega \left(\dfrac{x}{v} - k\right)$$

where ω is the angular velocity and v is the linear velocity. The dimension of k is

(a) LT (b) T

(c) T^{-1} (d) T^2

11. If the time period (T) of vibration of a liquid drop depends on surface tension (S), radius (r) of the drop and density (ρ) of the liquid, then the expression of T is

(a) $T = k\sqrt{\rho r^3 / S}$ (b) $T = k\sqrt{\rho^{1/2} r^3 / S}$

(c) $T = k\sqrt{\rho r^3 / S^{1/2}}$ (d) None of these

12. Density of a liquid in CGS system is 0.625 g/cm^3. What is its magnitude in SI system

(a) 0.625   (b) 0.0625

(c) 0.00625   (d) 625

13. The percentage errors in the measurement of mass and speed are 2% and 3% respectively. How much will be the maximum error in the estimation of the kinetic energy obtained by measuring mass and speed

(a) 11%   (b) 8%

(c) 5%   (d) 1%

14. Error in the measurement of radius of a sphere is 1%. The error in the calculated value of its volume is

(a) 1%   (b) 3%

(c) 5%   (d) 7%

15. The mean time period of *second*'s pendulum is 2.00s and mean absolute error in the time period is 0.05s. To express maximum estimate of error, the time period should be written as

(a) $(2.00 \pm 0.01)\, s$ (b) $(2.00 + 0.025)\, s$

(c) $(2.00 \pm 0.05)\, s$ (d) $(2.00 \pm 0.10)\, s$

16. A body travels uniformly a distance of $(13.8 \pm 0.2)\, m$ in a time (4.0 ± 0.3) s. The velocity of the body within error limits is

(a) $(3.45 \pm 0.2)\, ms^{-1}$ (b) $(3.45 \pm 0.3)\, ms^{-1}$

(c) $(3.45 \pm 0.4)\, ms^{-1}$ (d) $(3.45 \pm 0.5)\, ms^{-1}$

17. The radius of a sphere is $(5.3 \pm 0.1)\, cm$. The percentage error in its volume is

(a) $\dfrac{0.1}{5.3} \times 100$ (b) $3 \times \dfrac{0.1}{5.3} \times 100$

(c) $\dfrac{0.1 \times 100}{3.53}$ (d) $3 + \dfrac{0.1}{5.3} \times 100$

18. A physical quantity P is given by $P = \dfrac{A^3 B^{\frac{1}{2}}}{C^{-4} D^{\frac{3}{2}}}$. The quantity which brings in the maximum percentage error in P is

(a) A (b) B

(c) C (d) D

19. A student measured the diameter of a small steel ball using a screw gauge of least count 0.001 cm. The main scale reading is 5 mm and zero of circular scale division coincides with 25 divisions above the reference level. If screw gauge has a zero error of -0.004 cm, the correct diameter of the ball is

(a) 0.521 cm   (b) 0.525 cm

(c) 0.053 cm   (d) 0.529 cm

20. If energy (E), velocity (V) and time (T) are chosen as the fundamental quantities, the dimensional formula of surface tension will be

(a) $[EV^{-2}T^{-2}]$ (b) $[E^{-2}V^{-1}T^{-3}]$

(c) $[EV^{-2}T^{-1}]$ (d) $[EV^{-1}T^{-2}]$

21. If force (F), velocity (V) and time (T) are taken as fundamental units, then the dimensions of mass are

(a) $[FVT^{-1}]$ (b) $FVT^{-2}]$

(c) $[FV^{-1}T^{-1}]$ (d) $[FVT]$

22. In an experiment four quantities a, b, c and d are measured with percentage error 1%, 2%, 3% and 4% respectively. Quantity P is calculated as follows $P = \dfrac{a^3 b^2}{cd}$. % error in P is

(a) 7%   (b) 4%   (c) 14%   (d) 10%

23. In a Screw Gauge, fifth division of the circular scale coincides with the reference line when the ratchet is closed. There are 50 divisions on the circular scale, and the main scale moves by 0.5mm on a complete rotation. For a particular observation the reading on the main scale is 5mm and the 20th division of the circular scale coincides with reference line. Calculate the true reading.

(a) 5.00mm   (b) 5.25mm

(c) 5.15mm   (d) 5.20mm

24. Assertion A: If in five complete rotations of the circular scale, the distance travelled on main scale of the screw gauge is 5mm and there are 50 total divisions on circular scale, then least count is 0.001cm.

Reason R :

$$\text{Least Count} = \frac{\text{Pitch}}{\text{Total divisions on circular scale}}$$

In the light of the above statements, choose the most appropriate answer from the options given below :

(a) A is not correct but R is correct.

(b) Both A and R are correct and R is the correct explanation of A.

(c) A is correct but R is not correct.

(d) Both A and R are correct and R is NOT the correct explanation of A.

25. With the usual notations, the following

equation $S_t = u + \dfrac{1}{2}a(2t-1)$ is

(a) Only numerically correct

(b) Only dimensionally correct

(c) Both numerically and dimensionally correct

(d) Neither numerically nor dimensionally correct

26. The vector projection of a vector $3\hat{i} + 4\hat{k}$ on y-axis is

    (a) 5   (b) 4

    (c) 3   (d) Zero

27. If a particle moves from point P (2,3,5) to point Q (3,4,5). Its displacement vector be

(a) $\hat{i} + \hat{j} + 10\hat{k}$ (b) $\hat{i} + \hat{j} + 5\hat{k}$

(c) $\hat{i} + \hat{j}$ (d) $2\hat{i} + 4\hat{j} + 6\hat{k}$

28. A force of 5 N acts on a particle along a direction making an angle of 60° with vertical. Its vertical component be

(a) 10 N (b) 3 N

(c) 4 N (d) 2.5 N

29. If $A = 3\hat{i} + 4\hat{j}$ and $B = 7\hat{i} + 24\hat{j}$, the vector having the same magnitude as B and parallel to A is

(a) $5\hat{i} + 20\hat{j}$ (b) $15\hat{i} + 10\hat{j}$

(c) $20\hat{i} + 15\hat{j}$ (d) $15\hat{i} + 20\hat{j}$

30. The vector that must be added to the vector $\hat{i} - 3\hat{j} + 2\hat{k}$ and $3\hat{i} + 6\hat{j} - 7\hat{k}$ so that the

resultant vector is a unit vector along the y-axis is

(a) $4\hat{i} + 2\hat{j} + 5\hat{k}$ (b) $-4\hat{i} - 2\hat{j} + 5\hat{k}$

(c) $3\hat{i} + 4\hat{j} + 5\hat{k}$ (d) Null vector

31. The expression $\left(\dfrac{1}{\sqrt{2}}\hat{i} + \dfrac{1}{\sqrt{2}}\hat{j}\right)$ is a

(a) Unit vector   (b)Null vector

(c)Vector of magnitude $\sqrt{2}$ (d)none

32. Given vector $\vec{A} = 2\hat{i} + 3\hat{j}$, the angle between $\vec{A}$ and y-axis is

(a) $\tan^{-1}3/2$ (b) $\tan^{-1}2/3$

(c) $\sin^{-1}2/3$ (d) $\cos^{-1}2/3$
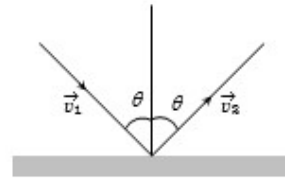
33. The angle between the two vectors $\vec{A} = 3\hat{i} + 4\hat{j} + 5\hat{k}$ and $\vec{B} = 3\hat{i} + 4\hat{j} + 5\hat{k}$ is

(a) 60°   (b) Zero

(c) 90°   (d) None of these

34. An object of m kg with speed of vm/s strikes a wall at an angle θ and rebounds at the same speed and same angle. The magnitude of the change in momentum of the object will be

(a) $2mv\cos\theta$ (b) $2mv\sin\theta$

(c) 0   (d) $2mv$

35. The sum of two forces acting at a point is 16 N. If the resultant force is 8 N and its direction is perpendicular to minimum force then the forces are

(a) 6 N and 10 N (b) 8 N and 8 N

(c) 4 N and 12 N (d) 2 N and 14 N

36. A plane is revolving around the earth with a speed of 100 km/hr at a constant height from the surface of earth. The change in the velocity as it travels half circle is

(a)200 km/hr (b) 150 km/hr

(c) $100\sqrt{2}$ km/hr (d) 0

37. If a vector $2\hat{i} + 3\hat{j} + 8\hat{k}$ is perpendicular to the vector $4\hat{j} - 4\hat{i} + \alpha\hat{k}$. Then the value of α is

(a) -1 (b) $\dfrac{1}{2}$

(c) $-\frac{1}{2}$ (d) 1

38. If two vectors $2\hat{i} + 3\hat{j} - \hat{k}$ and $-4\hat{i} - 6\hat{j} - \lambda\hat{k}$ are parallel to each other then value of λ be

(a) 0 (b) 2

(c) 3 (d) 4

39. A particle moves from position $3\hat{i} + 2\hat{j} - 6\hat{k}$ to $14\hat{i} + 13\hat{j} + 9\hat{k}$ due to a uniform force of $(4\hat{i} + \hat{j} + 3\hat{k})N$. If the displacement in meters then work done will be

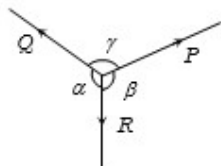(a) $100\,J$ (b) $200\,J$

(c) $300\,J$ (d) $250\,J$

40. If $\vec{A} \times \vec{B} = \vec{C}$, then which of the following statements is wrong

(a) $\vec{C} \perp \vec{A}$ (b) $\vec{C} \perp \vec{B}$

(c) $\vec{C} \perp (\vec{A} + \vec{B})$ (d) $\vec{C} \perp (\vec{A} \times \vec{B})$

41. Two adjacent sides of a parallelogram are represented by the two vectors $\hat{i} + 2\hat{j} + 3\hat{k}$ and $3\hat{i} - 2\hat{j} + \hat{k}$. What is the area of parallelogram

(a) 8 (b) $8\sqrt{3}$

(c) $3\sqrt{8}$ (d) 192

42. A body is in equilibrium under the action of three coplanar forces P, Q and R as shown in the figure. Select the correct statement

(a) $\dfrac{P}{\sin\alpha} = \dfrac{Q}{\sin\beta} = \dfrac{R}{\sin\gamma}$

(b) $\dfrac{P}{\cos\alpha} = \dfrac{Q}{\cos\beta} = \dfrac{R}{\cos\gamma}$

(c) $\dfrac{P}{\tan\alpha} = \dfrac{Q}{\tan\beta} = \dfrac{R}{\tan\gamma}$

(d) $\dfrac{P}{\sin\beta} = \dfrac{Q}{\sin\gamma} = \dfrac{R}{\sin\alpha}$

43. A person aiming to reach the exactly opposite point on the bank of a stream is swimming with a speed of 0.5 m/s at an angle of 120^0 with the direction of flow of water. The speed of water in the stream is

(a) 1 m/s (b) 0.5 m/s

(c) 0.25 m/s (d) 0.433 m/s

44. The vectors from origin to the points A and B are $\vec{A} = 3\hat{i} - 6\hat{j} + 2\hat{k}$ and $\vec{B} = 2\hat{i} + \hat{j} - 2\hat{k}$ respectively. The area of the triangle OAB be

(a) $\frac{5}{2}\sqrt{17}$ sq.unit (b) $\frac{2}{5}\sqrt{17}$ sq.unit

(c) $\frac{3}{5}\sqrt{17}$ sq.unit (d) $\frac{5}{3}\sqrt{17}$ sq.unit

45. A metal sphere is hung by a string fixed to a wall. The sphere is pushed away from the wall by a stick. The forces acting on the sphere are shown in the second diagram. Which of the following statements is wrong

(a) $P = W\tan\theta$

(b) $\vec{T} + \vec{P} + \vec{W} = 0$

(c) $T^2 = P^2 + W^2$

(d) $T = P + W$
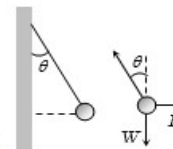
Section-B
CHEMISTRY

46. 74.5 g of a metallic chloride contain 35.5 g of chlorine. The equivalent weight of the metal is

(a) 19.5 (b) 35.5

(c) 39.0 (d) 78.0

47. 7.5 grams of a gas occupy 5.8 litres of volume at STP the gas is

(a) NO (b) N_2O

(c) CO (d) CO_2

48. Equivalent weight of crystalline oxalic acid is

(a) 30 (b) 63

(c) 53 (d) 45

49. The equivalent weight of $MnSO_4$ is half its molecular weight when it is converted to

(a) Mn_2O_3 (b) MnO_2

(c) MnO_4 (d) MnO_4^{2-}

50. The molecular weight of a gas is 45. Its density at STP is

(a) 22.4 (b) 11.2

(c) 5.7 (d) 2.0

51. How many molecules are present in one gram of hydrogen

(a) 6.02×10^{23} (b) 3.01×10^{23}

(c) 2.5×10^{23} (d) 1.5×10^{23}

52. The percentage of oxygen in $NaOH$ is

(a) 40 (b) 60

(c) 8 (d) 10

53. The percentage of nitrogen in urea is about

(a) 46 (b) 85

(c) 18 (d) 28

54. A compound (80 g) on analysis gave C = 24 g, H = 4 g, O = 32 g. Its empirical formula is

(a) $C_2H_2O_2$ (b) C_2H_2O

(c) CH_2O_2 (d) CH_2O

55. In which of the following pairs of compounds the ratio of *C, H* and *O* is same

(a) Acetic acid and methyl alcohol

(b) Glucose and acetic acid

(c) Fructose and sucrose

(d) All of these

56. The electron is

(a) α-ray particle (b) β-ray particle

(c) Hydrogen ion (d) Positron

57. The atomic weight of an element is double its atomic number. If there are four electrons in $2p$ orbital, the element is

(a) C (b) N

(c) O (d) Ca

58. In the nucleus of $_{20}Ca^{40}$ there are

(a) 40 protons and 20 electrons

(b) 20 protons and 40 electrons

(c) 20 protons and 20 neutrons

(d) 20 protons and 40 neutrons

59. The atomic number of an element having the valency shell electronic configuration $4s^2 4p^6$ is

(a) 35 (b) 36

(c) 37 (d) 38

60. Isoelectronic species are

(a) K^+, Cl^- (b) Na^+, Cl^-

(c) Na, Ar (d) Na^+, Ar

61. Which of the following oxides of nitrogen is isoelectronic with CO_2

(a) NO_2 (b) N_2O

(c) NO (d) N_2O_2

62. The atomic number of an element is always equal to

(a) Atomic weight divided by 2

(b) Number of neutrons in the nucleus

(c) Weight of the nucleus

(d) Electrical charge of the nucleus

63. CO_2 is isostructural with

(a) $SnCl_2$ (b) SO_2

(c) $HgCl_2$ (d) All the above

64. The hydride ions (H^-) are isoelectronic with

(a) Li (b) He^+

(c) He (d) Be

65. The number of electrons in the nucleus of C^{12} is

(a) 6 (b) 12

(c) 0 (d) 3

66. Number of unpaired electrons in inert gas is

(a) Zero (b) 8

(c) 4 (d) 18

67. Be^{2+} is isoelectronic with

(a) Mg^{2+} (b) Na^+

(c) Li^+ (d) H^+

68. The nitride ion in lithium nitride is composed of

(a) 7 protons + 10 electrons

(b) 10 protons + 10 electrons

(c) 7 protons + 7 protons

(d) 10 protons + 7 electrons

69. Which of the following is not isoelectronic

(a) Na^+ (b) Mg^{2+}

(c) O^{2-} (d) Cl^-

70. Iso-electronic species is

(a) F^-, O^{-2} (b) F^-, O

(c) F^-, O^+ (d) F^-, O^{+2}

71. An element have atomic weight 40 and it's electronic configuration is $1s^2 2s^2 2p^6 3s^2 3p^6$. Then its atomic number and number of neutrons will be

(a) 18 and 22 (b) 22 and 18

(c) 26 and 20 (d) 40 and 18

72. Which one of the following groupings represents a collection of isoelectronic species

(a) Na^+, Ca^{2+}, Mg^{2+} (b) N^{3-}, F^-, Na^+

(c) Be, Al^{3+}, Cl^- (d) Ca^{2+}, Cs^+, Br

73. Which of the following are isoelectronic and isostructural $NO_3^-, CO_3^{2-}, ClO_3^-, SO_3$

(a) NO_3^-, CO_3^{2-} (b) SO_3, NO_3^-

(c) ClO_3^-, CO_3^{2-} (d) CO_3^{2-}, SO_3

74. The number of neutron in tritium is

(a) 1 (b) 2

(c) 3 (d) 0

75. The atomic number of an element is 35. What is the total number of electrons present in all the p-orbitals of the ground state atom of that element
  (a) 6   (b) 11
  (c) 17   (d) 23

76. Rutherford's experiment on scattering of particles showed for the first time that the atom has
  (a) Electrons   (b) Protons
  (c) Nucleus   (d) Neutrons

77. Rutherford's scattering experiment is related to the size of the
  (a) Nucleus   (b) Atom
  (c) Electron   (d) Neutron

78. Rutherford's alpha particle scattering experiment eventually led to the conclusion that
  (a) Mass and energy are related
  (b) Electrons occupy space around the nucleus
  (c) Neutrons are buried deep in the nucleus
  (d) The point of impact with matter can be precisely determined

79. Bohr's model can explain
  (a) The spectrum of hydrogen atom only
  (b) Spectrum of atom or ion containing one electron only
  (c) The spectrum of hydrogen molecule
  (d) The solar spectrum

80. When α-particles are sent through a thin metal foil, most of them go straight through the foil because (one or more are correct)
  (a) Alpha particles are much heavier than electrons
  (b) Alpha particles are positively charged
  (c) Most part of the atom is empty space
  (d) Alpha particles move with high velocity

81. When an electron jumps from L to K shell
  (a) Energy is absorbed
  (b) Energy is released
  (c) Energy is sometimes absorbed and sometimes released
  (d) Energy is neither absorbed nor released

82. Which one of the following is not the characteristic of Planck's quantum theory of radiation
  (a) The energy is not absorbed or emitted in whole number or multiple of quantum
  (b) Radiation is associated with energy
  (c) Radiation energy is not emitted or absorbed conti- nuously but in the form of small packets called quanta
  (d) This magnitude of energy associated with a quantum is proportional to the frequency

83. The spectrum of He is expected to be similar to
  (a) H (b) Li^+
  (c) Na (d) He^+

84. Energy of orbit
  (a) Increases as we move away from nucleus
  (b) Decreases as we move away from nucleus
  (b) Remains same as we move away from nucleus
  (d) None of these

85. Bohr model of an atom could not account for
  (a) Emission spectrum
  (b) Absorption spectrum
  (c) Line spectrum of hydrogen
  (d) Fine spectrum

86. Electron occupies the available orbital singly before pairing in any one orbital occurs, it is
  (a) Pauli's exclusion principle
  (b) Hund's Rule
  (c) Heisenberg's principle
  (b) Prout's hypothesis

87. When an electron jumps from lower to higher orbit, its energy
  (a) Increases   (b) Decreases
  (c) Remains the same   (d) None of these

88. Which of the following statements does not form part of Bohr's model of the hydrogen atom
  (a) Energy of the electrons in the orbit is quantized
  (b) The electron in the orbit nearest the nucleus has the lowest energy
  (c) Electrons revolve in different orbits around the nucleus

(d) The position and velocity of the electrons in the orbit cannot be determined simultaneously

89. The postulate of Bohr theory that electrons jump from one orbit to the other, rather than flow is according to
    (a) The quantisation concept
    (b) The wave nature of electron
    (c) The probability expression for electron
    (d) Heisenberg uncertainty principl

90. What is the packet of energy called
    (a) Electron   (b) Photon
    (c) Positron   (d) Proton

Section-C
BIOLOGY

91. Reproduction is synonymous with growth in which of the following set of organisms?
    (a) Bacteria, unicellular algae and Amoeba
    (b) Bacteria, Amoeba and fungi
    (c) Unicellular algae and fungi
    (d) Unicellular algae and filamentous algae

92. Which of the following characteristics is not a defining character of living organisms?
    (a) Growth
    (b) Growth and reproduction
    (c) Reproduction
    (d) Growth and metabolism

93. Metabolism can be best defined as
    (a) the process in which a chemical is formed inside the body
    (b) the process in which a chemical is destroyed inside the body
    (c) the sum total of all chemical reactions occurring in the body
    (d) a complex construction process only

94. Biodiversity can be best defined as
    (a) occurrence of the number and types of organisms
    (b) species and ecosystem of a region
    (c) variety of life in an ecosystem
    (d) totality of genes, species and ecosystem of a given region

95. Which is first step in taxonomy?
    (a) Description of the organism
    (b) Identification of the organism
    (c) Nomenclature of the organism
    (d) Classification of the organism

96. Organisms are given scientific names because
    (a) it ensures that each organism has only one name
    (b) it ensures that no name is used twice
    (c) it ensures desired name for the organisms
    (d) Both (a) and (b)

97. Which of the following is against the rules of ICBN?
    (a) Handwritten scientific names should be underlined
    (b) Every species should have a generic name and a specific epithet
    (d) Scientific names are in Latin and should be italicized
    (e) Generic and specific names should be written starting with small letters

98. Select the correctly written scientific name of mango which was first described by Carolus Linnaeus.

    (a) Mangiferaindica Linn
    (b) Mangiferaindica
    (c) MangiferaIndica
    (d) Mangiferaindica Car. Linn.

99. Ascending or descending arrangement of taxonomic categories is known as
    (a) classification   (b) key
    (c) taxonomy   (d) hierarchy

100. A taxon is a
    (a) group of related species
    (b) group of related families
    (c) type of living organisms
    (d) taxonomic group of any ranking

101. What is the basic unit of classification?
    (a) Family   (b) Order
    (c) Species   (d) None of these

102. In Solanumtuberosum, first and second words stand for, respectively
    (a) genus, generic name
    (b) specific epithet, species
    (c) specific name and generic name
    (d) genus and species

103. Which one of the following categories contains the least similar characteristics?
    (a) Class   (b) Order
    (c) Family   (d) Division

104. Sapindales represents one of the taxonomic category of mango. The similar taxonomic categroy of man is
    (a) Mammalia   (b) Chordata
    (c) Primata   (d) None of these

105. The housefly belongs to which family in taxonomical classification?
(a) Musca
(b) Diptera
(c) Muscidae
(d) Insecta

106. The Indian Botanical Garden is located at
(a) Howrah
(b) London
(c) Lucknow
(d) Kew

107. The contrasting characteristics generally in a pair used for identification of animals in a taxonomic key are referred to as
(a) lead
(b) couplet
(c) doublet
(d) alternate

108. What is true about manual?
(a) It is a list that enumerates all species
(b) It is a book containing information for identification of names of species in a particular area
(c) It is based on similarities and dissimilarities
(d) Both (a) and (b)

109. Match the following columns.

Column I	Column II
A. Family	1. *tuberosum*
B. Kingdom	2. Polymoniales
C. Order	3. *Solanum*
D. Species	4. Plantae
E. Genus	5. Solanaceae

Codes

   A B C D E
(a) 5 4 2 1 3
(b) 5 4 1 3 2
(c) 1 2 3 5 4
(d) 2 1 3 4 5

110. In five kingdom system of classification of RH Whittaker, how many kingdoms contain eukaryotes?
(a) Four kingdoms
(b) One kingdom
(c) Two kingdoms
(d) Three kingdoms

111. Cyanobacteria are classified under which of the following kingdom?
(a) Protista
(b) Monera
(c) Algae
(d) Plantae

112. Among the following, which one is the most abundant group of microorganisms?
(a) Algae
(b) Viruses
(c) Protists
(d) Bacteria

113. Which of the following conditions would be favoured by thermoacidophiles?
(a) Hot and alkaline
(b) Snow and acidic
(c) Hot and sulphur spring
(d) Gut of cows

114. The primitive prokaryotes responsible for the production of biogas from the dung of ruminant animals, nclude the
(a) thermoacidophiles
(b) methanogens
(c) eubacteria
(d) halophiles

115. Methanogens belong to
(a) eubacteria
(b) archaebacteria
(c) dinoflagellates
(d) slime moulds

116. Identify the diagram of heterocyst
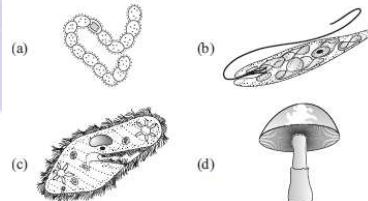
117. Nostocand Anabaena belong to
(a) parasitic bacteria
(b) archaebacteria
(c) cyanobacteria
(d) coccibacteria

118. Which of the following bacteria play an important role in the recycling of nutrients like nitrogen, hosphorus, iron and sulphur?
(a) Chemoheterotrophic bacteria
(b) Chemosynthetic autotrophic bacteria
(c) Parasitic bacteria
(d) Saprophytic bacteria

119. Citrus canker is a
(a) viral disease
(b) bacterial disease
(c) fungal disease
(d) protozoan disease

120. Which among the following are the smallest living cells, known without a definite cell wall, pathogenic to lants as well as animals and can survive without oxygen?
(a) Bacillus
(b) Pseudomonas
(c) Mycoplasma
(d) Nostoc

121. Mycoplasma are classified under which of the following kingdoms?
(a) Animalia
(b) Protista
(c) Monera
(d) Fungi

**122.** Which of the following is not a feature of Protista?
(a) Protists are prokaryotic
(b) Some protists have cell walls
(c) Mode of nutrition is both autotrophic and heterotrophic
(d) Body organisation is cellular

123. Which of the following kingdoms have no welldefined boundaries?
(a) Plantae
(b) Protista
(c) Monera
(d) Algae

124. Red tides in warm coastal water develop due to the presence of

(a) dinoflagellates   (b) euglenoid forms
(c) diatoms and desmids (d) slime moulds

125. Which group of organisms is represented by the given figure?
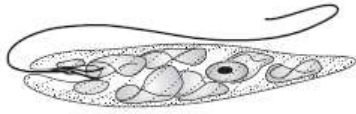

    (a) Dinoflagellates   (b) Protozoans
    (c) Slime mould   (d) Euglenoids

126. Slime moulds are
(a) pathogenic   (b) parasite
(c) saprophyticprotists (d) autotrophic

127. The free-living thalloid body of the slime mould is known as
(a) protonema   (b) plasmodium
(c) fruiting body   (d) mycelium

128. Which of the following groups belong to protozoans?
  (a) Amoeboid, flagellates, ciliates, sporozoans
  (b) Diatoms, amoeboid, ciliates, sporozoans
  (c) Desmids, ciliates, flagellates, amoebiod
  (d) Dinoflagellates, ciliates, Plasmodium, amoeboid

129. Flagellate protozoans are
(a) free-living only
(b) parasites only
(c) either free-living or parasites
(d) saprophytes

130. Which of the following is a flagellated protozoan?
(a) Amoeba   (b) Entamoeba
(c) Plasmodium (d) Trypanosoma

131. Paramecium is an aquatic and actively moving organism due to the presence of
(a) pseudopodia   (b) false feet
(c) thousands of cilia (d) flagella

132. Mycorrhizae are mutualistic and symbiotic associations between
(a) fungi and vascular plants
(b) fungi and non-vascular plants
(c) fungi and roots of higher plants
(d) fungi and bryophytes

133. In fungi, karyogamy is the fusion of two
  (a) gametes   (b) nuclei
  (c) cells   (d) cytoplasm

134. Which of the following is the correct sequence of
Class→ Mycelium→ Fruiting body observed in thekingdom–Fungi?
  (a) Phycomycetes→ Septate, coenocytic→ Not present

(b) Ascomycetes→ Aseptate and branched→ Ascocarp
(c) Basidiomycetes→ Aseptate and branched→ Basidiocarp
(d) Deuteromycetes→ Septate and branched→ Not present

135. Dikaryophase of fungus occurs in
  (a) Ascomycetes and Basidiomycetes
  (b) Phycomycetes and Ascomycetes
  (c) Phycomycetes and Basidiomycetes
  (d) Basidiomycetes and Deuteromycetes

136. Which of the following classes consists of coenocytic, multinucleate and aseptate mycelium?
(a) Basidiomycetes   (b) Ascomycetes
(c) Phycomycetes   (d) Deuteromycetes

137. Phycomycetes are most commonly found as
(a) obligate parasite
(b) obligate saprophyte
(c) coprophilous component
(d) Both (a) and (b)

138. Yeast and Penicilliumare the examples of class
(a) Phycomycetes   (b) Ascomycetes
(c) Deuteromycetes (d) Basidiomycetes

139. Which of the following fungus is used extensively in biochemical and genetic work?
(a) Neurospora (b) Mucor
(c) Rhizopus   (d) Aspergillus

140. Which of the following are the commonly known forms of Basidiomycetes?
(a) Mushrooms   (b) Puffball
(c) Bracket fungi   (d) All of these

141. In Basidiomycetes, the mycelium is
(a) branched and aseptate (b) branched and septate
(c) unbranched and septate (d) None of these

142. The imperfect fungi, which are decomposers of litter and help in mineral cycling belong to
(a) Deuteromycetes (b) Basidiomycetes
(c) Phycomycetes   (d) None of these

143. Sexual reproduction is present in all fungi classes,except
  (a) Ascomycetes (b) Phycomycetes
  (c) Basidiomycetes (d) Deuteromycetes

144. Select the incorrect match.
  (a) Morels and truffles — Phycomycetes

(b) Mushrooms and puffballs — Basidiomycetes

(c) Smut and rust — Basidiomycetes

(d) Bread mould — Phycomycetes

145. Tobacco mosaic virus is
- (a) spherical
- (b) rod-shaped
- (c) cuboidal
- (d) ova

146. Given below is the diagram of a virus. In which one of the options, all the three *A, B* and *C* (name of the virus) are correct?
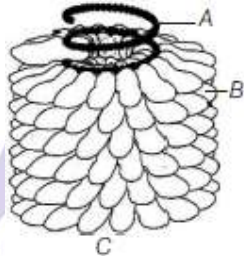

- (a) A–RNA, B–Capsomere, C–Tobacco mosaic virus
- (b) A–DNA, B–Capsid, C–Bacteriophage
- (c) A–RNA, B–Capsid, C–Tobacco mosaic virus
- (d) A–DNA, B–Capsid, C–Bacteriophage

147. The subunit of capsid is called
- (a) capsomere
- (b) core
- (c) nucleoside
- (d) None of these

148. Viruses are also known as
- (a) nucleoprotein particles
- (b) virion
- (c) lipoprotein particles
- (d) core

149. Bacteriophages are
- (a) bacteria that attack viruses
- (b) viruses that attack bacteria
- (c) free-living viruses
- (d) free-living bacteria

150. Identify the label *A*, *B*, *C* and *D* in the following figure.
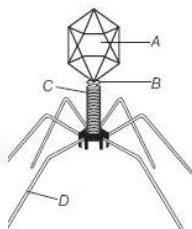
- (a) A–Head, B–Collar, C–Sheath, D–Tail fibres
- (b) A–Collar, B–Head, C–Sheath, D–Tail fibres
- (c) A–Head, B–Collar, C–Tail fibres, D–Sheath

- (d) A–Collar, B–Tail fibres, C–Head, D–Sheath

151. A new infectious agent that is smaller than virus is
- (a) prion
- (b) viroid
- (c) bacteria
- (d) mycoplasma

152. Lichens are mutualistic and symbiotic associations between
- (a) mycobiont and virus
- (b) mycobiont and phycobiont
- (c) mycobiont and root of higher plants
- (d) None of these

153. Consider the following statements about mycoplasma. Which of the statement given below is incorrect?
- (a) They are pleomorphic bacteria, which lack cell wall
- (b) Mycoplasma is the smallest living organism
- (c) They cannot survive without oxygen
- (d) Many mycoplasma are pathogenic in animals and plants

154. Which of the following statement about Euglena is/are true?
- (a) Euglenoids bear flagella
- (b) Euglena when placed in continuous darkness, loose their photosynthetic activity and die
- (c) The pigments of Euglena are quite different from those of green plants
- (d) Euglena is a marine protest

155. Consider the following statements about Ascomycetes. Which one of the statement given below is false?
- (a) They are saprophytic, decomposer, coprophilous and parasitic
- (b) Include unicellular and multicellular forms
- (c) Mycelium is coenocytic and aseptate
- (d) Aspergillus, Clavicepsand Neurosporaare important examples of Ascomycetes

156. Which of the following statement is correct?
- (a) Lichens do not grow in polluted areas
- (b) Algal component of lichens is called mycobiont
- (c) Fungal component of lichens is called phycobiont
- (d) Lichens are not good pollution indicators

157. Consider the following statements.
I. In this group, the plasmodium differentiates and forms fruiting bodies, bearing spores at their tips.

II. Spores possess true walls.

III. The spores are dispersed by air currents.

IV. The spores are extremely resistant and survive for many years even under adverse conditions.

The above statements are assigned to

(a) euglenoids   (b) slime moulds

(c) dinoflagellates   (d) chrysophytes

158. Consider the following statements about plants.

I. Kingdom–Plantae includes eukaryotic, autotrophic, chlorophyll containing organisms.

II. It includes algae, bryophytes, pteridophytes, gymnosperms, but not angiosperms.

III. Plants show alternation of generation [between haploid gametophytic (n) phase and diploid sporophytic ($2n$) phase].

Which of the statements given above are correct?

(a) I and II   (b) I and III

(c) II and III   (d) All of these

159. All eukaryotic unicellular organisms belong to

(a) Monera   (b) Protista

(c) Fungi   (d) Bacteria

160. Difference between virus and viroid is

(a) the absence of protein coat in viroid, but present in virus

(b) the presence of low molecular weight RNA in virus, but absent in viroid

(c) Both (a) and (b)

(d) None of the above

161. Organisms living in salty areas are called as

(a) methanogens   (b) halophiles

(c) heliophytes   (d) thermoacidophiles

162. What is common to bacteria, mosses and fungus?

(a) It is a mode of nutrition

(b) Presence of cell wall

(c) Autotrophic

(d) Body organization

163. All prokaryotic groups are put under —————— kingdom

(a) Monera   (b) Plantae

(c) Fungi   (d) Protista

164. Chlamydomonas, chlorella, paramecium and amoeba are placed in which kingdom of Whittaker's classification?

(a) Monera   (b) Plantae

(c) Fungi   (d) Protista

165. Most of the bacteria are

(a) Chemo-autotrophs   (b) Photo-autotrophs

(c) Heterotroph   (d) Holozoic

166. Archaebacteria can live in some of the most harsh habitats because of

(a) Presence of mesosome

(b) High power of multiplication

(c) Special cell wall structure

(d) All of these

167. Chief producers in ocean are

(a) Diatoms   (b) Dinoflagellate

(c) BGA   (d) Euglenoids

168. Red tide is because of

(a) Desmids   (b) Gonyaulax

(c) Euglena   (d) Red algae

169. The following features belong to class

A. Asexual reproduction by zoospores or aplanospores.

B. Fusion of gametes may be isogamous, anisogamous or oogamous.

C. Mycelium is aseptate and coenocytic.

D. Spores are endogenously produced in sporangium.

(a) Ascomycetes   (b) Deuteromycetes

(c) Phycomycetes   (d) Basidiomycetes

170. Ascomycetes are mostly

(a) Acellular   (b) Unicellular

(c) Multicellular   (d) All of these

171. Tissue is

(a) a group of similar cells together with their intercellularsubstances, which perform a specific function

(b) a single specialised cell with specified functions

(b) composed of a single layer of cuboidal cells

(d) Both (a) and (c)

172. In a tissue, the structure of cells varies according to their

(a) origin   (b) function

(c) gene content   (d) None of these

173. *Ranatigrina*displays all of the following habits except

(a) camouflage   (b) aestivation

(c) hibernation   (d) endothermy

174. The forelimbs and hindlimbs of frogs are

(a) four digits

(b) five digits

(c) four and five digits, respectively

(d) five and four digits, respectively

175. Male frog can be distinguished from female frog by the presence of

(a) vocal sacs and copulatory pad on the first digit of the forelimb

(b) a neck and tail is absent

(c) thehindlimb ends in the five digits

(d) eyes are bulged and covered by the nictitating membrane

176. The respiration by lungs in frog is called

(a) pulmonary respiration (b) pericardial respiration

(c) alveolar respiration   (d) None of these

177. Three-chambered heart of the frog contains

(a) two ventricles and one atrium

(b) two atria and one ventricle

(c) one auricle and two ventricles

(d) one auricle, one ventricle and one atrium

178. The frog is a/an

(a) ureotelic animal   (b) ammonotelic animal

(c) uricotelic animal (d) None of these

179. Consider the following statements.

I. The RBCs,WBCsand platelets are nucleated in frogs.

II. In frogs, there is a special venous connection between liver and intestine called hepatic portal system.

Select the correct option.

(a) I is true, II is false

(b) Both I and II are true

(c) I is false, II is true

(d) Both I and II are false

180. Which of the following statements are correct in reference with the frog?

I. Eyes are bulged and covered by nictitating membrane.

II. Membranous tympanumreceives the sound signals.

III. The frog never drinks water.

IV. Heart possesses sinus venosus.

(a) I and II   (b) III and IV

(c) I and IV   (d) I, II, III and IV