



Date :-25/12/2021

Time :-180 Minutes

Exam Name :-Neet Test 1

Mark :- 120

1. A solid cube and a solid sphere of the same material have equal surface area. Both are at the same temperature 120°C , then

- (a) Both the cube and the sphere cool down at the same rate
- (b) The cube cools down faster than the sphere
- (c) The sphere cools down faster than the cube
- (d) Whichever is having more mass will cool down faster

2. A particle of amplitude A is executing simple harmonic motion. When the potential energy of particle is half of its maximum potential energy, then displacement from its equilibrium position is

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

3. A simple pendulum performs simple harmonic motion about $x = 0$ with an amplitude a and time period T . The speed of the pendulum at $x = a/2$ will be (2009)

- (a) $\frac{\pi a}{T}$ (b) $\frac{3\pi^2 a}{T}$ (c) $\frac{\pi a\sqrt{3}}{T}$ (d) $\frac{\pi a\sqrt{3}}{2T}$

4. In hydrogen spectrum the wavelength of H_{α} line is 656 nm whereas in the spectrum of a distant galaxy, H_{α} line wavelength is 706 nm . Estimated speed of the galaxy with respect to earth is

- (a) $2 \times 10^8\text{ m/s}$ (b) $2 \times 10^7\text{ m/s}$ (c) $2 \times 10^6\text{ m/s}$
- (d) $2 \times 10^5\text{ m/s}$

5. In Young's double slit experiment, if one of the slits is closed fully, then in the interference pattern

- (a) A bright slit will be observed, no interference pattern will exist
- (b) The bright fringes will become more bright
- (c) The bright fringes will become fainter
- (d) None of the above

6. Two capacitors of capacitances C_1 and C_2 are connected in parallel across a battery. If Q_1 and Q_2 respectively be the charges on the capacitors, then $\frac{Q_1}{Q_2}$ will be equal to

- (a) $\frac{C_2}{C_1}$ (b) $\frac{C_1}{C_2}$ (c) $\frac{C_2^2}{C_1^2}$ (d) $\frac{C_1^2}{C_2^2}$

7. Light waves can propagate through vacuum but

sound waves cannot do so. Mark the wrong statement

- (a) Light waves are transverse electromagnetic waves and do not require any medium for their propagation
- (b) Sound waves are longitudinal mechanical waves and require inertial and elastic medium for their propagation
- (c) Velocity of light for all transparent media is same
- (d) Velocity of light for all transparent media is different

8. Two rigid boxes containing different ideal gases are placed on a table. Box A contains one mole of nitrogen at temperature T_0 , while box B contains one mole of helium at temperature $(7/3)T_0$. The boxes are then put into thermal contact with each other and heat flows between them until the gases reach a common final temperature (Ignore the heat capacity of boxes). Then, the final temperature of the gases, T_f , in terms of T_0 is

- (a) $T_f = \frac{7}{3}T_0$ (b) $T_f = \frac{3}{2}T_0$ (c) $T_f = \frac{5}{2}T_0$
- (d) $T_f = \frac{3}{7}T_0$

9. Steam at 100°C is passed into 1.1 kg of water contained in a calorimeter of water equivalent to 0.02 kg at 15°C till the temperature of the calorimeter and its contents rises to 80°C . The mass of the steam condensed in kg is

- (a) 0.130 (b) 0.065 (c) 0.260 (d) 0.135

10. Two spheres P and Q , of same colour having radii 8 cm and 2 cm are maintained at temperatures 127°C and 527°C respectively. The energy radiated by P and Q is

- (a) 0.054 (b) 0.0034 (c) 1 (d) 2

11. The correct statement regarding a carbonyl compound with a hydrogen atom on its alpha carbon, is (NEET ? I 2016)

- (a) a carbonyl compound with a hydrogen atom on its alpha carbon rapidly equilibrates with its corresponding enol and this process is known as carbonylation

(b) a carbonyl compound with a hydrogen atom on its α carbon rapidly equilibrates with its corresponding enol and this process is known as keto-enol tautomerism

(c) a carbonyl compound with a hydrogen atom on its α carbon never equilibrates with its corresponding enol

(d) a carbonyl compound with a hydrogen atom on its α carbon rapidly equilibrates with its corresponding enol and this process is known as aldehyde-ketone equilibration.

12. The lattice enthalpy and hydration enthalpy of four compounds are given below. Compound Lattice enthalpy (in kJ mol^{-1}) Hydration enthalpy (in kJ mol^{-1}) P Q R S +780 +1012 +828 +632 -920 -812 -878 -600 The pair of compounds which is soluble in water is

(a) P and Q (b) Q and R (c) R and S (d) P and R

13. The pair having similar geometry is

(a) $\text{PCl}_3, \text{NH}_3$ (b) $\text{BeCl}_2, \text{H}_2\text{O}$ (c) $\text{CH}_4, \text{CCl}_4$
(d) IF_5, PF_5

14. Which reaction is suitable for the preparation of α -chloroacetic acid?

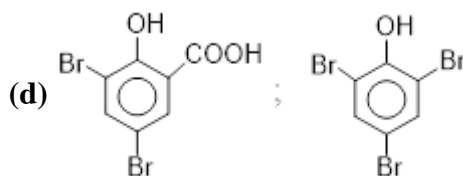
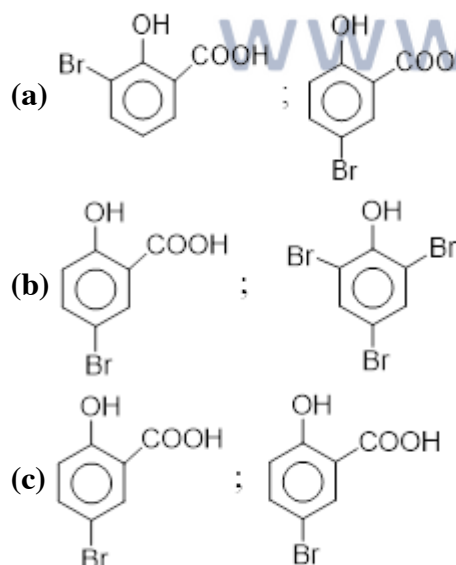
(a) Hell-Volhard-Zelinsky reaction
(b) Nef reaction (c) Stephen's reaction
(d) Perkin condensation

15. PVC is prepared by the polymerization of

(a) Ethylene (b) 1-chloropropene (c) Propene
(d) 1-chloroethene

16. Salicylic acid is treated with bromine under two different conditions.

$\text{[Y]} \xleftarrow[\text{Water}]{\text{Br}_2} \text{C}_6\text{H}_4(\text{OH})(\text{COOH}) \xrightarrow[\text{CH}_3\text{COOH}]{\text{Br}_2 \text{ in}} \text{[X]}$ Predict the nature of [X] and [Y] in the above reactions,



17. The enol form of acetone after treatment with D_2O , give

(a) $\text{H}_3 - \text{C} = \text{CH}_3$ | OD (b) $\text{H}_3\text{C} - \text{C} - \text{CD}_3$ || O
(c) $\text{H}_2\text{C} = \text{C} - \text{CH}_2\text{D}$ | OH (d) $\text{H}_2\text{C} = \text{C} - \text{CHD}_2$ | OH

18. When condensation product of hexamethylenediamine and adipic acid is heated to 353 K (80°C) in an atmosphere of nitrogen for about 4-5h, the product obtained is

(a) Solid polymer of nylon 66
(b) Liquid polymer of nylon 66
(c) Gaseous polymer of nylon 66
(d) Liquid polymer of nylon 66

19. The ease of hydrolysis with an alkali in the compounds CH_3COCl $\text{CH}_3\text{CO} - \text{O} - \text{COCH}_3$ I II $\text{CH}_3\text{COOC}_2\text{H}_5$ CH_3CONH_2 III IV is of the order

(a) I>II>III>IV (b) IV>III>II>I (c) I>II>IV>III
(d) II>I>IV>III

20. The compound in which underlined carbon uses only its sp^3 hybrid orbitals for bond formation is

(a) $\text{CH}_3\text{C}\underline{\text{O}}\text{OH}$ (b) $\text{CH}_3\text{C}\underline{\text{O}}\text{NH}_2$ (c) $\text{CH}_3\text{C}\underline{\text{H}}_2\text{OH}$
(d) $\text{CH}_2\text{C}\underline{\text{H}} = \text{CH}_2$

21. In the developmental history of mammalian heart, it is observed that it passes through a two-chambered fish-like heart, three-chambered frog-like heart and finally four-chambered stage. To which hypothesis can the above cited statement be approximated?

(a) Biogenetic law (b) Hardy-Weinberg law
(c) Lamarck's principle (d) Mendelian principles

22. In which one of the following pairs is the specific characteristic of soil not correctly matched?

(a) Laterite - Contains aluminium compound
(b) Terra - Most suitable for roses
(c) Chernozems - Richest soil in the world
(d) Black Soil - Rich in calcium carbonate

23. In oxidative decarboxylation, only a carbon molecule of pyruvic acid is get oxidised, other two carbon molecule goes to form

(a) Acetyl Co-A (b) CO_2 (c) Citric acid
(d) Both (a) and (b)

24. In which era reptiles were dominant? (2002)

- (a) Coenozoic era (b) Mesozoic era
(c) Palaeozoic era (d) Archaeozoic era

25. The soil which is transported by wind is known as

- (a) Colluvial (b) Eolian (c) Alluvial (d) glacial

26. I. Na^+ II. H_2O III. HCO_3^- IV. H^+ V. K^+ VI. NH_3
Which of the given ions are reabsorbed and secreted DCT? Reabsorb Secreted

- (a) I, II and III IV, V and VI
(b) IV, V and VI I, II and III
(c) I, II and V III, IV and V
(d) III, IV, and VI I, II and V

27. *Echidna and Ornithorhynchus* are the connecting links between

- (a) Amphibians and aves
(b) Mammals and amphibians

- (c) Reptiles and mammals
(d) Reptiles and amphibians

28. If $b = 65$ and d is $= 45$, $N = 100$ then find out dN/dt

- (a) 2000 (b) 1000 (c) 200 (d) 100

29. A nail is driven into the trunk of a 30 years old tree at a point 1 m above the soil level. The tree grows in height at the rate of 0.5m a years. After three years, nail will be

- (a) 1 m above the soil (b) 1.5 m above the soil
(c) 2 m above the soil (d) 2.5 m above the soil

30. Apparatus to measure rate of respiration and R.Q. is (1992)

- (a) auxanometer (b) potometer (c) respirometer
(d) manometer

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