

# NEW STANDARD ACADEMY

Exam

NEET

Marks: 720

Date : 10-07-23

CLASS : 12<sup>TH</sup>

Time: 3 HRS

## Important Instructions:

- Please read the instruction carefully. You are allotted 20 minutes specifically for this purpose.
- The test is of 3:00 Hours duration.
- This test paper consists of 180 questions. Each subject (PCB). In Physics 45 questions, Chemistry 45 question and Biology 90 questions. The maximum marks are 720.
- This question paper contains Three Parts. Section-A is Physics, Section-B is Chemistry and Section-C is Biology.
- Attempt all question in Each Sections. Each question carries +4 marks for correct answer and -1 marks for wrong answer.

## Section-A PHYSICS

- The distance of the moon from the earth is about 60 times the radius of the earth. What will be diameter of the earth (approximately in degrees) as seen from the moon?  
(a)  $1^0$  (b)  $2^0$  (c)  $4^0$  (d)  $6^0$
- If the unit of force is 100 N, unit of length is 10 m and unit of time is 100 s, what is the unit of mass in this system of units?  
(a)  $10^3$  kg (b)  $10^4$  kg (c)  $10^5$  kg (d)  $10^6$  kg
- The displacement of a progressive wave is represented by  $y = A \sin(\omega t - kx)$  where x is distance and t is time

The dimensions of  $\frac{\omega}{k}$  are same as those of

- |                |                 |
|----------------|-----------------|
| (a) Velocity   | (b) Wave number |
| (c) Wavelength | (d) Frequency   |
- If momentum (p), area (A) and time (t) are taken to be fundamental quantities, then energy has the dimensional formula  
(a)  $[p^1 A^{-1} t^1]$  (b)  $[p^2 A^1 t^1]$   
(c)  $[p^1 A^{-1/2} t^1]$  (d)  $[p^1 A^{1/2} t^1]$

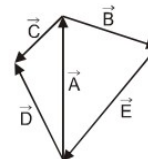
- A and B are two physical quantities having different dimensions. Then which of the following operation is dimensionally correct –

- |                   |                        |
|-------------------|------------------------|
| (a) $A + B$       | (b) $\log \frac{A}{B}$ |
| (c) $\frac{A}{B}$ | (d) $e^{A/B}$          |

- The resultant of two vectors is perpendicular to first vector of magnitude 6 N. If the resultant has magnitude  $6\sqrt{3}$ N, then magnitude of second vector is

- |                   |                   |
|-------------------|-------------------|
| (a) $6\sqrt{2}$ N | (b) 12 N          |
| (c) $9\sqrt{3}$ N | (d) $6\sqrt{3}$ N |

- In figure,  $\vec{E} + \vec{D} - \vec{C}$  equals



- |               |                |
|---------------|----------------|
| (a) $\vec{A}$ | (b) $-\vec{A}$ |
| (c) $\vec{B}$ | (d) $-\vec{B}$ |

- $y = \frac{\cot x}{1 + \cot x}$ ,  $y'$  is

- |  |  |
|--|--|
| (a) $\frac{-\csc^2 x}{(1 + \cot x)^2}$ | (b) $\frac{-\csc^2 x}{(1 - \cot x)^2}$ |
| (c) $\frac{-\csc^2 x}{(1 + \cot x)^2}$ | (d) $\frac{-\csc^2 x}{(1 + \tan x)^2}$ |

- $\int x^{-3}(x+1) dx$

- |   |   |
|---|---|
| (a) $-\frac{1}{x} - \frac{1}{2x^2} + C$ | (b) $\frac{1}{x} + \frac{1}{2x^2} + C$  |
| (c) $3 - \frac{1}{2x^2} + C$            | (d) $-\frac{1}{x} + \frac{1}{2x^2} + C$ |

- The largest mass (m) that can be moved by a flowing river depends on velocity (v), density ( $\rho$ ) of river water and acceleration due to gravity (g). The correct relation is

$$(a) m \propto \frac{\rho^2 v^4}{g^2} \quad (b) m \propto \frac{\rho v^6}{g^2}$$

$$(c) m \propto \frac{\rho v^4}{g^3} \quad (d) m \propto \frac{\rho v^6}{g^3}$$

11. The dimension of  $\frac{1}{2}\epsilon_0 E^2$ , where  $\epsilon_0$  is permittivity of free space and  $E$  is electric field, is

- (a)  $ML^2T^{-2}$  (b)  $ML^{-1}T^{-2}$   
 (c)  $ML^2T^{-1}$  (d)  $MLT^{-1}$

12. If force  $F$  is related with distance  $x$  and time  $t$  as  $F = A\sqrt{x} + Bt^2$ , the dimensions of  $\frac{A}{B}$  is

- (a)  $M^0L^{-1/2}T$  (b)  $ML^{-1/2}T^{-2}$   
 (c)  $M^0L^{-1/2}T^2$  (d)  $M^0LT^{-2}$

13. A vernier calliper has 20 divisions on the vernier scale which coincide with 19 divisions on the main scale. The least count of the instrument is 0.1 mm. The length of one main scale division is

- (a) 0.5 mm (b) 1 mm  
 (c) 2 mm (d) 0.25 mm

14. The charges on two spheres are  $+7\mu C$  and  $-5\mu C$  respectively. They experience a force  $F$ . If each of them is given an additional charge of  $-2\mu C$ , the new force of attraction will be

- (a)  $F$  (b)  $F/2$   
 (c)  $F/\sqrt{3}$  (d)  $2F$

15. Two equally charged, identical metal spheres  $A$  and  $B$  repel each other with a force ' $F$ '. The spheres are kept fixed with a distance ' $r$ ' between them. A third identical, but uncharged sphere  $C$  is brought in contact with  $A$  and then placed at the mid-point of the line joining  $A$  and  $B$ . The magnitude of the net electric force on  $C$  is

- (a)  $F$  (b)  $3F/4$   
 (c)  $F/2$  (d)  $F/4$

16. Four metal conductors having different shapes

1. A sphere 2. Cylindrical  
 3. Pear 3. Lightning conductor

are mounted on insulating stands and charged. The one which is best suited to retain the charges for a longer time is

- (a) 1 (b) 2  
 (c) 3 (d) 4

17. Identify the wrong statement in the following. Coulomb's law correctly describes the electric force that

- (a) Binds the electrons of an atom to its nucleus

- (b) Binds the protons and neutrons in the nucleus of an atom  
 (c) Binds atoms together to form molecules  
 (d) Binds atoms and molecules together to form solids

18. A charge  $q$  is placed at the centre of the line joining two equal charges  $Q$ . The system of the three charges will be in equilibrium, if  $q$  is equal to

- (a)  $-\frac{Q}{2}$  (b)  $-\frac{Q}{4}$   
 (c)  $+\frac{Q}{4}$  (d)  $+\frac{Q}{2}$

19. Inside a hollow charged spherical conductor, the potential

- (a) Is constant  
 (b) Varies directly as the distance from the centre  
 (c) Varies inversely as the distance from the centre  
 (d) Varies inversely as the square of the distance from the centre

20. Two charged spheres of radii 10 cm and 15 cm are connected by a thin wire. No current will flow, if they have

- (a) The same charge on each  
 (b) The same potential  
 (c) The same energy  
 (d) The same field on their surfaces

21. The electric field inside a spherical shell of uniform surface charge density is

- (a) Zero  
 (b) Constant, less than zero  
 (c) Directly proportional to the distance from the centre  
 (d) None of the above

22. The electric potential  $V$  at any point  $O(x, y, z)$  (all in metres) in space is given by  $V = 4x^2$  volt. The electric field at the point  $(1m, 0, 2m)$  in volt/metre is

- (a) 8 along negative  $X$ -axis  
 (b) 8 along positive  $X$ -axis  
 (c) 16 along negative  $X$ -axis  
 (d) 16 along positive  $Z$ -axis

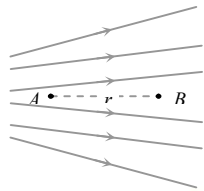
23. A hollow metal sphere of radius 5 cm is charged so that the potential on its surface is 10 V. The potential at the centre of the sphere is

- (a) 0 V (b) 10 V  
 (c) Same as at point 5 cm away from the surface  
 (d) Same as at point 25 cm away from the surface

24. Three charges  $2q, -q, -q$  are located at the vertices of an equilateral triangle. At the centre of the triangle

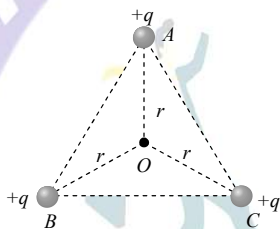
- (a) The field is zero but potential is non-zero  
 (b) The field is non-zero but potential is zero  
 (c) Both field and potential are zero  
 (d) Both field and potential are non-zero

25. Figure shows the electric lines of force emerging from a charged body. If the electric field at  $A$  and  $B$  are  $E_A$  and  $E_B$  respectively and if the displacement between  $A$  and  $B$  is  $r$  then



- (a)  $E_A > E_B$  (b)  $E_A < E_B$   
 (c)  $E_A = \frac{E_B}{r}$  (d)  $E_A = \frac{E_B}{r^2}$
26. ABC is an equilateral triangle. Charges  $+q$  are placed at each corner. The electric intensity at  $O$  will be

- (a)  $\frac{1}{4\pi\epsilon_0} \frac{q}{r^2}$   
 (b)  $\frac{1}{4\pi\epsilon_0} \frac{q}{r}$   
 (c) Zero  
 (d)  $\frac{1}{4\pi\epsilon_0} \frac{3q}{r^2}$



27. The magnitude of electric field intensity  $E$  is such that, an electron placed in it would experience an electrical force equal to its weight is given by

- (a)  $mge$  (b)  $\frac{mg}{e}$   
 (c)  $\frac{e}{mg}$  (d)  $\frac{e^2}{m^2} g$

28. Two spheres  $A$  and  $B$  of radius  $4\text{cm}$  and  $6\text{cm}$  are given charges of  $80\mu\text{C}$  and  $40\mu\text{C}$  respectively. If they are connected by a fine wire, the amount of charge flowing from one to the other is

- (a)  $20\mu\text{C}$  from  $A$  to  $B$  (b)  $16\mu\text{C}$  from  $A$  to  $B$   
 (c)  $32\mu\text{C}$  from  $B$  to  $A$  (d)  $32\mu\text{C}$  from  $A$  to  $B$

29. A charge particle is free to move in an electric field. It will travel

- (a) Always along a line of force  
 (b) Along a line of force, if its initial velocity is zero  
 (c) Along a line of force, if it has some initial velocity in the direction of an acute angle with the line of force  
 (d) None of the above

30. If  $E$  is the electric field intensity of an electrostatic field, then the electrostatic energy density is proportional to

- (a)  $E$  (b)  $E^2$   
 (c)  $1/E^2$  (d)  $E^3$

31. Two plates are  $2\text{cm}$  apart, a potential difference of  $10\text{ volt}$  is applied between them, the electric field between the plates is

- (a)  $20\text{ N/C}$  (b)  $500\text{ N/C}$

- (c)  $5\text{ N/C}$  (d)  $250\text{ N/C}$

32. Conduction electrons are almost uniformly distributed within a conducting plate. When placed in an electrostatic field  $\vec{E}$ , the electric field within the plate

- (a) Is zero  
 (b) Depends upon  $E$   
 (c) Depends upon  $\vec{E}$   
 (d) Depends upon the atomic number of the conducting element

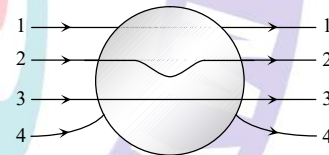
33. A particle  $A$  has charge  $+q$  and a particle  $B$  has charge  $+4q$  with each of them having the same mass  $m$ . When allowed to fall from rest through the same electric potential difference, the ratio of their speed  $\frac{v_A}{v_B}$  will become

- (a)  $2:1$  (b)  $1:2$   
 (c)  $1:4$  (d)  $4:1$

34. Angle between equipotential surface and lines of force is

- (a) Zero (b)  $180^\circ$   
 (c)  $90^\circ$  (d)  $45^\circ$

35. A metallic solid sphere is placed in a uniform electric field. The lines of force follow the path(s) shown in figure as



- (a) 1 (b) 2  
 (c) 3 (d) 4

36. Two charge  $+q$  and  $-q$  are situated at a certain distance. At the point exactly midway between them

- (a) Electric field and potential both are zero  
 (b) Electric field is zero but potential is not zero  
 (c) Electric field is not zero but potential is zero  
 (d) Neither electric field nor potential is zero

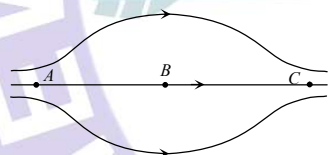
37. A charge of  $5\text{ C}$  experiences a force of  $5000\text{ N}$  when it is kept in a uniform electric field. What is the potential difference between two points separated by a distance of  $1\text{ cm}$

- (a)  $10\text{ V}$  (b)  $250\text{ V}$   
 (c)  $1000\text{ V}$  (d)  $2500\text{ V}$

38. Two equal charges  $q$  are placed at a distance of  $2a$  and a third charge  $-2q$  is placed at the midpoint. The potential energy of the system is

- (a)  $\frac{q^2}{8\pi\epsilon_0 a}$  (b)  $\frac{6q^2}{8\pi\epsilon_0 a}$   
 (c)  $-\frac{7q^2}{8\pi\epsilon_0 a}$  (d)  $\frac{9q^2}{8\pi\epsilon_0 a}$

39. Equal charges are given to two spheres of different radii. The potential will
- Be more on the smaller sphere
  - Be more on the bigger sphere
  - Be equal on both the spheres
  - Depend on the nature of the materials of the spheres
40. An alpha particle is accelerated through a potential difference of  $10^6$  volt. Its kinetic energy will be
- 1 MeV
  - 2 MeV
  - 4 MeV
  - 8 MeV
41. A charge of 5 C is given a displacement of 0.5 m. The work done in the process is 10 J. The potential difference between the two points will be
- 2 V
  - 0.25 V
  - 1 V
  - 25 V
42. The electric potential  $V$  is given as a function of distance  $x$  (metre) by  $V = (5x^2 + 10x - 9)$  volt. Value of electric field at  $x = 1$  is
- 20 V/m
  - 6 V/m
  - 11 V/m
  - 23 V/m
43. The figure shows some of the electric field lines corresponding to an electric field. The figure suggests



- $E_A > E_B > E_C$
  - $E_A = E_B = E_C$
  - $E_A = E_C > E_B$
  - $E_A = E_C < E_B$
44. Two spheres of radius  $a$  and  $b$  respectively are charged and joined by a wire. The ratio of electric field of the spheres is
- $a/b$
  - $b/a$
  - $a^2/b^2$
  - $b^2/a^2$
45. A particle of mass  $m$  and charge  $q$  is placed at rest in a uniform electric field  $E$  and then released. The kinetic energy attained by the particle after moving a distance  $y$  is
- $qEy^2$
  - $qE^2y$
  - $qEy$
  - $q^2Ey$

### Section-B CHEMISTRY

46. The nucleus of the atom consists of
- Proton and neutron
  - Proton and electron
  - Neutron and electron
  - Proton, neutron and electron
47. The size of nucleus is of the order of
- $10^{-12}$  m
  - $10^{-8}$  m
  - $10^{-15}$  m
  - $10^{-10}$  m
48. Positive ions are formed from the neutral atom by the
- Increase of nuclear charge
  - Gain of protons
  - Loss of electrons
  - Loss of protons
49. Who discovered neutron
- James Chadwick
  - William Crooks
  - J.J. Thomson
  - Rutherford
50. Anode rays were discovered by
- Goldstein
  - J. Stoney
  - Rutherford
  - J.J. Thomson
51. Neutron possesses
- Positive charge
  - Negative charge
  - No charge
  - All are correct
52. Cathode rays have
- Mass only
  - Charge only
  - No mass and charge
  - Mass and charge both
53. Which one of the following pairs is not correctly matched
- Rutherford-Proton
  - J.J. Thomson-Electron
  - J.H. Chadwick-Neutron
  - Bohr-Isotope
54. The minimum real charge on any particle which can exist is
- $1.6 \times 10^{-19}$  Coulomb
  - $1.6 \times 10^{-10}$  Coulomb
  - $4.8 \times 10^{-10}$  Coulomb
  - Zero
55. The nature of anode rays depends upon
- Nature of electrode
  - Nature of residual gas
  - Nature of discharge tube
  - All the above
56. One would expect proton to have very large
- Ionization potential
  - Radius
  - Charge
  - Hydration energy
57. The mass of 1 mole of electrons is
- $9.1 \times 10^{-28}$  g
  - 1.008 mg
  - 0.55 mg
  - $9.1 \times 10^{-27}$  g
58. The ratio of specific charge of a proton and an  $\alpha$ -particle is
- 2 : 1
  - 1 : 2

- (c) 1 : 4 (d) 1 : 1
59. Splitting of signals is caused by  
 (a) Proton (b) Neutron  
 (c) Positron (d) Electron
60. The proton and neutron are collectively called as  
 (a) Deuteron (b) Positron  
 (c) Meson (d) Nucleon
61. Which of the following has the same mass as that of an electron  
 (a) Photon (b) Neutron  
 (c) Positron (d) Proton
62. The number of electrons in an atom of an element is equal to its  
 (a) Atomic weight (b) Atomic number  
 (c) Equivalent weight (d) Electron affinity
63. The nucleus of the element having atomic number 25 and atomic weight 55 will contain  
 (a) 25 protons and 30 neutrons  
 (b) 25 neutrons and 30 protons  
 (c) 55 protons  
 (d) 55 neutrons
64. The total number of neutrons in dipositive zinc ions with mass number 70 is  
 (a) 34 (b) 40  
 (c) 36 (d) 38
65. Which of the following are isoelectronic with one another  
 (a)  $Na^+$  and  $Ne$  (b)  $K^+$  and  $O$   
 (c)  $Ne$  and  $O$  (d)  $Na^+$  and  $K^+$
66. The number of electrons in one molecule of  $CO_2$  are  
 (a) 22 (b) 44  
 (c) 66 (d) 88
67.  $CO$  has same electrons as or the ion that is isoelectronic with  $CO$  is  
 (a)  $N_2^+$  (b)  $CN^-$   
 (c)  $O_2^+$  (d)  $O_2^-$
68. The atomic number of an element represents  
 (a) Number of neutrons in the nucleus  
 (b) Number of protons in the nucleus  
 (c) Atomic weight of element  
 (d) Valency of element
69. An atom has 26 electrons and its atomic weight is 56. The number of neutrons in the nucleus of the atom will be  
 (a) 26 (b) 30  
 (c) 36 (d) 56
70. The most probable radius (in  $pm$ ) for finding the electron in  $He^+$  is  
 (a) 0.0 (b) 52.9  
 (c) 26.5 (d) 105.8
71. The number of unpaired electrons in the  $Fe^{2+}$  ion is  
 (a) 0 (b) 4  
 (c) 6 (d) 3
72. A sodium cation has different number of electrons from  
 (a)  $O^{2-}$  (b)  $F^-$   
 (c)  $Li^+$  (d)  $Al^{+3}$
73. An atom which has lost one electron would be  
 (a) Negatively charged  
 (b) Positively charged  
 (c) Electrically neutral  
 (d) Carry double positive charge
74. Number of electrons in the outermost orbit of the element of atomic number 15 is  
 (a) 1 (b) 3  
 (c) 5 (d) 7
75. An atom has the electronic configuration of  $1s^2, 2s^2 2p^6, 3s^2 3p^6 3d^{10}, 4s^2 4p^5$ . Its atomic weight is 80. Its atomic number and the number of neutrons in its nucleus shall be  
 (a) 35 and 45 (b) 45 and 35  
 (c) 40 and 40 (d) 30 and 50
76. Which of the following particles has more electrons than neutrons  
 (a)  $C$  (b)  $F^-$   
 (c)  $O^{2-}$  (d)  $Al^{+3}$
77.  $Na^+$  ion is isoelectronic with  
 (a)  $Li^+$  (b)  $Mg^{+2}$   
 (c)  $Ca^{+2}$  (d)  $Ba^{+2}$
78. Pick out the isoelectronic structures from the following  

$$\begin{array}{cccc} CH_3^+ & H_3O^+ & NH_3 & CH_3^- \\ \text{I} & \text{II} & \text{III} & \text{IV} \end{array}$$
 (a) I and II (b) I and IV  
 (c) I and III (d) II, III and IV
79. 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
80. Which of the following is isoelectronic with carbon atom  
 (a)  $Na^+$  (b)  $Al^{3+}$   
 (c)  $O^{2-}$  (d)  $N^+$
81. A crystalline solid  
 (a) Changes abruptly from solid to liquid when heated  
 (b) Has no definite melting point  
 (c) Undergoes deformation of its geometry easily  
 (d) Has an irregular 3-dimensional arrangements  
 (e) Softens slowly
82. Diamond is an example of  
 (a) Solid with hydrogen bonding

- (b) Electrovalent solid
- (c) Covalent solid
- (d) Glass

83. Among solids the highest melting point is established by

- (a) Covalent solids
- (b) Ionic solids
- (c) Pseudo solids
- (d) Molecular solids

84. A crystalline solid have

- (a) Long range order
- (b) Short range order
- (c) Disordered arrangement
- (d) None of these

85. Crystalline solids are

- (a) Glass
- (b) Rubber
- (c) Plastic
- (d) Sugar

86. Which of the following is a molecular crystal

- (a) SiC
- (b) NaCl
- (c) Graphite
- (d) Ice

87. Which one is an example of amorphous solid

- (a) Glass
- (b) Salt
- (c) Cesium chloride
- (d) Calcium fluoride

88. Which of the following statements about amorphous solids is incorrect

- (a) They melt over a range of temperature
- (b) They are anisotropic
- (c) There is no orderly arrangement of particles
- (d) They are rigid and incompressible

89. Which of the following is correct

Crystal system	Axial distance	Axial angles	Examples
(a) Cubic	$a = b = c$	$\alpha = \beta = \gamma = 90^\circ$	Cu, KCl
(b) Monoclinic	$a \neq b = c$	$\alpha = \beta = \gamma = 90^\circ$	PbCrO <sub>2</sub> , PbCrO <sub>4</sub>
(c) Rhombohedral	$a = b = c$	$\alpha = \beta = \gamma \neq 90^\circ$	CaCO <sub>3</sub> , HgS
(d) Triclinic	$a \neq b \neq c$	$\alpha \neq \beta \neq \gamma \neq 90^\circ$	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> , CuSO <sub>4</sub> , 5H <sub>2</sub> O

90. In a face-centered cubic lattice, a unit cell is shared equally by how many unit cells

- (a) 8
- (b) 4
- (c) 2
- (d) 6

### Section-C BIOLOGY

91. In majority of higher animals and plants, reproduction and growth are

- (a) mutually exclusive events
- (b) synonymous events
- (c) synonymous events during *in vitro* culture
- (d) None of the above

92. 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

93. Why reproduction cannot be considered as an inclusive defining characteristic of all living organisms?

- (a) Non-living organisms also reproduce
- (b) Many living organisms are sterile
- (c) Reproduction is synonym to growth in all organisms
- (d) Both (a) and (b)

94. Higher level of organisation emerges from

- (a) a tissue itself
- (b) interactions among organelles
- (c) molecular constituent of an organelle
- (d) None of these

95. The number of species that are known and described ranges between

- (a) 1.7-1.8 million
- (b) 1 million
- (c) 50 million
- (d) 2 million

96. The binomial nomenclature system was given by

- (a) Carol Linnaeus
- (b) Carolus Linnaeus
- (c) Aristotle
- (d) Whittaker

97. The scientific term for different categories like plants and mammals is

- (a) phylum
- (b) taxa
- (c) genus
- (d) None of these

98. In *Solanum tuberosum*, 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

99. Choose the organism which does not belong to genus *Solanum*.

- (a) Potato
- (b) Tomato
- (c) Brinjal
- (d) Bottle gourd

100. A group of related genera is called a

- (a) family
- (b) class
- (c) phylum
- (d) order

101. The plant family—Solanaceae is included in which order?

- (a) Felidae (b) Conidae  
(c) Polymoniales (d) None of these

102. Higher taxa share

- (a) least common characters  
(b) maximum common characters  
(c) no common characters  
(d) exactly similar common characters

103. Which taxonomic category of mango and wheat is similar?

- (a) Order and Family (b) Only Division  
(c) Division and Class (d) None of these

104. Poales and Sapindales represent

- (a) Genus (b) Class  
(c) Order (d) Species

105. Taxonomic key is one of the taxonomic tools in the identification and classification of plants and animals. It is used in the preparation of

- (a) monograph (b) flora  
(c) Both (a) and (b) (d) None of the above

106. Match the following by choosing the correct option:

- a. Family i. Tuberosum  
b. Kingdom ii. Polymoniales  
c. Order iii. Solanum  
d. Species iv. Plantae  
e. Genus v. Solanaceae

Options

- (a) i – d, ii – c, iii – e, iv – b, v – a  
(b) i – e, ii – d, iii – b, iv – a, v – c  
(c) i – d, ii – e, iii – b, iv – a, v – c  
(d) i – e, ii – c, iii – b, iv – a, v – d

107. Who had written Systema Naturae?

- (a) Ernst Mayr (b) Carolus Linnaeus  
(c) RH Whittaker (d) None of these

108. Which of the following is self-conscious?

- (a) Human being (b) Tiger  
(c) Lion (d) Amoeba

109. Choose the correct one

I. Growth cannot be taken as a defining property of living organism.

II. Dead organism does not grow.

III. Reproduction cannot be an all inclusive defining characteristic of living organisms.

IV. No non-living object is capable of replicating itself.

V. Metabolism in a test tube is non-living.

VI. Metabolism is a defining feature of all living organism.

- (a) I and III (b) All except V  
(c) All except III (d) All

110. In the five kingdom classification, Chlamydomonas and Chlorella are included in

- (a) Plantae (b) Algae  
(c) Protista (d) Monera

111. Which of the following are found in extreme saline conditions?

- (a) Archaeobacteria (b) Eubacteria  
(c) Cyanobacteria (d) Mycobacteria

112. Given figure is of a filamentous blue-green algae. Identify the algae and choose the option that is correct for A, B and C in the figure.



- (a) A—*Gelidium*, B—Vegetative cell, C—Heterocyst  
(b) A—*Volvox*, B—Somatic cell, C—Mucilaginous sheath  
(c) A—*Chara*, B—Mucilaginous sheath, C—Heterocyst  
(d) A—*Nostoc*, B—Heterocyst, C—Mucilaginous sheath

113. Chrysophytes, euglenoids, dinoflagellates and slime moulds are included in the kingdom *NEET 2016*

- (a) Protista (b) Fungi  
(c) Animalia (d) Monera

114. Diatoms and desmids are found in

- (a) freshwater (b) marine water  
(c) Both (a) and (b) (d) terrestrial habitat

115. Which of the following organisms are known as chief producers in the oceans?

- (a) Cyanobacteria (b) Diatoms  
(c) Dinoflagellates (d) Euglenoids

116. In which of the following groups, the cell wall has stiff cellulose plate on the outer surface?

- (a) Diatoms (b) Red algae  
(c) Dinoflagellates (d) Slime moulds

117. Which of the following protists releases toxins that may even kill fishes and other marine animals?

- (a) Euglena (b) Gonyaulax  
(c) Paramecium (d) Plasmodium

118. Under favourable conditions slime moulds form

- (a) protonema (b) plasmodium  
(c) mycelium (d) fruiting bodies

119. Ciliates differ from all other protozoans in

- (a) using pseudopodia for capturing prey  
(b) having a contractile vacuole for removing excess water  
(c) using flagella for locomotion  
(d) having two types of nuclei

120. Which of the following is a non-hyphal unicellular fungus?

- (a) Yeast (b) Puccinia  
(c) Ustilago (d) Alternaria

121. Fungi that absorb soluble organic matter from dead substrates are called

- (a) saprophytes

- (b) parasites  
(c) obligate parasite  
(d) lichens
12. Mycorrhiza promotes the plant growth by  
(a) absorbing inorganic ions from soil  
(b) helping the plant in utilising atmospheric nitrogen  
(c) protecting the plant from infection  
(d) serving as plant growth regulator
13. Fungi are divided into four classes on the basis of  
(a) morphology of the mycelium  
(b) mode of spore formation  
(c) fruiting bodies  
(d) All of the above
14. In Phycomycetes, asexual reproduction occurs by  
(a) zoospores (b) aplanospores  
(c) Both (a) and (b) (d) None of these
15. All of the following fungi belong to Phycomycetes, except  
(a) Rhizopus (b) Mucor  
(c) Albugo (d) Agaricus
16. Identify the edible and delicate Ascomycetes members.  
(a) Agaricus and Puccinia (b) Morels and truffles  
(c) Puffball and Agaricus (d) Puffball and mushrooms
17. Among rust, smut and mushroom, all the three  
(a) are pathogens (b) are saprobes  
(c) bear ascocarps (d) bear basidiocarps
18. In Deuteromycetes, the mycelium is  
(a) septate and branched (b) septate and unbranched  
(c) coenocytic (d) multinucleated
129. Deuteromycetes reproduce only by asexual spores known as  
(a) conidia (b) endospores  
(c) zoospores (d) heterocyst
130. All the given fungi belong to Deuteromycetes, except  
(a) Alternaria (b) Colletotrichum  
(c) Trichoderma (d) Ustilago
131. Viroids differ from viruses in having  
(a) DNA molecules with protein coat  
(b) DNA molecules without protein coat  
(c) RNA molecules with protein coat  
(d) RNA molecules without protein coat
132. The advantage of fungus in lichen is  
(a) food  
(b) anchoring  
(c) mineral absorption  
(d) Both (b) and (c)
133. The benefit given by algae in lichen is  
(a) food for fungi  
(b) shelter  
(c) mineral absorption  
(d) protection
134. Which of the following would appear as the pioneer organisms on bare rocks?  
(a) Liverworts (b) Mosses  
(c) Green algae (d) Lichens
135. Which of the following statements about methanogens is not correct?  
(a) They can be used to produce biogas  
(b) They are found in the rumen of cattle and their excreta  
(c) They grow aerobically and breakdown cellulose rich food  
(d) They produce methane gas
136. Oogamous means  
(a) fusion between female and male gametes of similar size  
(b) fusion between one large female gamete and a smaller non-motile male gamete  
(c) fusion between one large female gamete and a smaller motile male gamete  
(d) fusion between one smaller female gamete and a large motile male gamete
137. Zygotic meiosis is characteristic of  
(a) Marchantia (b) Fucus  
(c) Funaria (d) Chlamydomonas
138. The members of brown algae have  
(a) chlorophyll-*a*, chlorophyll-*b* and xanthophylls  
(b) chlorophyll-*a*, chlorophyll-*c* and xanthophylls  
(c) fucoxanthin and phycoerythrin  
(d) chlorophyll-*a* and chlorophyll-*d*
139. Photosynthetic pigment(s) of class-Rhodophyceae (red algae) is/are  
(a) chlorophyll-*a* and *b*  
(b) chlorophyll-*a* and *c*  
(c) chlorophyll-*a* only  
(d) chlorophyll-*a* and *d*
140. Members of class-Rhodophyceae are known as red algae due to the presence of red pigment  
(a) *r*-phycoerythrin (b) *r*-xanthophyll  
(c) chlorophyll-*a* (d) fucoxanthin
141. Which of the following is not matched?  
(a) Chlamydomonas – Unicellular flagellated  
(b) Laminaria – Flattened leaf-like thallus  
(c) Chlorella – Unicellular non-flagellated  
(d) Volvox – Colonial form, non-flagellated
142. Read carefully the table and fill up the blanks



Classes	Major Pigments	Stored Food	Cell Wall	Flagellar Number and Position of Insertions
Chlorophyceae	A	Starch	Cellulose	2-8, equal, apical
Phaeophyceae	Chlorophyll- <i>a</i> and <i>c</i> , fucoxanthin	Mannitol, laminarin	C	2, unequal, lateral
Rhodophyceae	Chlorophyll- <i>a</i> and <i>d</i> , phycoerythrin	B	Cellulose	D

A, B, C and D in the above table refers to

	A	B	C	D
(a)	Chlorophyll- <i>a</i> and <i>d</i>	Starch and laminarin	Cellulose	2-10, equal, apical
(b)	Chlorophyll- <i>a</i> and <i>c</i>	Mannitol and starch	Cellulose and algin	2-8, equal, lateral
(c)	Chlorophyll- <i>a</i> and <i>b</i>	Floridean starch	Cellulose and algin	Not present
(d)	Chlorophyll- <i>a</i> and <i>b</i>	Mannitol and floridean starch	Cellulose	Not present

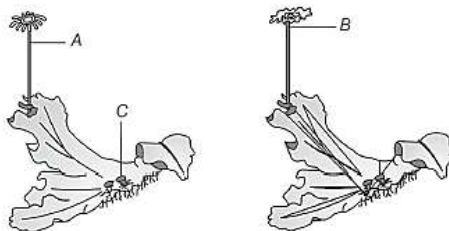
143. Gametophytic generation is dominant stage in the life cycle of

- (a) pteridophytes (b) angiosperms  
(c) gymnosperms (d) bryophytes

144. In bryophytes, antheridium produces ...A... and female sex organ archegonium produces ...B... Here A and B refer to

- (a) A-uniflagellate antherozoids; B-two eggs  
(b) A-biflagellate antherozoids; B-one egg  
(c) A-non-motile antherozoids; B-one egg  
(d) A-non-motile antherozoids; B-two eggs

145. Observe the diagrams given below and choose the correct option for A, B and C.



- (a) A-Antheridiophore, B-Archegoniophore, C-Endospore  
(b) A-Archegoniophore, B-Antheridiophore, C-Gemma cup  
(c) A-Antheridiophore, B-Archegoniophore, C-Gemma cup  
(d) A-Archegoniophore, B-Antheridiophore, C-Seta cup

146. In which of the following, the gametangia surrounded by a sterile jacket will be found?

- (a) Fungi (b) Angiosperms  
(c) Bryophytes (d) None of these

147. Select the correct sequential arrangement of reproductive structures in pteridophytes.

- (a) Sporophyll→ Strobili→ Sporangia→ Spore

mother cell→ Spores

- (b) Strobili→ Sporophyll→ Sporangia→ Spores  
(c) Spores→ Sporophyll→ Sporangia→ Strobili  
(d) Spores→ Sporangia→ Sporophyll→ Strobili

148. In homosporous pteridophyte, the gametophyte is

- (a) vascular  
(b) monoecious  
(c) dioecious  
(d) may be monoecious or dioecious

149. Which of the following pteridophytes is heterosporous in nature?

- (a) Selaginella and Salvinia  
(b) Adiantum and Equisetum  
(c) Psilotum and Lycopodium  
(d) Adiantum and Psilotum

150. Seed habit is linked to

- (a) homosporous (b) heterosporous  
(c) parthenocarpy (d) parthenogenesis

151. Sporophyte is parasitic over gametophyte.

This statement is true for

- (a) pteridophytes (b) algae  
(c) bryophytes (d) None of these

152. Gymnosperms are characterised by

- (a) multiflagellate sperms (b) naked seeds  
(c) winged seeds (d) seeds inside fruits

153. Conifers are adapted to tolerate extreme environmental conditions because of

- (a) broad hardy leaves (b) superficial stomata  
(c) thick cuticle (d) the presence of vessels

154. Which of the following gymnosperm has coralloid roots associated with N<sub>2</sub>-fixing cyanobacteria?

- (a) Pinus (b) Cycas  
(c) Cedrus (d) Ginkgo

155. In gymnosperms, the leaves are well-adapted to withstand extremes of temperature, humidity and wind. Which is/are the xeric character(s) of conifers?

- (a) Needle-like leaves  
(b) Thick cuticle  
(c) Sunken stomata  
(d) All of the above

156. Select the mismatch.

- (a) Pinus- Dioecious  
(b) Cycas- Dioecious  
(c) Salvinia- Heterosporous  
(d) Equisetum - Homosporous

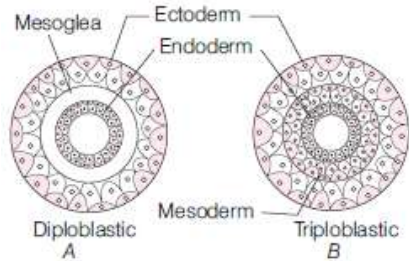
157. Cellular level of organisation is

- (a) seen in sponges  
(b) when cells shows division of labour  
(c) when cells are arranged in loose cell aggregates  
(d) All of the above

158. Phylum(s) that exhibit radial or radial-like symmetry is/are

- (a) Coelenterata (b) Echinodermata  
(c) Ctenophora (d) All of these

159. The diagram below shows the diploblastic and triploblastic germ layers in the animals. Identify the correct option in which they are found.



- (a) A–Molluscs, B–Chordates  
 (b) A–Annelida, B–Porifera  
 (c) A–Coelenterates, B–Platyhelminthes  
 (d) A–Porifera, B–Cnidaria
160. A coelom is a  
 (a) cavity between body wall and gut wall  
 (b) body cavity lined by mesoderm  
 (c) body cavity not lined by mesoderm  
 (d) body cavity lined by endoderm
161. The pseudocoelomate animals are included in the phylum  
 (a) Porifera (b) Annelida  
 (c) Aschelminthes (d) Mollusca
162. The notochord is derived from which of the following layers?  
 (a) Ectoderm (b) Mesoderm  
 (c) Endoderm (d) Placoderm
163. Tube-within-tube body plan is found in which animal?  
 (a) Euspongia (b) Fasciola  
 (c) Hydra (d) None of these
164. Examine the figures A, B and C. In which one of the four options all the animals (poriferans) are correct?



- (a) A–Sycon, B–Euspongia, C–Spongilla  
 (b) A–Euspongia, B–Spongilla, C–Sycon  
 (c) A–Spongilla, B–Sycon, C–Euspongia  
 (d) A–Euspongia, B–Sycon, C–Spongilla
165. The body wall of a common sponge consists of  
 (a) pinacoderm (b) choanoderm  
 (c) mesophyll layer (d) All of these
166. The skeleton of animals belonging to phylum– Porifera are made up of  
 (a) spicules (b) spiracles  
 (c) spines (d) None of these
167. Which of the following is not true regarding phylum– Coelenterata?  
 (a) They are diploblastic animals  
 (b) They have cellular level of organisation

- (c) They have nematocyte cells present on the tentacles  
 (d) The gastrovascular opening is called the hypostome

168. Medusa is the sexually reproductive structure of

- (a) Hydra (b) Obelia  
 (c) Sea anemone (d) None of these

169. Flame cells are present in

- (a) Aschelminthes (b) Platyhelminthes  
 (c) Annelida (d) Cephalochordat

170. Which one of the following endoparasites of humans does show viviparity? CBSE-AIPMT 2015

- (a) Ancylostomaduodenale  
 (b) Enterobiusspiralis  
 (c) Trichinellaspiralis  
 (d) None of these

171. The phylum–Annelida is named so because of

- (a) more organs are placed towards anterior part of the body  
 (b) the presence of antenna  
 (c) anteriorly placed neural system  
 (d) the presence of metameris

172. Characteristic feature of phylum– Echinodermata is

- (a) radial symmetry (b) water vascular system  
 (c) mantle cavity (d) All of these

173. Phylum–Chordata is divided into subphyla namely

- (a) Vertebrata, Protochordata and Urochordata  
 (b) Urochordata, Gnathochordata and Vertebrata  
 (c) Urochordata, Tunicata and Vertebrata  
 (d) Tunicata, Cephalochordata and Vertebrata

174. Which one is not cartilaginous fish?

- (a) Carcharodon (Great white shark), Trygon (sting ray)  
 (b) Exocoetus (flying fish), Catla (katla), Clarias (magur)  
 (c) Scoliodon (dog fish)  
 (d) Pristis (saw fish)

175. Which among these is the correct combination of aquatic mammals?

- (a) Seals, Dolphins, Sharks  
 (b) Dolphins, Seals, Trygon  
 (c) Whales, Dolphins, Seals  
 (d) Trygon, Whales, Seals

176. Mark the false statement for the phylum– Annelida.

- (a) They are bilaterally symmetrical coelomate animals  
 (b) They have both monoecious and dioecious animal representatives  
 (c) Excretory system consists of flame cells  
 (d) They do not show asexual reproduction generally

177. Consider the following features. NEET (National) 2019

- A. Organ system level of organisation

B. Bilateral symmetry  
C. True coelomates with segmentation of body  
Select the correct option of animal groups which possess all the above characteristics.

- (a) Annelida, Arthropoda and Mollusca
- (b) Arthropoda, Mollusca and Chordata
- (c) Annelida, Mollusca and Chordata
- (d) Annelida, Arthropoda and Chordata

178. Frog's heart when taken out of the body continues to beat for some time.

Select the option containing the correct statements.

- I. Frog is not a poikilotherm.
- II. Frog does not have any coronary circulation.
- III. Heart is 'myogenic' in nature.
- IV. Heart is autoexcitable.

- (a) Only III
- (b) Only IV
- (c) I and II
- (d) III and IV

179. Consider the following statements.

- I. All connective tissues except blood contain cells which secrete fibres of collagen or elastin.
- II. The matrix of connective tissues is formed by the modified polysaccharides.

Select the correct option.

- (a) I is true, II is false
- (b) I is false, II is true
- (c) Both I and II are true
- (d) Both I and II are false

180. Setae present in

- (a) frog
- (b) Ascaris
- (c) Earth Worm
- (d) Leech

