

NEET 2020 – Previous Year Question Paper

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Physics · 29 Qs

- A screw gauge has least count of 0.01 mm and there are 50 divisions in its circular scale. The pitch of the screw gauge is:
(1) 0.5 mm (2) 1.0 mm
(3) 0.01 mm (4) 0.25 mm
- Taking into account the significant figures, what is the value of 9.99 m - 0.0099 m?
(1) 9.980 m (2) 9.9 m
(3) 9.901 m (4) 9.98 m
- Dimensions of stress are:
(1) ML^0T^{-2} (2) $ML^{-1}T^{-2}$
(3) MLT^{-2} (4) ML^2T^{-2}
- The capacitance of a parallel plate capacitor with air as medium is 6 microF. With the introduction of a dielectric medium, the capacitance becomes 30 microF. The permittivity of the medium is: ($\epsilon_0 = 8.85 \times 10^{-12} C^2 N^{-1} m^{-2}$)
(1) $0.44 \times 10^{-10} C^2 N^{-1} m^{-2}$ (2) $5.00 C^2 N^{-1} m^{-2}$
(3) $0.44 \times 10^{-13} C^2 N^{-1} m^{-2}$ (4) $1.77 \times 10^{-12} C^2 N^{-1} m^{-2}$
- A short electric dipole has a dipole moment of $16 \times 10^{-9} Cm$. The electric potential due to the dipole at a point at a distance of 0.6 m from the centre of the dipole, situated on a line making an angle of 60 degrees with the dipole axis is: ($\frac{1}{4\pi\epsilon_0} = 9 \times 10^9 N M^2 / C^2$)
(1) 400 V (2) Zero
(3) 50 V (4) 200 V

6. A ball is thrown vertically downward with a velocity of 20 m/s from the top of a tower. It hits the ground after some time with a velocity of 80 m/s. The height of the tower is ($g = 10 \text{ m/s}^2$):
- (1) 340 m (2) 300 m
(3) 320 m (4) 360 m
-
7. A long solenoid of 50 cm length having 100 turns carries a current 2.5 A. The magnetic field at the centre of the solenoid is ($\mu_0 = 4\pi \times 10^{-7} \text{ T m A}^{-1}$)
- (1) $6.28 \times 10^{-5} \text{ T}$ (2) $3.14 \times 10^{-5} \text{ T}$
(3) $6.28 \times 10^{-4} \text{ T}$ (4) $3.14 \times 10^{-4} \text{ T}$
-
8. An iron rod of susceptibility 599 is subjected to a magnetising field of 1200 A m^{-1} . The permeability of the material of the rod is ($\mu_0 = 4\pi \times 10^{-7} \text{ T m A}^{-1}$):
- (1) $2.4\pi \times 10^{-5} \text{ T m A}^{-1}$ (2) $2.4\pi \times 10^{-7} \text{ T m A}^{-1}$
(3) $2.4\pi \times 10^{-4} \text{ T m A}^{-1}$ (4) $8.0 \times 10^{-5} \text{ T m A}^{-1}$
-
9. The torque about the origin when a force $3\hat{j} \text{ N}$ acts on a particle whose position vector is $2\hat{k} \text{ m}$ is:
- (1) $-6\hat{i} \text{ N m}$ (2) $6\hat{k} \text{ N m}$
(3) $6\hat{i} \text{ N m}$ (4) $6\hat{j} \text{ N m}$
-
10. Two particles of mass 5 kg and 10 kg are attached to the ends of a rigid massless rod of length 1 m. The distance of the centre of mass from the 5 kg particle is nearly:
- (1) 67 cm (2) 80 cm
(3) 33 cm (4) 50 cm
-
11. A series LCR circuit is connected to an ac voltage source. When L is removed from the circuit, the phase difference between current and voltage is $\pi/3$. If instead C is removed from the circuit, the phase difference is again $\pi/3$ between current and voltage. The power factor of the circuit is
- (1) 1.0 (2) -1.0
(3) Zero (4) 0.5
-
12. A $40 \mu\text{F}$ capacitor is connected to a 200 V, 50 Hz ac supply. The rms value of the current in the circuit is, nearly:
- (1) 2.5 A (2) 25.1 A
(3) 1.7 A (4) 2.05 A
-
13. Light with an average flux of 20 W/cm^2 falls on a non-reflecting surface at normal incidence having surface area 20 cm^2 . The energy received by the surface during a time span of 1 minute is
- (1) $24 \times 10^3 \text{ J}$ (2) $48 \times 10^3 \text{ J}$
(3) $10 \times 10^3 \text{ J}$ (4) $12 \times 10^3 \text{ J}$
-
14. The ratio of contributions made by the electric field and magnetic field components to the intensity of an electromagnetic wave is ($c = \text{speed of electromagnetic waves}$)
- (1) 1 : c (2) 1 : c^2
(3) c : 1 (4) 1 : 1

15. A charged particle having drift velocity $7.5 \times 10^{-4} \text{ m s}^{-1}$ in an electric field of $3 \times 10^{-10} \text{ V m}^{-1}$ has a mobility (in $\text{m}^2 \text{ V}^{-1} \text{ s}^{-1}$) of:

(1) 2.5×10^{-6}

(2) 2.25×10^{-15}

(3) 2.25×10^{15}

(4) 2.5×10^6

16. A resistance wire in the left gap of a metre bridge balances a 10Ω resistance in the right gap at a point dividing the wire 3:2. If the wire length is 1.5 m, the length corresponding to 1Ω is:

(1) $1.5 \times 10^{-1} \text{ m}$

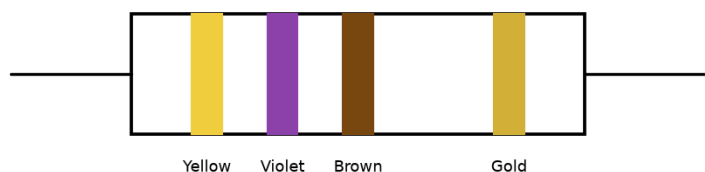
(2) $1.5 \times 10^{-2} \text{ m}$

(3) $1.0 \times 10^{-2} \text{ m}$

(4) $1.0 \times 10^{-1} \text{ m}$

17. The colour code of a resistance is given (Yellow, Violet, Brown, Gold). The values of resistance and tolerance, respectively, are:

resistor with colour bands



(1) $4.7 \text{ k}\Omega$, 5%

(2) 470Ω , 5%

(3) $470 \text{ k}\Omega$, 5%

(4) $47 \text{ k}\Omega$, 10%

18. The solids which have the negative temperature coefficient of resistance are:

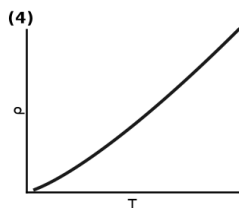
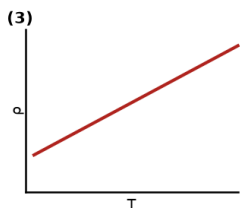
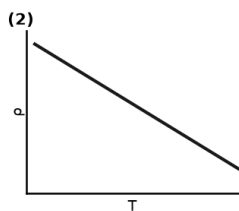
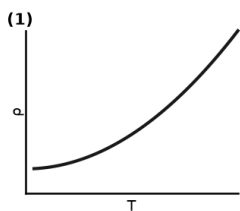
(1) Semiconductors only

(2) Insulators and semiconductors

(3) Metals

(4) Insulators only

19. Which of the following graphs represents the variation of resistivity (ρ) with temperature (T) for copper?



(1) steeply rising, concave-up

(2) decreasing curve

(3) straight line, positive slope from a small intercept

(4) curve through origin

20. A ray is incident at an angle of incidence i on one surface of a small angle prism (with angle of prism A) and emerges normally from the opposite surface. If the refractive index of the material of the prism is μ , then the angle of incidence i is nearly equal to
- (1) μA (2) $\mu A/2$
(3) $A/(2\mu)$ (4) $2A/\mu$
-
21. The quantities of heat required to raise the temperature of two solid copper spheres of radii r_1 and r_2 ($r_1 = 1.5 r_2$) through 1 K are in the ratio $Q_1 : Q_2$ equal to:
- (1) $3/2$ (2) $5/3$
(3) $27/8$ (4) $9/4$
-
22. Assume that light of wavelength 600 nm is coming from a star. The limit of resolution of telescope whose objective has a diameter of 2 m is
- (1) 7.32×10^{-7} rad (2) 6.00×10^{-7} rad
(3) 3.66×10^{-7} rad (4) 1.83×10^{-7} rad
-
23. The Brewster's angle i_B for an interface should be
- (1) $45^\circ < i_B < 90^\circ$ (2) $i_B = 90^\circ$
(3) $0^\circ < i_B < 30^\circ$ (4) $30^\circ < i_B < 45^\circ$
-
24. An electron is accelerated from rest through a potential difference of V volt. If the de Broglie wavelength of the electron is 1.227×10^{-2} nm, the potential difference is:
- (1) 10^3 V (2) 10^4 V
(3) 10 V (4) 10^2 V
-
25. Light of frequency 1.5 times the threshold frequency is incident on a photosensitive material. What will be the photoelectric current if the frequency is halved and intensity is doubled?
- (1) one-fourth (2) zero
(3) doubled (4) four times
-
26. The average thermal energy for a mono-atomic gas is: (k_B is the Boltzmann constant and T the absolute temperature)
- (1) $(5/2) k_B T$ (2) $(7/2) k_B T$
(3) $\frac{1}{2} k_B T$ (4) $(3/2) k_B T$
-
27. The phase difference between displacement and acceleration of a particle in simple harmonic motion is
- (1) $\pi/2$ rad (2) zero
(3) π rad (4) $3\pi/2$ rad
-
28. The increase in the width of the depletion region in a p-n junction diode is due to:
- (1) Both forward bias and reverse bias (2) Increase in forward current
(3) Forward bias only (4) Reverse bias only

29. In a guitar, two strings A and B of the same material are slightly out of tune and produce beats of frequency 6 Hz. When the tension in B is slightly decreased, the beat frequency increases to 7 Hz. If the frequency of A is 530 Hz, the original frequency of B is:
- (1) 536 Hz (2) 537 Hz
(3) 523 Hz (4) 524 Hz

Chemistry · 39 Qs

30. The mixture which shows positive deviation from Raoult's law is:
- (1) Acetone + Chloroform (2) Chloroethane + Bromoethane
(3) Ethanol + Acetone (4) Benzene + Toluene
31. The freezing point depression constant (K_f) of benzene is $5.12 \text{ K kg mol}^{-1}$. The freezing point depression for the solution of molality 0.078 m containing a non-electrolyte solute in benzene is (rounded off upto two decimal places):
- (1) 0.40 K (2) 0.60 K
(3) 0.20 K (4) 0.80 K
32. Which one of the following has the maximum number of atoms?
- (1) 1 g of $\text{O}_2(\text{g})$ [at. mass O = 16] (2) 1 g of $\text{Li}(\text{s})$ [at. mass Li = 7]
(3) 1 g of $\text{Ag}(\text{s})$ [at. mass Ag = 108] (4) 1 g of $\text{Mg}(\text{s})$ [at. mass Mg = 24]
33. On electrolysis of dil. sulphuric acid using platinum (Pt) electrodes, the product obtained at the anode will be:
- (1) H_2S gas (2) SO_2 gas
(3) Hydrogen gas (4) Oxygen gas
34. The number of Faradays (F) required to produce 20 g of calcium from molten CaCl_2 (Atomic mass of Ca = 40 g mol⁻¹) is:
- (1) 3 (2) 4
(3) 1 (4) 2
35. The number of protons, neutrons and electrons in ${}_{71}^{175}\text{Lu}$, respectively, are:
- (1) 71, 71 and 104 (2) 175, 104 and 71
(3) 71, 104 and 71 (4) 104, 71 and 71
36. The calculated 'spin-only' magnetic moment of Ti^{2+} ($3d^2$) is:
- (1) 5.92 BM (2) 3.87 BM
(3) 2.84 BM (4) 4.90 BM
37. The rate constant for a first order reaction is $4.606 \times 10^{-3} \text{ s}^{-1}$. The time required to reduce 2.0 g of the reactant to 0.2 g is:
- (1) 500 s (2) 1000 s
(3) 100 s (4) 200 s

38. An increase in the concentration of the reactants of a reaction leads to change in:
- | | |
|-----------------------|-------------------------|
| (1) Threshold energy | (2) Collision frequency |
| (3) Activation energy | (4) Heat of reaction |
-

39. Match the following oxides with their nature.

Column-I (Oxide)

- (a) CO
- (b) BaO
- (c) Al_2O_3
- (d) Cl_2O_7

Column-II (Nature)

- (i) Basic
- (ii) Neutral
- (iii) Acidic
- (iv) Amphoteric

Which one of the following is correct?

- | | |
|--|--|
| (1) (a)-(iii); (b)-(iv); (c)-(i); (d)-(ii) | (2) (a)-(iv); (b)-(iii); (c)-(ii); (d)-(i) |
| (3) (a)-(i); (b)-(ii); (c)-(iii); (d)-(iv) | (4) (a)-(ii); (b)-(i); (c)-(iv); (d)-(iii) |
-

40. Match the following IUPAC provisional names with their IUPAC official names.

Column-I (Name)

- (a) Unnilunium
- (b) Unniltrium
- (c) Unnilhexium
- (d) Unununnium

Column-II (IUPAC Official name)

- (i) Mendeleevium
- (ii) Lawrencium
- (iii) Seaborgium
- (iv) Darmstadtium

Which one of the following is correct?

- | | |
|---------------|--------------|
| (1) (c)-(iii) | (2) (d)-(iv) |
| (3) (a)-(i) | (4) (b)-(ii) |
-

41. Identify a molecule which does not exist.

- | | |
|------------|------------|
| (1) C_2 | (2) O_2 |
| (3) He_2 | (4) Li_2 |
-

42. Which of the following set of molecules will have zero dipole moment?
- (1) Nitrogen trifluoride, beryllium difluoride, water, 1,3-dichlorobenzene
(2) Boron trifluoride, beryllium difluoride, carbon dioxide, 1,4-dichlorobenzene
(3) Ammonia, beryllium difluoride, water, 1,4-dichlorobenzene
(4) Boron trifluoride, hydrogen fluoride, carbon dioxide, 1,3-dichlorobenzene
-
43. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2]
Which of the following statements is not correct about diborane?
- (1) There are two 3-centre-2-electron bonds.
(2) The four terminal B-H bonds are two-centre two-electron bonds.
(3) The four terminal hydrogen atoms and the two boron atoms lie in one plane.
(4) Both the boron atoms are sp^2 hybridised.
-
44. Identify the incorrect statement.
- (1) Interstitial compounds are those that are formed when small atoms like H, C or N are trapped inside the crystal lattices of metals.
(2) The oxidation states of chromium in CrO_4^{2-} and $\text{Cr}_2\text{O}_7^{2-}$ are not the same.
(3) Cr^{2+} (d^4) is a stronger reducing agent than Fe^{2+} (d^6) in water.
(4) The transition metals and their compounds are known for their catalytic activity due to their ability to adopt multiple oxidation states and to form complexes.
-
45. The calculated spin only magnetic moment of Cr^{2+} ion is:
- (1) 5.92 BM
(2) 2.84 BM
(3) 3.87 BM
(4) 4.90 BM
-
46. The calculated 'spin-only' magnetic moment of Ti^{2+} ($3d^2$) is:
- (1) 5.92 BM
(2) 3.87 BM
(3) 2.84 BM
(4) 4.90 BM
-
47. Which of the following is the correct order of increasing field strength of ligand to form coordination compound?
- (1) $\text{F}^- < \text{SCN}^- < \text{C}_2\text{O}_4^{2-} < \text{CN}^-$
(2) $\text{CN}^- < \text{C}_2\text{O}_4^{2-} < \text{SCN}^- < \text{F}^-$
(3) $\text{SCN}^- < \text{F}^- < \text{C}_2\text{O}_4^{2-} < \text{CN}^-$
(4) $\text{SCN}^- < \text{F}^- < \text{CN}^- < \text{C}_2\text{O}_4^{2-}$
-
48. Urea reacts with water to form A, which decomposes to form B. B, when passed through Cu^{2+} (aq), gives a deep-blue coloured solution C. What is the formula of C?
- (1) $\text{Cu}(\text{OH})_2$
(2) $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$
(3) CuSO_4
(4) $[\text{Cu}(\text{NH}_3)_4]^{2+}$
-
49. Reaction between acetone and methylmagnesium chloride, followed by hydrolysis, will give:
- (1) tert-Butyl alcohol
(2) Isobutyl alcohol
(3) Isopropyl alcohol
(4) sec-Butyl alcohol

50. The elimination reaction of 2-bromopentane to form pent-2-ene is:

- (a) a β -elimination reaction
- (b) follows Zaitsev (Saytzeff) rule
- (c) a dehydrohalogenation reaction
- (d) a dehydration reaction

The correct set of statements is:

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

51. What is the change in oxidation number of carbon in the following reaction?



- | | |
|------------------|-----------------|
| (1) -4 to $+4$ | (2) 0 to -4 |
| (3) $+4$ to $+4$ | (4) 0 to $+4$ |

52. Which of the following alkanes cannot be made in good yield by the Wurtz reaction?

- | | |
|---------------|------------------------|
| (1) n-Heptane | (2) n-Butane |
| (3) n-Hexane | (4) 2,3-dimethylbutane |

53. The correct option for free expansion of an ideal gas under adiabatic condition is:

- | | |
|--|--|
| (1) $q < 0$, $\Delta T = 0$ and $w = 0$ | (2) $q > 0$, $\Delta T > 0$ and $w > 0$ |
| (3) $q = 0$, $\Delta T = 0$ and $w = 0$ | (4) $q = 0$, $\Delta T < 0$ and $w > 0$ |

54. Hydrolysis of sucrose is given by the following reaction: $\text{Sucrose} + \text{H}_2\text{O} \rightleftharpoons \text{Glucose} + \text{Fructose}$. If the equilibrium constant (K_c) is 2×10^{13} at 300 K, the value of $\Delta_r G^\circ$ at the same temperature will be:

- | | |
|--|--|
| (1) $8.314 \text{ J mol}^{-1} \text{ K}^{-1} \times 300 \text{ K} \times \ln(3 \times 10^{13})$ | (2) $-8.314 \text{ J mol}^{-1} \text{ K}^{-1} \times 300 \text{ K} \times \ln(4 \times 10^{13})$ |
| (3) $-8.314 \text{ J mol}^{-1} \text{ K}^{-1} \times 300 \text{ K} \times \ln(2 \times 10^{13})$ | (4) $8.314 \text{ J mol}^{-1} \text{ K}^{-1} \times 300 \text{ K} \times \ln(2 \times 10^{13})$ |

55. For the reaction $2 \text{Cl}(\text{g}) \longrightarrow \text{Cl}_2(\text{g})$, the correct option is:

- | | |
|---|---|
| (1) $\Delta_r H < 0$ and $\Delta_r S > 0$ | (2) $\Delta_r H < 0$ and $\Delta_r S < 0$ |
| (3) $\Delta_r H > 0$ and $\Delta_r S > 0$ | (4) $\Delta_r H > 0$ and $\Delta_r S < 0$ |

56. Anisole on cleavage with HI gives

- | | |
|--|--|
| (1) $\text{C}_6\text{H}_5\text{OH} + \text{C}_2\text{H}_5\text{I}$ | (2) $\text{C}_6\text{H}_5\text{I} + \text{C}_2\text{H}_5\text{OH}$ |
| (3) $\text{C}_6\text{H}_5\text{OH} + \text{CH}_3\text{I}$ | (4) $\text{C}_6\text{H}_5\text{I} + \text{CH}_3\text{OH}$ |

57. The reaction between benzaldehyde and acetophenone in the presence of dilute NaOH is known as:

- | | |
|---------------------------------|------------------------------|
| (1) Cross Cannizzaro's reaction | (2) Cross aldol condensation |
| (3) Aldol condensation | (4) Cannizzaro's reaction |

58. The reaction between acetone (CH_3COCH_3) and methylmagnesium chloride (CH_3MgCl) followed by hydrolysis gives

- | | |
|--------------------------------|-------------------------------|
| (1) <i>tert</i> -butyl alcohol | (2) isobutyl alcohol |
| (3) isopropyl alcohol | (4) <i>sec</i> -butyl alcohol |

59. Identify compound X in the following reaction: $\text{C}_6\text{H}_5\text{-CH}_3 \xrightarrow{\text{Cl}_2, \text{h}\nu} \text{X} \xrightarrow{\text{H}_2\text{O}, 373 \text{ K}} \text{C}_6\text{H}_5\text{-CHO}$

- (1) Benzal chloride $\text{C}_6\text{H}_5\text{-CHCl}_2$ (2) Benzotrichloride $\text{C}_6\text{H}_5\text{-CCl}_3$
(3) Chlorobenzene $\text{C}_6\text{H}_5\text{-Cl}$ (4) Benzyl chloride $\text{C}_6\text{H}_5\text{-CH}_2\text{Cl}$

60. Which of the following amines will give the carbylamine test?

- (1) $\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2$ (N,N-dimethylaniline) (2) $\text{C}_6\text{H}_5\text{NHC}_2\text{H}_5$ (N-ethylaniline)
(3) $\text{C}_6\text{H}_5\text{NH}_2$ (aniline) (4) $\text{C}_6\text{H}_5\text{NHCH}_3$ (N-methylaniline)

61. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2]
Which of the following statements is not correct?

- (1) Insulin maintains sugar level in the blood of a human body (2) Ovalbumin is a simple food reserve in egg-white
(3) Blood proteins thrombin and fibrinogen are involved in blood clotting (4) Denaturation makes the proteins more active

62. Which of the following is a basic amino acid?

- (1) Tyrosine (2) Lysine
(3) Serine (4) Alanine

63. Sucrose on hydrolysis gives:

- (1) α -D-Glucose + β -D-Fructose (2) α -D-Fructose + β -D-Fructose
(3) β -D-Glucose + α -D-Fructose (4) α -D-Glucose + β -D-Glucose

64. A tertiary butyl carbocation is more stable than the secondary butyl carbocation because of which one of the following?

- (1) -R effect of $-\text{CH}_3$ group (2) Hyperconjugation
(3) -I effect of $-\text{CH}_3$ groups (4) +R effect of $-\text{CH}_3$ groups

65. Paper chromatography is an example of

- (1) Thin layer chromatography (2) Column chromatography
(3) Adsorption chromatography (4) Partition chromatography

66. For the elimination reaction of 2-bromopentane to form pent-2-ene, consider the following statements:

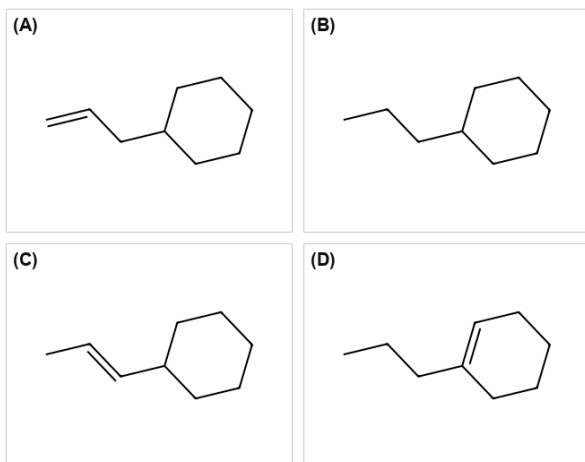
- (a) It is a β -elimination reaction.
(b) It follows Zaitsev's rule.
(c) It is a dehydrohalogenation reaction.
Which of the statements are correct?

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

67. Which of the following alkane cannot be made in good yield by Wurtz reaction?

- (1) n-Heptane (2) n-Butane
(3) n-Hexane (4) 2,3-dimethylbutane

68. An alkene on ozonolysis gives methanal (HCHO) as one of the products. Its structure is:



(1) (A)

(2) (B)

(3) (C)

(4) (D)

Biology · 85 Qs

69. In water hyacinth and water lily, pollination takes place by:

(1) Wind and water

(2) Insects and water

(3) Insects or wind

(4) Water currents only

70. The body of the ovule is fused within the funicle at

(1) Nucellus

(2) Chalaza

(3) Hilum

(4) Micropyle

71. The plant parts which consist of two generations one within the other:

(a) Pollen grains inside the anther

(b) Germinated pollen grain with two male gametes

(c) Seed inside the fruit

(d) Embryo sac inside the ovule

(A) (c) and (d)

(B) (a) and (d)

(C) (a) only

(D) (a), (b) and (c)

(1) (c) and (d)

(2) (a) and (d)

(3) (a) only

(4) (a), (b) and (c)

72. According to Robert May, the global species diversity is about:

(1) 50 million

(2) 7 million

(3) 1.5 million

(4) 20 million

73. [NEET 2017 · NEET 2018 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 1] Which of the following statements is correct
- (1) Lichens do not grow in polluted areas. (2) Algal component of lichens is called mycobiont.
(3) Fungal component of lichens is called phycobiont (4) Lichens are not good pollution indicators.
-
74. Which of the following is correct about viroids?
- (1) They have DNA with protein coat (2) They have free DNA without protein coat
(3) They have RNA with protein coat (4) They have free RNA without protein coat
-
75. Meiotic division of the secondary oocyte is completed:
- (1) After zygote formation (2) At the time of fusion of a sperm with an ovum
(3) Prior to ovulation (4) At the time of copulation
-
76. Match the following columns and select the correct option.
- Column-I
(a) Placenta
(b) Zona pellucida
(c) Bulbourethral Glands
(d) Leydig cells
- Column-II
(i) Androgens
(ii) Human Chorionic Gonadotropin (HCG)
(iii) Layer of the ovum
(iv) Lubrication of the penis
- (1) a-iii, b-ii, c-iv, d-i (2) a-ii, b-iii, c-iv, d-i
(3) a-iv, b-iii, c-i, d-ii (4) a-i, b-iv, c-ii, d-iii
-
77. Which of the following hormone levels will cause release of ovum (ovulation) from the graafian follicle?
- (1) Low concentration of LH (2) Low concentration of FSH
(3) High concentration of Estrogen (4) High concentration of progesterone
-
78. Which of the following pairs is of unicellular algae?
- (1) Anabaena and Volvox (2) Chlorella and Spirulina
(3) Laminaria and Sargassum (4) Gelidium and Gracilaria
-
79. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2] Which of the following statements is true?
- (1) Most algal genera are diplontic (2) Most bryophytes do not have haplo-diplontic life cycle
(3) All pteridophytes exhibit haplo-diplontic pattern (4) Seed bearing plants follow haplontic pattern
-
80. [NEET 2016 Phase 1 · NEET 2018 · NEET 2019 Odisha · NEET 2020] Select the correct statement:
- (1) Gymnosperms are both homosporous and heterosporous (2) Salvinia, ginkgo and pinus all are gymnosperms
(3) Sequoia is one of the tallest trees (4) The leaves of gymnosperms are not well adapted to extremes of climate

81. Strobili or cones are found in:

- | | |
|----------------|---------------|
| (1) Marchantia | (2) Equisetum |
| (3) Salvinia | (4) Pteris |

82. In which of the following techniques, the embryo are transferred to assist those females who cannot conceive?

- | | |
|-------------------|-------------------|
| (1) ICSI and ZIFT | (2) GIFT and ICSI |
| (3) ZIFT and IUT | (4) GIFT and ZIFT |

83. Select the option including all sexually transmitted diseases.

- | | |
|--|---|
| (1) AIDS Malaris, Filaria | (2) Cancer, AIDS, Syphilis |
| (3) Gonorrhoea, Syphilis, Genital herpes | (4) Gonorrhoea, Malaria, Genital herpes |

84. Which of the following statements are true for the phylum Chordata?

Statements:

- (a) In Urochordata notochord extends from head to tail and it is present throughout their life.
- (b) In Vertebrates notochord is present during the embryonic period only.
- (c) Central nervous system is dorsal and hollow.
- (d) Chordata is divided into 3 subphyla: Hemichordata, Tunicata and Cephalochordata.

Choose the correct option from those given below.

- | | |
|-------------|-------------|
| (1) and (b) | (2) and (c) |
| (3) and (c) | (4) and (a) |

85. Bilaterally symmetrical and acoelomate animals are exemplified by

- | | |
|-------------------|---------------------|
| (1) Aschelminthes | (2) Annelida |
| (3) Ctenophora | (4) Platyhelminthes |

86. Match the following columns and select the correct option.

Column-I

- (a) 6-15 pairs of gill slits
- (b) Heterocercal caudal fin
- (c) Air bladder
- (d) Poison sting

Column-II

- (i) Trygon
- (ii) Cyclostomes
- (iii) Chondrichthyes
- (iv) Osteichthyes

Choose the correct option from those given below.

- | | |
|----------------------------|----------------------------|
| (1) a-iv, b-ii, c-iii, d-i | (2) a-i, b-iv, c-iii, d-ii |
| (3) a-ii, b-iii, c-iv, d-i | (4) a-iii, b-iv, c-i, d-ii |

93. Which of the following statements is correct?

- a. Adenine pairs with thymine through three H-bonds
- b. Adenine does not pair with thymine
- c. Adenine pairs with thymine through two H-bonds
- d. Adenine pairs with thymine through one H-bond

(1) Adenine pairs with thymine through three H-bonds

(2) Adenine does not pair with thymine

(3) Adenine pairs with thymine through two H-bonds

(4) Adenine pairs with thymine through one H-bond

94. The first phase of translation is:

(1) Aminoacylation of tRNA

(2) Recognition of an anti-codon

(3) Binding of mRNA to ribosome

(4) Recognition of DNA molecules

95. Name the enzyme that facilitates opening of DNA helix during transcription.

(1) DNA polymerase

(2) RNA polymerase

(3) DNA ligase

(4) DNA helicase

96. Ray florets have

(1) Hypogenous ovary

(2) Half inferior ovary

(3) Inferior ovary

(4) Superior ovary

97. The ovary is half inferior in:

(1) Sunflower

(2) Plum

(3) Brinjal

(4) Mustard

98. The roots that originate from the base of the stem are:

(1) Prop roots

(2) Lateral roots

(3) Fibrous roots

(4) Primary roots

99. The transverse section of a plant shows following anatomical features:

Features:

- (a) Large number of scattered vascular bundles surrounded by bundle sheath
- (b) Large conspicuous parenchymatous ground tissues
- (c) Vascular bundles conjoint and closed
- (d) Phloem parenchyma absent

Identify the plant material:

(1) Dicotyledonous stem

(2) Dicotyledonous root

(3) Monocotyledonous stem

(4) Monocotyledonous root

100. (Out of syllabus but asked in last 3 years) Identify the incorrect statement.

(1) Sapwood is the innermost secondary xylems and is lighter in colour

(2) Due to deposition of tannins, resins, oils etc heart wood is dark in colour

(3) Heart wood does not conduct water but given mechanical support

(4) Sapwood is involved in conduction of water and minerals from root to leaf

101. Flippers of Penguins and Dolphins are examples of:

- | | |
|-------------------------|--------------------------|
| (1) Industrial melanism | (2) Natural selection |
| (3) Adaptive radiation | (4) Convergent evolution |

102. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2] Which of the following statements is not true ?

- | | |
|---|---|
| (1) Analogous structures are a result of convergent evolution | (2) Sweet potato and potato is an example of analogy |
| (3) Homology indicates common ancestry | (4) Flippers of penguins and dolphins are a pair of homologous organs |

103. The flippers of the Penguins and Dolphins are the example of the

- | | |
|-------------------------|--------------------------|
| (1) Natural selection | (2) Convergent evolution |
| (3) Divergent evolution | (4) Adaptive radiation |

104. Embryological support for evolution was disapproved by

- | | |
|-------------------------|--------------------|
| (1) Charles Darwin | (2) Oparin |
| (3) Karl Ernst von Baer | (4) Alfred wallace |

105. Which of the following refer to correct example(s) of organisms which have evolved due to changes in environment brought about by anthropogenic action?

- | | |
|---|--|
| (a) Darwin's Finches of Galapagos islands | (b) Herbicide resistant weeds |
| (c) Drug resistant eukaryotes | (d) Man-created breeds of domesticated animals like dogs |
| (1) (c) and (d) | (2) Only (d) |
| (3) Only (a) | (4) and (c) |

106. From his experiments, S.L. Miller produced amino acids by mixing the following in a closed flask:

- | | |
|---|---|
| (1) CH ₄ , H ₂ , NH ₃ and water vapor at 600°C | (2) CH ₃ , H ₂ , NH ₃ and water vapor at 600°C |
| (3) CH ₄ , H ₂ , NH ₃ and water vapor at 800°C | (4) CH ₃ , H ₂ , NH ₃ and water vapor at 800°C |

107. Identify the wrong statement with reference to immunity.

- | | |
|---|--|
| (1) Active immunity is quick and gives full response | (2) Foetus receives some antibodies from mother, it is an example for passive immunity |
| (3) When exposed to antigen (living or dead) antibodies are produced in the host's body. It is called "Active immunity" | (4) When ready-made antibodies are directly given, it is called "Passive immunity" |

108. The infectious stage of Plasmodium that enters the human body is:

- | | |
|------------------------|----------------------|
| (1) Female gametocytes | (2) Male gametocytes |
| (3) Trophozoites | (4) Sporozoites |

109. Match the following diseases with the causative organism and select the correct option.

Column-I

- (a) Typhoid
- (b) Pneumonia
- (c) Filariasis
- (d) Malaria

Column-II

- (i) Wucheria
- (ii) Plasmodium
- (iii) Salmonella
- (iv) Haemophilus

(1) -(ii), (b)-(i), (c)-(iii), (d)-(iv)

(2) -(iv), (b)-(i), (c)-(ii), (d)-(iii)

(3) -(i), (b)-(iii), (c)-(ii), (d)-(iv)

(4) -(iii), (b)-(iv), (c)-(i), (d)-(ii)

110. Cuboidal epithelium with brush border of microvilli is found in:

(1) Proximal convoluted tubule of nephron

(2) Eustachian tube

(3) Lining of intestine

(4) Ducts of salivary glands

111. If the head of cockroach is removed, it may live for few days because:

(Out of syllabus but asked in last 3 years)

(1) The head holds a small proportion of a nervous system while the rest is situated along the ventral part of its body

(2) The head holds a 1/3rd of a nervous system while the rest is situated along the dorsal part of its body

(3) The supra-oesophageal ganglia of the cockroach are situated in ventral part of abdomen

(4) The cockroach does not have nervous system

112. Goblet cells of alimentary canal are modified from:

(1) Chondrocytes

(2) Compound epithelial cells

(3) Squamous epithelial cells

(4) Columnar epithelial cells

113. Which of the following statements about inclusion bodies is not correct?

(1) They lie free in the cytoplasm

(2) These represent reserve material in cytoplasm

(3) They are not bound by any membrane

(4) These are involved in ingestion of food particles

114. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2]
Which of the following statements is not correct?

(1) Lysosomes have numerous hydrolytic enzymes

(2) The hydrolytic enzymes of lysosomes are active under acidic pH

(3) Lysosomes are membrane bound structures

(4) Lysosomes are formed by the process of packaging in the endoplasmic reticulum

115. Which is the important site of formation of glycoproteins and glycolipids in eukaryotic cells?

(1) Golgi bodies

(2) Polysomes

(3) Endoplasmic reticulum

(4) Peroxisomes

122. Identify the basic amino acid from the following

- | | |
|--------------|-------------------|
| (1) Lysine | (2) Valine |
| (3) Tyrosine | (4) Glutamic Acid |

123. In gel electrophoresis, separated DNA fragments can be visualized with the help of

- | | |
|---------------------------------------|--|
| (1) Acetocarmine in UV radiation | (2) Ethidium bromide in infrared radiation |
| (3) Acetocarmine in bright blue light | (4) Ethidium bromide in UV radiation |

124. Identify the wrong statement with regard to Restriction Enzymes.

- | | |
|--|---|
| (1) They are useful in genetic engineering | (2) Sticky ends can be joined by using DNA ligases |
| (3) Each restriction enzyme functions by inspecting the length of a DNA sequence | (4) They cut the strand of DNA at palindromic sites |

125. Choose the correct pair from the following:

- | | |
|--|--|
| (1) Nuclease - Separate the two strands of DNA | (2) Exonuclease - Make cuts at specific positions within DNA |
| (3) Ligases - Join the two DNA molecules | (4) Polymerases - Break the DNA into fragments |

126. The specific palindromic sequence which is recognized by EcoRI is

- | | |
|---|---|
| (1) 5' - CTTAAG - 3' / 3' - GAATTC - 5' | (2) 5' - GGATCC - 3' / 3' - CCTAGG - 5' |
| (3) 5' - GAATTC - 3' / 3' - CTTAAG - 5' | (4) 5' - GGAACC - 3' / 3' - CCTTGG - 5' |

127. Match the organism with its use in biotechnology

- (a) Bacillus
- (b) Thermus aquaticus
- (c) Agrobacterium tumefaciens
- (d) Salmonella typhimurium
- (i) Cloning vector
- (ii) Construction of first rDNA
- (iii) DNA polymerase
- (iv) Cry proteins

Select the correct option from the following:

- | | |
|--|--|
| (1) - (iii); (b) - (ii); (c) - (iv); (d) - (i) | (2) - (iii); (b) - (iv); (c) - (i); (d) - (ii) |
| (3) - (ii); (b) - (iv); (c) - (iii); (d) - (i) | (4) - (iv); (b) - (iii); (c) - (i); (d) - (ii) |

128. The sequence that controls the copy number of the linked DNA in the vector is termed

- | | |
|--------------------------|----------------------|
| (1) Palindromic sequence | (2) Recognition site |
| (3) Selectable marker | (4) Ori site |

129. Bt cotton variety that was developed by the introduction of toxin gene of Bacillus thuringiensis (bt) is resistant to:

- | | |
|---------------------|----------------------|
| (1) Plant nematodes | (2) Insect predators |
| (3) Insect pest | (4) Fungal diseases |

130. Match the following columns and select the correct option.

Column-I

- (a) Bt cotton
- (b) Adenosine deaminase deficiency
- (c) RNAi
- (d) PCR

Column-II

- (i) Gene therapy
- (ii) Cellular defence
- (iii) Detection of HIV infection
- (iv) Bacillus thuringiensis

(1) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)

(2) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

(3) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)

(4) (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)

131. The dissolution of synaptonemal complex occurs during

(1) Diakinesis

(2) Leptotene

(3) Pachytene

(4) Diplotene

132. Some dividing cells exit the cell cycle and enter vegetative inactive stage. This is called quiescent stage (G₀). This process at the end of:

(1) S phase

(2) G₂ phase

(3) M phase

(4) G₁ phase

133. Identify the correct statement with regard to G₁ phase (Gap 1) of interphase.

(1) Cell is metabolically active, grows but does not replicate its DNA

(2) Nuclear Division takes place.

(3) DNA synthesis or replication takes place.

(4) Reorganization of all cell components takes place.

134. Dissolution of the synaptonemal complex occurs during:

(1) Diplotene

(2) Leptotene

(3) Pachytene

(4) Zygotene

135. Match the following with respect to meiosis:

Column-I

- a. Zygotene
- b. Pachytene
- c. Diplotene
- d. Diakinesis

Column-II

- (i) Terminalization
- (ii) Chiasmata
- (iii) Crossing over
- (iv) Synapsis

Select the correct option from the following:

(1) a-(i), b-(ii), c-(iv), d-(iii)

(2) a-(ii), b-(iv), c-(iii), d-(i)

(3) a-(iii), b-(iv), c-(i), d-(ii)

(4) a-(iv), b-(iii), c-(ii), d-(i)

136. Which of the following is not an attribute of a population?

(1) Mortality

(2) Species interaction

(3) Sex ratio

(4) Natality

137. In light reaction, plastoquinone facilitates the transfer of electrons from

(1) PS-I to NADP+

(2) PS-I to ATP synthase

(3) PS-II to Cytb6f complex

(4) Cytb6f complex to PS-I

138. The oxygenation activity of RuBisCo enzyme is photorespiration leads to the formations of:

(1) 1 molecule of 6-C compound

(2) 1 molecule of 4-C compound and 1 molecule of 2-C compound

(3) 2 molecules of 3-C compound

(4) 1 molecule of 3-C compound

139. Match the trophic levels (grassland ecosystem) in Column I with the correct species in Column II:

Column I

- (a) First trophic level
- (b) Second trophic level
- (c) Third trophic level
- (d) Fourth trophic level

Column II

- (i) Crow
- (ii) Vulture
- (iii) Rabbit
- (iv) Grass

Select the correct option:

(1) a-iv, b-iii, c-ii, d-i

(2) a-i, b-ii, c-iii, d-iv

(3) a-ii, b-iii, c-iv, d-i

(4) a-iii, b-ii, c-i, d-iv

140. In relation to gross primary productivity and Net primary productivity of an ecosystem, which one of the following statements is correct?

- | | |
|---|---|
| (1) Gross primary productivity and Net primary productivity are one and same. | (2) There is no relationship between Gross primary productivity and Net primary productivity. |
| (3) Gross primary productivity is always less than Net primary productivity. | (4) Gross primary productivity is always more than Net primary productivity. |

141. The number of substrate level phosphorylations in one turn of citric acid cycle is:

- | | |
|----------|-----------|
| (1) Two | (2) Three |
| (3) Zero | (4) One |

142. Which of the following regions of the globe is exhibits highest species diversity?

- | | |
|----------------------------|--------------------|
| (1) Himalayas | (2) Amazon forests |
| (3) Western Ghats of India | (4) Madagascar |

143. Name the plant growth regulator which upon spraying on sugarcane crop increases the length of stem, thus increasing the yield of sugarcane crop

- | | |
|---------------|--------------------|
| (1) Ethylene | (2) Absciscic acid |
| (3) Cytokinin | (4) Gibberellin |

144. The process of growth is maximum during

- | | |
|----------------|---------------|
| (1) Senescence | (2) Dormancy |
| (3) Log phase | (4) Lag phase |

145. Which of the following is not an inhibitory substance governing seed dormancy?

- | | |
|----------------------|------------------------|
| (1) Phenolic acid | (2) Para-ascorbic acid |
| (3) Gibberellic acid | (4) Absciscic acid |

146. Identify the wrong statement with reference to transport of oxygen.

- | | |
|---|--|
| (1) Higher H^+ conc. In alveoli favours the formation of oxyhaemoglobin | (2) Low pCO_2 in alveoli favours the formation of oxyhaemoglobin |
| (3) Binding of oxygen with haemoglobin is mainly related to partial pressure of O_2 | (4) Partial pressure of CO_2 can interfere with O_2 binding with haemoglobin |

147. Select the correct events that occur during inspiration.

- (a) Contraction of diaphragm
- (b) Contraction of external inter-costal muscles
- (c) Pulmonary volume decreases
- (d) Intrapulmonary pressure increases

Choose the correct answer from the options given below:

- | | |
|----------------------|--------------|
| (1) (a), (b) and (d) | (2) Only (d) |
| (3) and (b) | (4) and (d) |

148. The QRS complex in a standard ECG represents:

- | | |
|----------------------------------|----------------------------------|
| (1) Depolarisation of ventricles | (2) Repolarisation of ventricles |
| (3) Repolarisation of auricles | (4) Depolarisation of auricles |

149. Match the following columns (types of WBC with their functions) and select the correct option.

List I (WBC)

- A. Eosinophils
- B. Basophils
- C. Neutrophils
- D. Lymphocytes

List II (Function)

- i. Immune responses
- ii. Phagocytosis
- iii. Secrete histamine and heparin (inflammation)
- iv. Resist infections; associated with allergic reactions

Choose the correct answer:

- | | |
|----------------------------|----------------------------|
| (1) A-iv, B-iii, C-ii, D-i | (2) A-i, B-ii, C-iii, D-iv |
| (3) A-ii, B-iv, C-i, D-iii | (4) A-iii, B-i, C-iv, D-ii |

150. Presence of which of the following conditions in urine are indicative of diabetes mellitus?

- | | |
|------------------------------|--------------------------------------|
| (1) Ketonuria and Glycosuria | (2) Renal calculi and Hyperglycaemia |
| (3) Uremia and ketonuria | (4) Uremia and Renal calculi |

151. Which of the following would help in prevention of diuresis?

- | | |
|--|---|
| (1) Atrial natriuretic factor causes vasoconstriction | (2) Decrease in secretion of renin by JG cells |
| (3) More water reabsorption due to undersecretion of ADH | (4) Reabsorption of Na ⁺ and water from renal tubules due to aldosterone |

152. Match the following columns and select the correct option.

Column I

- (a) Floating Ribs
- (b) Acromion
- (c) Scapula
- (d) Glenoid cavity

Column II

- (i) Located between second & seventh ribs
- (ii) Head of the Humerus
- (iii) Clavicle
- (iv) Do not connect with the sternum

- | | |
|--|--|
| (1) - (iii); (b) - (ii); (c) - (iv); (d) - (i) | (2) - (iv); (b) - (iii); (c) - (i); (d) - (ii) |
| (3) - (ii); (b) - (iv); (c) - (i); (d) - (iii) | (4) - (i); (b) - (i); (c) - (ii); (d) - (iv) |

153. Match the following columns and select the correct option.

Column-I

- (a) Pituitary gland
- (b) Thyroid gland
- (c) Adrenal gland
- (d) Pancreas

Column-II

- (i) Grave's disease
- (ii) Diabetes mellitus
- (iii) Diabetes insipidus
- (iv) Addison's disease

(1) - (iii); (b) - (i); (c) - (iv); (d) - (ii)

(2) - (ii); (b) - (i); (c) - (iv); (d) - (iii)

(3) - (iv); (b) - (iii); (c) - (i); (d) - (ii)

(4) - (iii); (b) - (ii); (c) - (i); (d) - (iv)

Answer Key

1.A	2.D	3.B	4.A	5.D	6.B	7.C	8.C	9.A	10.A	11.A
12.A	13.A	14.D	15.D	16.D	17.B	18.B	19.C	20.A	21.C	22.C
23.A	24.B	25.B	26.D	27.C	28.D	29.D	30.C	31.A	32.B	33.D
34.C	35.C	36.C	37.A	38.B	39.D	40.C	41.C	42.B	43.D	44.B
45.D	46.C	47.C	48.D	49.A	50.C	51.A	52.A	53.C	54.C	55.B
56.C	57.B	58.A	59.A	60.C	61.D	62.B	63.A	64.B	65.D	66.C
67.A	68.A	69.C	70.C	71.B	72.B	73.A	74.D	75.B	76.B	77.C
78.B	79.C	80.C	81.B	82.C	83.C	84.B	85.D	86.C	87.D	88.A
89.A	90.B	91.A	92.A	93.C	94.A	95.B	96.C	97.B	98.C	99.C
100.A	101.D	102.D	103.B	104.C	105.A	106.C	107.A	108.D	109.D	110.A
111.A	112.D	113.D	114.D	115.A	116.B	117.D	118.D	119.B	120.A	121.C
122.A	123.D	124.C	125.C	126.C	127.D	128.D	129.C	130.C	131.D	132.D
133.A	134.A	135.D	136.B	137.C	138.D	139.C	140.D	141.D	142.B	143.D
144.C	145.C	146.A	147.C	148.A	149.A	150.A	151.D	152.B	153.A	