

NEW STANDARD ACADEMY

Date : 18-08-25

CLASS : 11TH NEET

Marks: 720
Time: 3 hours.

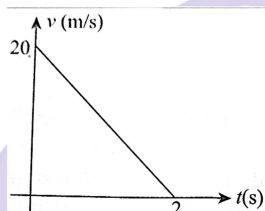
PHYSICS

- A body, constrained to move in the y-direction, is subjected to a force $F = (-2\hat{i} + 15\hat{j} + 6\hat{k})$ N. What is the work done by this force on the body through a distance of 10 m along the y-axis?
(a) 20 J (b) 150 J
(c) 160 J (d) 190 J
- A force $F = (3x\hat{i} + 4\hat{j})$ Newton (where x is in metres) acts on a particle which moves from a position (2 m, 3 m) to (3 m, 0 m). Then the work done is
(a) 7.5 J (b) -12 J
(c) -4.5 J (d) +4.5 J
- A particle moves along the x-axis from $x = 0$ to $x = 5$ m under the influence of a force given by $F = 7 - 2x + 3x$. Work done in the process is
(a) 70 (b) 270
(c) 35 (d) 135
- The distance x moved by a body of mass 0.5 kg by a force varies with time t as $x = 3t^2 + 4t + 5$
(a) 60 J (b) 50 J
(c) 75 J (d) 100 J
- The work done by a spring force
(a) is always negative (b) is always positive
(c) is always zero (d) may be positive and negative
- If a man increases his speed by 2 m/s his K.E. is doubled. The original speed of the man is
(a) $(2 + \sqrt{2})$ m/s (b) $(2 + 2\sqrt{2})$ m/s
(c) 4 m/s (d) $(1 + \sqrt{2})$ m/s
- Work done in time t on a body of mass m which is accelerated from rest to a speed u in time t_1 , as a function of time t is given by
(a) $\frac{1}{2}m \frac{u}{t_1} t^2$ (b) $m \frac{u}{t_1} t^2$
(c) $\frac{1}{2}m \frac{mu}{t_1} t^2$ (d) $\frac{1}{2}m \frac{u^2}{t_1^2} t^2$
- A body of mass 2 kg falls vertically, passing through two points A and B. The speeds of the body as it passes A and B are 1 m/s and 4 m/s respectively. The resistance against which the body falls is 9.6 N. What is the distance AB?
(a) 2 m (b) 3 m
(c) 6 m (d) 1.5 m
- A force 'F' stops a body of mass 'm' moving with a velocity 'u' in a distance 's'. The force required to stop a body of double the mass moving with double the velocity in the same distance is
(a) 2F (b) 4F
(c) 6F (d) 8F
- A block is moved from rest through a distance of 4 m along a straight line path. The mass of the block is 5 kg and the force acting on it is 20 N. If the kinetic energy acquired by the block is 40 J, at what angle to the path the force is acting
(a) 30° (b) 60°
(c) 45° (d) none of the above
- A block of mass 10 kg is moving in x-direction with a constant speed of 10 m/s. It is subjected to a retarding force $F = (-0.1x)$ N during its travel from $x = 20$ m to $x = 30$ m. Its final kinetic energy will be
(a) 475 J (b) 450 J
(c) 275 J (d) 250 J
- Given that the displacement of the body in metre is a function of time as follows $x = 2t^4 + 5$

The mass of the body is 2 kg. What is the increase in its kinetic energy one second after the start of motion?

- (a) 8 J (b) 16 J
(c) 32 J (d) 64 J

14. Velocity-time of a particle of mass 2 kg moving in a straight line is as shown in figure. Work done by all the forces on the particle is



- (a) 400 J (b) -400 J
(c) -200 J (d) 200 J

15. A mass of 1 kg is acted upon by a single force $F = (4\hat{i} + 4\hat{j})$ N. Under this force it is displaced from (0,0) to (1 m, 1 m). If initially the speed of the particle was 2 m/s, its final speed should be

- (a) 6 m/s (b) 4.5 m/s
(c) 8 m/s (d) 4 m/s

16. A block of mass 5 kg slides down a rough inclined surface. The angle of inclination is 45° . The coefficient of sliding friction is 0.20. When the block slides 10 cm, the work done on the block by force of friction is

- (a) $-1/\sqrt{2}$ J (b) 1 J
(c) $-\sqrt{2}$ J (d) -1 J

17. Kinetic energy of a particle moving in a straight line varies with time t as $K = 4t^2$.

The force acting on the particle

- (a) is constant (b) is increasing
(c) is decreasing
(d) first increases and then decreases

18. A chain of mass m is placed on a smooth table with $1/n$ of its length L hanging over the edge. The work done in pulling the hanging portion of the chain back to the surface of the table is

- (a) mgL/n (b) $mgL/2n$
(c) mgL/n^2 (d) $mgL/2n^2$

19. Two springs A and B ($k_A = 2k_B$) are stretched by applying forces of equal

magnitudes at the four ends. If the energy stored in A is E , that in B is

- (a) $E/2$ (b) $2E$
(c) E (d) $E/4$

20. A body is dropped from a certain height. When it lost an amount of P.E. ' U ', it acquires a velocity ' v '. The mass of the body is

- (a) $2U/v^2$ (b) $2v/U^2$
(c) $2v/U$ (d) $U^2/2v$

21. A long spring is stretched by 2 cm. Its potential energy is U . If the spring is stretched by 10 cm, its potential energy would be

- (a) $U/25$ (b) $U/5$
(c) $5U$ (d) $25U$

22. A body of mass 5 kg is raised vertically to a height of 10 m by a force 170 N. The velocity of the body at this height will be

- (a) 9.8 m/s (b) 15 m/s
(c) 22 m/s (d) 37 m/s

23. Three particles A, B and C are projected from the top of a tower with the same speed. A is thrown straight upwards B straight down and C horizontally. They hit the ground with speeds

v_A , v_B , and v_C then which of the following is correct?

- (a) $v_A = v_B > v_C$ (b) $v_A = v_B = v_C$
(c) $v_A > v_B = v_C$ (d) $v_B > v_C > v_A$

24. A particle is released from a height H . At certain height its kinetic energy is three times its potential energy. Height and speed of particle at that instant are

- (a) $\frac{2H}{3} \sqrt{\frac{2gH}{3}}$ (b) $\frac{H}{4} \sqrt{\frac{3gH}{2}}$
(c) $\frac{2H}{3} \sqrt{\frac{2gH}{3}}$ (d) $\frac{H}{4} \sqrt{gH}$

25. A mass of 2 kg falls from a height of 40 cm on a spring with a force constant of 1960 N/m. The spring is compressed by (take $g = 9.8 \text{ m/s}^2$)

- (a) 10 cm (b) 1.0 cm
(c) 20 cm (d) 5 cm

26. A stone of mass 2 kg is projected upwards with KE of 98 J. The height at which the

KE of the body becomes half its original value, is given by (Take $g = 9.8 \text{ m/s}^2$)

- (a) 5 m (b) 2.5 m
(c) 1.5 m (d) 0.5 m

27. If v be the instantaneous velocity of the body dropped from the top of a tower, when it is located at height h , then which of the following remains constant?

- (a) $gh + v^2$ (b) $gh + v^2/2$
(c) $gh - v^2/2$ (d) $gh - v^2$

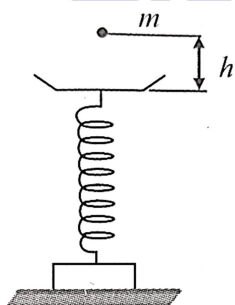
28. A body is attached to the lower end of a vertical spiral spring and it is gradually lowered to its equilibrium position. This stretches the spring by a length d . If the same body attached to the same spring is allowed to fall suddenly, what would be the maximum stretching in this case?

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

29. A pendulum has a length l . Its bob is pulled aside from its equilibrium position through an angle 60° and then released. The speed of the bob when it passes through the equilibrium position is given by

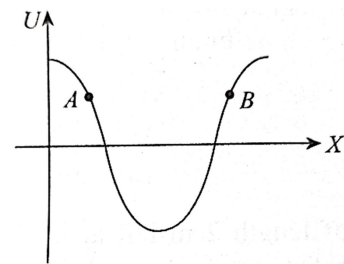
- (a) $\sqrt{2gl}$ (b) $\sqrt{3gl}$
(c) \sqrt{gl} (d) $2\sqrt{gl}$

30. A ball of mass m is dropped from a height h on a platform fixed at the top of a vertical spring. The platform is displaced by a distance x . The spring constant is



- (a) $2mg/x$ (b) $2mgh/x^2$
(c) $\frac{2mg(h+x)}{x^2}$ (d) $\frac{2mg(h+x)}{h^2}$

31. Potential energy v/s displacement curve for one dimensional conservative field is shown. Force at A and B is respectively.



- (a) Positive, Positive (b) Positive, Negative
(c) Negative, Positive (d) Negative, Negative

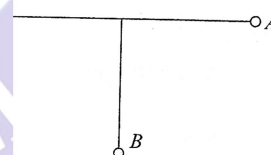
32. A block of mass m slides down along the surface of the bowl (radius R) from the rim to the bottom. The velocity of the block at the bottom will be

- (a) $\sqrt{(\pi Rg)}$ (b) $2\sqrt{(\pi Rg)}$
(c) $\sqrt{(2Rg)}$ (d) $\sqrt{(Rg)}$

33. A man slides down a snow covered hill along a curved path and falls 20 m below his initial position. The velocity in m/s with which he finally strikes the ground is ($g = 10 \text{ m/s}^2$)

- (a) 20 (b) 400
(c) 200 (d) 40

34. A pendulum of length 2 m left at A. When it reaches B, it loses 10% of its total energy due to air resistance. The velocity at B is



- (a) 6 m/s (b) 1 m/s
(c) 2 m/s (d) 8 m/s

35. A ball is thrown vertically upwards with a velocity of 10 m/s. It returns to the ground with a velocity of 9 m/s. If $g = 9.8 \text{ m/s}^2$ then the maximum height attained by the ball is nearly (assume air resistance to be uniform)

- (a) 5.1 m (b) 4.1 m
(c) 4.61 m (d) 5.0 m

36. A particle of mass 1 g executes an oscillatory motion on the concave surface of a spherical dish of radius 2 m placed on a horizontal plane. If the motion of the particle begins from a point on the dish at

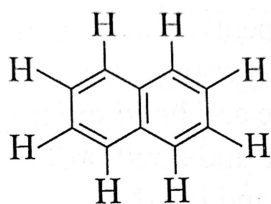
- a height of 1 cm from the horizontal plane and the coefficient of friction is 0.01, the total distance covered by the particle before it comes to rest, is approximately
- (a) 2.0 m (b) 10.0 m
(c) 1.0 m (d) 20.0 m
37. A light and a heavy body have equal momentum. Which one has greater K.E.?
(a) the light body (b) both have equal K.E.
(c) the heavy body incomplete
(d) data given is
38. A 300 g mass has a velocity of $(3\mathbf{i} + 4\mathbf{j})$ m/s at a certain instant what is its K.E.?
(a) 1.35 J (b) 2.4 J
(c) 3.75 J (d) 7.35 J
39. Two bodies of mass 1 kg and 4 kg are moving with equal kinetic energies. The ratio of their linear momentum is
(a) 1:2 (b) 2:1
(c) 4:1 (d) 1:4
40. The momentum of a body is increased by 50%. The K.E. of the body will be increased by
(a) 50% (b) 125%
(c) 330% (d) 400%
41. A car moving with a speed of 40 km/h can be stopped by applying brakes at least 2 m. If the car is moving with a speed of 80 km/h the minimum stopping distance is
(a) 8m (b) 4m
(c) 2m (d) 1m
42. A body, having kinetic energy k , moving on a rough horizontal surface, is stopped in a distance x . The force of friction exerted on the body is
(a) $\frac{k}{x}$ (b) $\frac{x}{k}$
(c) $\frac{k}{2x}$ (d) $2kx$
43. A body of mass 5 kg rests on a rough horizontal surface of coefficient of friction 0.2. The body is pulled through a distance of 10 m by a horizontal force of 25 N. The kinetic energy acquired by it is (take $g = 10 \text{ ms}^{-2}$)
(a) 200 J (b) 150 J
(c) 100 J (d) 50 J
44. A uniform chain of length L and mass M is lying on a smooth table and one third of its length is hanging vertically down over the edge of the table. If g is acceleration due to gravity, the work required to pull the hanging part on to the table is
(a) Mgl (b) $Mgl/3$
(c) $Mgl/9$ (d) $Mgl/18$
45. Under the action of a force, a 2 kg body moves such that its position x as a function of time t is given by $x = \frac{t^2}{2}$ where x is in meter and t in second. The work done by the force in the first two seconds is
(a) 400 J (b) 40 J
(c) 4 J (d) 0.4 J

CHEMISTRY

46. Among the following, the molecule with zero dipole moment is
(a) CH_3Cl (b) CH_2Cl_2
(c) CHCl_3 (d) CCl_4
47. Which is most soluble in water?
(a) AgI (b) AgBr
(c) AgCl (d) AgF
48. Hybridisation state of C-atom in following CH_4 C_2H_4 C_2H_2 are, respectively
(a) sp , sp^2 , sp^3 (b) sp^3 , sp^2 , sp
(c) dsp^2 , sp^2 , sp (d) sp^2 , d , sp^2 , sp
49. The types of hybrid orbitals of nitrogen in NO_2^+ NO_3^- and NH_4^+ , respectively, are expected to be
(a) sp , sp^3 and sp^2 (b) sp^2 , sp^3 and sp
(c) sp^2 , sp and sp^3 (d) sp , sp^2 and sp^3
50. Shape and hybridisation of NH_3 is
(a) Tetrahedral and sp^3
(b) Pyramidal and sp^3
(c) Bent and sp^3
(d) Planar and sp^2
51. Hybridisation of Xe in XeF_2 molecule is
(a) sp^3 (b) sp^3d
(c) dsp^2 (d) sp^2
52. The bond angle in sp^2 hybridisation is
(a) 180° (b) 120°
(c) 90° (d) $109^\circ 2'$
53. The structure of IF_7 is
(a) octahedral
(b) pentagonal bipyramid
(c) square pyramid

(d) trigonal bipyramid

54. Sum of σ bonds and pi bonds in the given structure is



- (a) 22 (b) 23
(c) 24 (d) 25
55. The molecule having smallest bond angle is
(a) PCl_3 (b) NCI_3
(c) AsCl_3 (d) SbCl_3
56. In which of the following pairs the two species are not isostructural?
(a) AlF_6^{3-} and SF_6 (b) CO_3^{2-} and NO_3^-
(c) PCl_4^+ and SiCl_4 (d) PF_5 and BrF_5
57. Which of the following represent the given mode of hybridisation sp^2 sp^2 sp and sp from left to right:
(a) $\text{H}_2\text{C}=\text{CH}-\text{C}\equiv\text{CH}$ (b) $\text{HC}\equiv\text{C}-\text{C}=\text{CH}$
(c) $\text{H}_2\text{C}=\text{C}=\text{C}=\text{CH}_2$ (d) $\text{H}_2\text{C}=\text{CH}-\text{CH}=\text{CH}_2$
58. The molecule of CO_2 has an angle 180° because it has
(a) sp^3 hybridisation (b) sp^2 hybridisation
(c) sp hybridisation (d) d^2sp^3 hybridisation
59. Which of the following angle corresponds to sp^2 hybridisation?
(a) 120° (b) 180°
(c) 160° (d) 109°
60. Structure of H_2O_2 is
(a) Planar (b) Non-planar
(c) Linear (d) None of these
61. Which of the following oxides of nitrogen is solid?
(a) NO_2 (b) N_2O
(c) N_2O_3 (d) N_2O_5
62. Of the following sets which one does not contain isoelectronic species?
(a) PO_4^{3-} , SO_4^{2-} , ClO_4^-
(b) CN^- , N_2 , C_2^{2-}
(c) SO_3^{2-} , CO_3^{2-} , NO_3^-
(d) BO_3^{3-} , CO_3^{2-} , NO_3^-

63. What will be the number of σ and π bonds in CH_3COOH ?
(a) 1,7 (b) 5,2
(c) 7, 1 (d) 3,2

64. Hybridisation of Cl in ClO_2^- , is

(a) sp (b) s p^2
(c) sp^3 (d) None of these

65. Which of the following order of energies of molecular orbitals of N_2 is correct?

(a) $(\pi 2p_y) > (\sigma 2p_z) > (\pi 2p_x) \approx (\pi^* 2p_y)$
(b) $(\pi 2p_y) < (\sigma 2p_z) > (\pi 2p_x) \approx (\pi^* 2p_y)$
(c) $(\pi 2p_y) < (\sigma 2p_z) < (\pi 2p_x) \approx (\pi^* 2p_y)$
(d) $(\pi 2p_y) > (\sigma 2p_z) < (\pi 2p_x) \approx (\pi^* 2p_y)$

66. Which of the following has maximum dipole moment?

(a) NH_3 (b) H_2O
(c) HI (d) SO_3

67. Which one of the following options represents the correct bond order?

(a) $\text{O}_2^- < \text{O}_2 < \text{O}_2^+$
(b) $\text{O}_2^- > \text{O}_2 < \text{O}_2^+$
(c) $\text{O}_2^- < \text{O}_2 > \text{O}_2^+$
(d) $\text{O}_2^- > \text{O}_2 > \text{O}_2^+$

68. Number of bonds in SO_2

(a) Two σ and two π
(b) Two σ and one π
(c) Two σ , two π and one lone pair
(d) Two σ , One π and one lone pair

69. According to molecular orbital theory which of the following statement about the magnetic character and bond order is correct regarding O_2^+ ?

(a) paramagnetic and bond order $< \text{O}_2$
(b) paramagnetic and bond order $> \text{O}_2$
(c) diamagnetic and bond order $< \text{O}_2$
(d) diamagnetic and bond order $> \text{O}_2$

70. Nature of hybridisation in NH_3 molecule is

(a) sp (b) sp^2
(c) sp^3 (d) $\text{sp}^3 \text{ d}$

71. The states of hybridisation of boron and oxygen atoms in boric acid (H_3BO_3) are respectively The states of hybridisation of boron and oxygen atoms in

(a) sp^3 and sp^2 (b) sp^2 and sp^3
(c) sp^2 and sp^2 (d) sp^3 and sp^3

72. The maximum number of 90° angles between bond pair-bond pair of electrons is observed in

- (a) dsp^2 hybridisation (b) sp^3d hybridisation
(c) dsp^3 hybridisation (d) sp^3d^2 hybridisation
73. Which one of the following constitutes a group of the isoelectronic species?
(a) C_2^{2-} , O_2^- , CO, NO (b) NO, C_2^{2-} , CN^- , N_2
(c) CN^- , N_2 , O_2^{2-} , C_2^{2-} (d) N_2 , O_2 , NO, CO
74. Which of the following pairs of species have the same bond order?
(a) CN^- and O_2^- (b) CN^- and CN^+
(c) O_2 and CN^- (d) NO^+ and CN^-
75. Which is the correct electron dot structure of N_2O molecule?
(1) $\cdot N = N = \ddot{O}$ (2) $\cdot N \equiv N^+ - \ddot{O}^-$
(3) $\ddot{N} = \ddot{N} = \ddot{O}$ (4) $\cdot N = N = \ddot{O} \cdot$
76. Which of the following molecules is planar?
(a) $AlCl_3$ (dimer) (b) $SnCl_2$
(c) NI_3 (d) $CH_2 = CH_2$
77. Which of the following pentafluoride cannot be formed?
(a) PF_5 (b) AsF_5
(c) SbF_5 (d) BiF_5
78. Which of the following species have no unpaired electron?
(a) O_2^{+2} (b) O_2^+
(c) O_2^- (d) O_2
79. In $CuSO_4 \cdot 5H_2O$, bonds present are
(a) Ionic and covalent (b) Ionic and coordinate
(c) Ionic, coordinate and covalent
(d) Covalent and coordinate
80. Which of the following pair has linear shape?
(a) CO_2 , SO_2 (b) CO_2 , $BeCl_2$
(c) SO_2 , $BeCl_2$ (d) $BeCl_2$, $SnCl_2$

READ THE STATEMENTS CAREFULLY TO MARK THE CORRECT OPTION OUT OF THE OPTIONS GIVEN BELOW

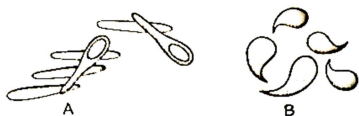
- (a) If both statements are true and Reason is the correct explanation of Assertion.
(b) If both statements are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If Assertion is false but Reason is true.

81. **Assertion:** Ionic reactions are faster than molecular reactions.
Reason: Ionic bonds are weaker than covalent bonds.
82. **Assertion:** Bond energy of H-H bond is greater than Cl-Cl bond.
Reason: H_2 is more covalent than Cl_2
83. **Assertion:** SO_2 is polar molecule.
Reason: SO_2 is covalent molecule.
84. **Assertion:** NF_3 molecule is less polar than NH_3 molecule.
Reason: NF_3 is pyramidal while NH_3 is trigonal planar
85. **Assertion:** NaCl in solid state is non-conductive.
Reason: It is a covalent compound.
86. **Assertion:** In the halides of lithium, LiF is insoluble in water.
Reason: LiF is most ionic, among halides of lithium.
87. **Assertion:** The atoms in a covalent molecule are said to share electrons, yet some covalent molecules are polar.
Reason: In polar covalent molecules, the shared electrons spend more time on the average near one of the atoms due to electronegativity.
88. **Assertion:** Na_2SO_4 is soluble in water while $BaSO_4$ is insoluble.
Reason: Lattice energy of $BaSO_4$ exceeds its hydration energy.
89. **Assertion:** NO_3^- is planar.
Reason: N in NO_3^- is sp^2 and no lone pair at central atom.
90. **Assertion:** N_2 and NO^+ both are diamagnetic substances.
Reason: NO^+ is isoelectronic with N_2

BIOLOGY

91. Which kingdom system of classification did not distinguish between prokaryotes and eukaryotes?
(a) Two kingdom system
(b) Five kingdom system
(c) Kingdom system given by Linnaeus
(d) Both (a) and (c)
92. Holozoic mode of nutrition is present in members of kingdom
(a) Protista (b) Animalia

- (c) Monera (d) Fungi
93. Five kingdom classifications has put together organisms which, in earlier classifications, were placed in different kingdoms. This happened because
 (a) Over time, one organism changed to another organisms
 (b) The criteria for classification changed
 (c) Some prokaryotes changed to eukaryotes
 (d) All of the above
94. Who was the earliest to attempt a more scientific basis for classification?
 (a) R.H. Whittaker (b) Linnaeus
 (c) Aristotle (d) Bentham and Hooker
95. Three domains of life include how many kingdoms?
 (a) Three (b) Four
 (c) Five (d) Six
96. Which one does not match with Whittaker's criteria of classification?
 (a) Cell structure (b) Thallus organisation
 (c) Phylogenetic relationship
 (d) Mode of spore formation
97. What is incorrect for Nostoc?
 (a) Heterocystous cyanobacteria
 (b) Presence of mucilagenous sheath
 (c) Presence of flagellate stage
 (d) Increases soil fertility
98. Most common mode of reproduction in bacteria is:
 (a) Endospore formation
 (b) Binary fission
 (c) Sexual reproduction
 (d) Conjugation
99. Which of the following are photosynthetic moneran?
 (a) Anabaena (c) Nostoc
 (c) Vibrio (d) Both (a) and (b)
100. Diagrammatically shown members are:



- (a) A-Bacilli, B - Spirilla
 (b) A- Rod-shaped bacteria with gamete, B - Nonmotile

- (c) A-Rod-shaped bacteria with spore, B - Pathogen of cholera
 (d) A-Coccus, B - Vibrio
101. Majority of bacteria are nutritionally:
 (a) Photoautotrophs (b) Chemoautotrophs
 (c) Symbionts (d) Heterotrophs
102. Chemosynthetic autotrophic bacteria:
 (a) Are Nitrocystis and Anabaena
 (b) Play a great role in recycling of minerals
 (c) Are important decomposers
 (d) More than one option is correct
103. Pellicle in Euglenoids is:
 (a) Proteinaceous, appears black
 (b) Proteinaceous, rigid
 (c) Cell membrane, flexible
 (d) Proteinaceous, flexible
104. In which of the following organism heterocyst is present?
 (a) Spirogyra (b) Amoeba
 (c) Anabena (d) Paramecium
105. Gonyaulax is an example of
 (a) Chrysophytes (b) Slime moulds
 (c) Dinoflagellates (d) Euglenoids
106. Which of the following features are seen in majority of the fungi?
- | | Mycelium | Nutrition | Cell wall |
|----------------|------------|------------|-----------|
| (a) Coenocytic | Saprophyte | Chitinous | |
| (b) Septate | Osmotroph | Cellulosic | |
| (c) Coenocytic | Parasites | Cellulosic | |
| (d) Septate | Saprophyte | Chitinous | |
107. Dikaryophase is seen in
 (a) Phycomycetes and basidiomycetes
 (b) Ascomycetes and deuteromycetes
 (c) Ascomycetes and basidiomycetes
 (d) Phycomycetes and deuteromycetes
108. Match the following columns and choose the correct option.
- | Column I | Column II |
|-------------------|-------------------|
| 1. Ascomycetes | a. |
| 2. Deuteromycetes | b. Agaricus |
| 3. Phycomycetes | c. Colletotrichum |
| 4. Basidiomycetes | d. Ustilago |
- (a) 1-a, 2-c, 3-b, 4-d
 (c) 1-c, 2-a, 3-d, 4-a
 (c) 1-a, 2-c, 3-d, 4-b
 (d) 1-c, 2-d, 3-c, 4-b

109. In phycomycetes, asexual reproduction takes place by
 (a) Zoospores (non-motile) or by aplanospores (motile)
 (b) Only zoospores (motile)
 (c) Zoospores (motile) or by aplanospores (non-motile)
 (d) Oospores (motile) or by aplanospores (non-motile)
110. Who prepare food in lichens?
 (a) Mycobiont (b) Fungi
 (c) Phycobiont (d) All of the above
111. Which of the following is not associated with structure of bacteriophage?
 (a) Head, tail, sheath
 (b) Tail fibres, sheath, collar
 (c) Collar, capsid, tail pins
 (d) Envelope, ss-DNA
112. Choose the correct option with respect to TMV.
 (a) Capsomeres are arranged in polyhedral form.
 (b) Possess noninfectious RNA.
 (c) Beijerinck found that they can pass through bacteria-proof filters.
 (d) Crystals consist largely of proteins
113. Viroids are small infectious particles, which are devoid of:
 (i) Capsomeres (ii) Enzymes
 (iii) Ribonucleic acid (iv) DNA
 (a) i, ii, and iii (b) i, iii, and iv
 (c) i, ii, and iv (d) ii, iii, and iv
114. Which of the following feature is not associated with prions?
 (a) Infectious to animals
 (b) Act as catalyst
 (c) Bring degeneration of nervous tissue
 (d) Resistant nucleoprotein particles
115. Viroids are different from viruses with respect to:
 (a) Size and cell type
 (b) Size and structural components
 (c) Structural organization and non-infectious nature
 (d) Multiplication and cellular organization
116. Mad cow disease in cattle is caused by
 (a) Viroid (b) Viruses
 (c) Prions (d) Bacteria
117. Which are smaller than viruses
 (a) Bacteria (b) Fungi
 (c) Cyanobacteria (d) Viroids
118. The following processes occur during photosynthesis:
 (I) Reduction of carbon dioxide
 (II) The splitting of water
 (III) The synthesis of glucose
 (IV) Formation of oxygen gas
 (V) Formation of ATP
 Which one of the following combinations is correct for the light phase?
 (a) (I), (II), and (III)
 (b) (III), (IV), and (V)
 (c) (I), (III), and (IV)
 (d) (II), (IV), and (V)
119. Which of the following cells in the leaves, have a large number of chloroplasts?
 (a) Lenticels (b) Mesophyll cells
 (c) Cuticle (d) Aerenchyma
120. The wavelengths at which maximum photosynthesis occurs in a plant is about
 (a) 440 nm and 660 nm
 (b) 500 nm and 700 nm
 (c) 500-600 nm
 (d) 450-600 nm
121. Read the following statements and choose the correct option
 (a) Using a prism TW Engelmann split light into its spectral components and then illuminated a green alga, *Cladophora*, placed in a suspension of anaerobic bacteria.
 (b) Photosynthesis is not a single reaction but description of a multistep process.
 (c) A similar setup as the one used by Priestley was used by Julius von Sachs.
 (d) All of the above
122. The percentage of light energy fixed in photosynthesis is generally around:
 (a) 50 (b) 70
 (c) 10 (d) 1
123. Joseph Priestley concluded that:
 (a) Release of O_2 by plants was possible only in sunlight.
 (b) Water is an essential requirement for photosynthesis to occur.
 (c) All the substance of the plant was produced from water and none from the soil.

- (d) Plants have the ability to take up CO_2 from the atmosphere and release O_2
124. In photosynthesis, O_2 released is from:
 (a) H_2O (b) CO_2
 (c) Both from H_2O and CO_2
 (d) Light
125. The major form of pigment present in thylakoids is:
 (a) Carotene (b) Xanthophyll
 (c) Chlorophyll (d) Phycobilins
126. Chlorophylls reflect the _____ light and impart _____ color to the leaves.
 (a) Red, green (b) Blue, green
 (c) Green, green (d) Violet, green
127. Select the incorrect statement with respect to non-cyclic photophosphorylation.
 (a) In PSII the reaction center chlorophyll-a absorbs 680 nm wavelength of red light.
 (b) Electrons in the reaction centre of PSI are excited when they receive red light of wavelength 700 nm.
 (c) NADP is reduced to $\text{NADPH} + \text{H}^+$
 (d) The excited electron does not pass on to NADP^+ , but is cycled back to the PSI complex through the ETS.
128. Release of electrons in photosynthesis is from:
 (a) Reaction center (b) Quantasome
 (c) Antenna molecules (d) Both (1) and (2)
129. How many light quanta, electrons, and water molecules, respectively, are needed to reduce one molecule of CO_2 , in photosynthesis?
 (a) 8,2,4 (b) 8,4,4
 (c) 8,4,2 (d) 9,4,2
130. A eukaryotic organism 'x' has cellular level of body organization, cell wall is the outermost covering of cell, nucleus is surrounded by nuclear membrane and has both autotrophic and heterotrophic mode of nutrition. Organism 'x' belongs to which kingdom?
 (a) Monera (b) Fungi
 (c) Protista (d) Plantae
131. Read the following statements and choose the incorrect option.
- (a) Linnaeus was the earliest to attempt a more scientific basis for classification.
 (b) Aristotle used simple morphological characters to classify plants into trees, shrubs and herbs.
 (c) Two kingdom system of classification was proposed by Linnaeus.
 (d) All statements are correct
132. Which feature of archaebacteria enables them to survive in extreme environmental conditions?
 (a) Cell wall structure (b) Cell type
 (c) Mode of nutrition (d) Habitat
133. Which one of the following plays an important role in biogas production?
 (a) Eubacteria with photosynthetic pigments
 (b) Methanogens (c) Halophiles
 (d) Thermoacidophiles
134. Cell wall is made of noncellulosic polysaccharides and amino acids in:
 (a) Eubacteria only
 (b) Eubacteria and archaebacteria
 (c) Protista (d) Fungi
135. Which statement is incorrect?
 (a) Though the bacterial structure is very complex, but they are very simple in behaviour.
 (b) Bacteria as a group show the most extensive metabolic diversity.
 (c) Bacteria may be photosynthetic autotrophs or chemosynthetic autotrophs.
 (d) The vast majority of bacteria are heterotrophs.
136. Tetanus and citrus canker are
 (a) Bacterial and fungal disease respectively
 (b) Fungal and bacterial disease respectively
 (c) Viral and bacterial disease respectively
 (d) Bacterial diseases
137. Bacteria reproduce by a sort of sexual reproduction by
 (a) Gamete formation and fertilization
 (b) Adopting a primitive type of DNA transfer from one bacterium to the other
 (c) Sporulation
 (d) All of the above
138. Among the following, which is/are photosynthetic autotrophs?

- (A) Archaeobacteria (B) Fungi
(C) Cyanobacteria

Choose the correct option

- (a) A,C (b) A,B
(c) C only (d) A,B,C

139. Archaeobacteria are the special type of bacteria since they live in some of the harsh habitats such as extreme salty areas are called

- (A) Halophiles (B) Methanogens
(C) Thermoacidophiles

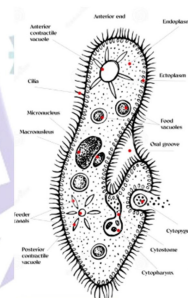
Choose the correct option.

- (a) A (b) A, B
(c) B, C (d) A, B, C

140. Fresh water photosynthetic protists of stagnant water show dual behaviour in

- (a) Nutrition and reproduction
(b) Respiration and spore formation
(c) Nutrition and movement
(d) Locomotion and respiration

141. Choose correct option for the organism given below.



- (i) Possess gullet
(ii) Shows predator mode of nutrition
(iii) Aquatic, passively moving organism
(iv) Forms infectious spore-like stage
(a) i and ii (b) iii and iv
(c) ii and iii (d) i and iv

142. How many of the given below features of Protista are not similar to prokaryotes ?

Asexual reproduction, Cell membrane composition, Cell type, Body organisation, Cell wall composition, Zygote formation

- (a) Two (b) Three
(c) Four (d) Five

143. Saprophytic protists resemble fungi in: (where N Nutrition, S Spore formation, C - Cell wall composition, F Fruiting bodies, P Plasmodium formation)

- (a) N, S, P (b) S, C, F
(c) N, S, F (d) S, P, F

144. Members of which of the following protozoan group possess silica shells?

- (a) Amoeboids (b) Flagellates
(c) Ciliates (d) Sporozoans

145. Infectious spore-like stage is present in the life cycle of:

- (a) Amoeba (b) Paramoecium
(c) Trypanosoma (d) Plasmodium

146. Body of euglenoids are flexible due to

- (a) Cellulose (b) Peptidoglycan
(c) Protein rich layer (d) Cell wall

147. Select the mismatch pair

- (a) Amoeboid protozoans - Pseudopodia
(b) Flagellated protozoans - Sleeping sickness
(c) Ciliated protozoans - Gullet
(d) Sporozoans - Trypanosomiasis

148. Plasmodium belongs to the class

- (a) Ciliates (b) Flagellates
(c) Amoeboids (d) Sporozoans

149. Which organism have an infectious spore like stage in their life cycle?

- (a) Amoeboid protozoans
(b) Flagellated protozoans
(c) Ciliated protozoans
(d) Sporozoans

150. Which are believed to be primitive relative of animals?

- (a) Protozoans (b) Porifers
(c) Euglenoids (d) Archaeobacteria

151. Diatomaceous earth is used in polishing, filtration of oils and syrups due to its

- (a) Slimy nature (b) Gritty nature
(c) Dusty nature (d) Hard nature

152. Mode of reproduction exhibited by the protists is

- (a) Asexual reproduction
(b) Sexual reproduction
(c) Both asexual and sexual reproduction
(d) A sort of sexual reproduction

153. How many of the given below spores are formed in members belonging to class phycomycetes?

- (a) Zygosporangium (b) Zoospore
(c) Conidiophores (d) Basidiospores

- (e) Aplanospore (f) Ascospores
(a) Three (b) Four
(c) Five (d) Six
154. An organism 'x' is a unicellular fungus, used to make bread and beer. Organism 'x' belongs to which class of fungi?
(a) Ascomycetes (b) Basidiomycetes
(c) Deuteromycetes (d) Phycomycetes
155. Organism 'x' is used extensively in biochemical and genetic work. Organism 'x' belongs to
(a) Basidiomycetes (b) Deuteromycetes
(c) Ascomycetes (d) Phycomycetes
156. Read the following statements and choose the correct option.
(a) In deuteromycetes, the mycelium is aseptate and branched.
(b) In basidiomycetes, the basidia are arranged in fruiting bodies called basidiopores.
(c) In deuteromycetes, when the linkages were established, the fungi were correctly identified and moved out of deuteromycetes.
(d) All statements are correct
157. The members of which of the following class of fungi are saprophytic, decomposers, parasitic or coprophilous (growing on dung) and mycelium is branched and septate?
(a) Phycomycetes (b) Basidiomycetes
(c) Ascomycetes (d) Deuteromycetes
158. Select the correct match.
(a) Gametes with similar morphology - Isogamous
(b) Gametes with dissimilar morphology - Anisogamous
(c) Gametes with dissimilar morphology with one motile and one non-motile gamete Oogamous
(d) All of the above are correct
159. In which of the following option, all the members belong to same class of fungi?
(a) Mushroom, morels and truffles
(b) Ustilago, Puccinia and Neurospora
(c) Aspergillus, Claviceps and Penicillium
(d) Alternaria, Colletotrichum and Albugo

160. Which of the following option include all the edible fungi?
(a) Morels and truffles
(b) Ustilago, morels and truffles
(c) Agaricus, morels and truffles
(d) Alternaria, Colletotrichum and Trichoderma
161. In which of the following class of fungi, sex organs are absent, but plasmogamy is brought about by fusion of two vegetative or somatic cells of different strains or genotypes?
(a) Ascomycetes (b) Basidiomycetes
(c) Deuteromycetes (d) Phycomycetes
162. Asexual spores are generally absent in
(a) Ustilago (b) Trichoderma
(c) Neurospora (d) Yeast
163. In C_3 plants, photosynthesis occurs in
(a) Bundle sheath cells (b) Peroxisomes
(c) Mesophyll cells (d) Kranz anatomy
164. Hydrogen donor during photosynthesis is
(a) NADH (b) ATP
(c) NADP (d) NADPH
165. Rate of photosynthesis is higher in
(a) Very high light (b) Red light
(c) Green light (d) Continuous light
166. Which pigment takes part in light reaction of photosynthesis?
(a) Xanthophyll (b) Chl a
(c) Carotene (d) Phycoxanthin
- INSTRUCTION FOR QUESTIONS 167-180
IN EACH OF THE FOLLOWING QUESTION, A STATEMENT OF ASSERTION IS FOLLOWED BY A CORRESPONDING STATEMENT OF REASON. MARK THE CORRECT ANSWER AS PER THE INSTRUCTIONS GIVEN BELOW.
(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

167. **Assertion:** Besides chlorophyll a, blue-green and red algae show the presence of phycobilin proteins.

Reason: Chlorophyll and phycobilin proteins are integrated into thylakoids.

168. **Assertion:** Blue-green bacteria perform oxygenic photosynthesis.

Reason: Purple bacteria and green bacteria perform anoxygenic photosynthesis.

169. **Assertion:** PSI and PSII are distinctive reaction centers of each prokaryotes.

Reason: PSI is composed of P700 and PSII is composed of chlorophyll P 680

170. **Assertion:** In oxidative phosphorylation, the electrons flow from NADH to O₂.

Reason: In photosynthesis, the electrons flow from H₂O to NADPH.

171. **Assertion:** The stromal thylakoids are rich in both PSI and PSII.

Reason: The granal membranes are rich in ATP synthetase.

172. **Assertion:** Two photosystems are connected by electron transport chain.

Reason: Electron transport chain in chloroplasts is a fixed structure.

173. **Assertion:** Photophosphorylation requires light.

Reason: Photophosphorylation occurs in chloroplast.

174. **Assertion:** Chlorophyll a and chlorophyll b are structurally different.

Reason: Chlorophyll a contains methyl group, whereas chlorophyll b contains formyl group.

175. **Assertion:** Photocenter of PSI is a special chlorophyll a molecule.

Reason: PSI contains more chlorophyll a.

176. **Assertion:** Cyclic photophosphorylation is shown by both PSI and PSII.

Reason: In cyclic phosphorylation, the electron moves from PSI to PSII and PSII to PSI.

177. **Assertion:** Archaeobacteria can survive in extreme conditions.

Reason: They have different cell wall structure.

178. **Assertion:** Euglena is considered as connecting link between plant and animal.

Reason: In presence of sunlight, Euglena starts photosynthesis while in absence of sunlight it behaves as a heterotroph.

179. **Assertion:** Two kingdom classification used for a long time was found inadequate.

Reason: A large number of organisms did not fall into either category (ie., Plants and animals).

180. **Assertion:** All protozoans are heterotrophs and live as predators or parasites.

Reason: They are believed to be primitive relatives of animals.