Tripura JEE Chemistry Sample Questions 2025

1. 0-93 gm of an organic compound containing carbon, hydrogen and nitrogen as the element upon complete combustion produces 2:64 gm CO, and 0°63 gm H, O. The molecular mass of the compound is 186, Determine its molecular formula.

(A) C_5H_7N (B) C_6H_7N

(C) $C_{12}H_{14}N_2$ (D) $C_{10}H_{14}N_2$

2. The energy of which orbit of the He-atom is equal to the energy of the second orbit of the H-atom?

(A) Fourth
(B) Second
(C) First
(D) Third

3. Between the elements of and, B* there exists the relation b- a= 5. Mention the period and group of the element B.

(A) 2,15
(B) 2, 14
(C) 2,16
(D) 1,14

4. Predict the correct bond order considering the following molecules and ions :

$$O_2, O_2^{2-}, O_2^-, O_2^+$$

(A) $O_2^+ > O_2 > O_2^- > O_2^{2-}$ (B) $O_2^+ > O_2^- > O_2 > O_2^{2-}$

(C) $O_2 > O_2^- > O_2^+ > O_2^{2-}$ (D) $O_2^- > O_2^+ > O_2 > O_2^{2-}$

5. 5 moles of nitrogen gas at 5 atm pressure shows 100 lit volume. The same gas assumes 200 lit volume upon absorbing 30-26 kJ heat against an external pressure of 2 atm. Calculate the internal energy changes of this process. [Given 1 lit-atm = 101-32 J]

(A) 50-52 kJ
(B) 60:66 kJ
(C) 0-14 kJ
(D) 10kJ

6. In a first-order reaction, a reactant loses its 75% initial concentration in 32 minutes. Determine the half-life of the reactant.

(A) 8 minutes
(B) 16 minutes
(C) 4 minutes
(D) 12 minutes

7. 3°7 gm of gas at 25 °C occupies some volume, At 17 °C, 0-184 gm of hydrogen gas occupies the same volume when the pressures of both gases are the same. What will be the molecular weight of the gas?

(A) 41:98
(B} 20°67
(C} 20°94
(D) 41°34

8. At constant volume 2:94 mole I, is heated with 8-1 mole H,(g) at 444 °C fill the equilibrium is reached. If 5°64 mole HI is being generated following this reaction, then calculate the value of the equilibrium constant.

(A) 502
(B) 5.02
(C) 50.2
(D) 0.02

9. Observe the following redox reaction: NaNO, + aZn + BNaOH = NH, + cNa, ZnO, + H, O Which one will be the correct value of a, b and c among the following?

(A) 2,4, 2
(B) 3,8,3
(C) 1,3, 1
(D) 4, 7,4

10. At 37 °C, the osmotic pressure of human blood is 7-65 atm. Tell me how much glucose can be used in 1 lit of water for intravenous injection so that the osmotic pressure of this glucose solution becomes equal to the osmotic pressure of human blood.

(A) 22.2 gm
(B) 54.2 gm

(C) 15 gm
(D) 59.8 gm

11. If HO, is added to acidic $(dil.\ H_2SO_4)\ K_2Cr_2O_7$ solution followed by shaking of the resulting solution with diethyl ether, then the ether layer turns blue. This blue colour is due to the formation of which of the following?

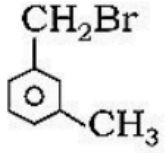
(A) H_2CrO_4 (B) CrO_5

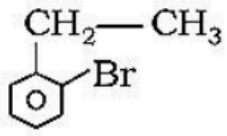
(C) CrO_3 (D) Cr_2O_3

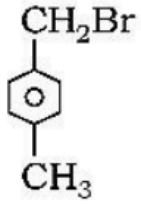
12. Find the basicity of the following acids: Hypophosphorous acid, metaphosphoric acid, phosphorous acid, orthophosphoric acid, and pyrophosphoric acid.

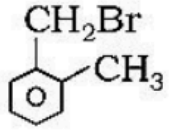
(A) 1,1,2,3,3
(B) 1,2,2,3,4
(C) 1,1,2,3,4
(D) 1,2,3,3,2

13. An organic compound of molecular formula C,H, Br on reaction with hot alccholic AgNO solution produces white precipitate. Upon oxidation, it produces C,H, and O, which on thermal heating produces an anhydride. Identify the organic compound.

(A) 

(B) 

(C) 

(D) 

14. Which of the following pairs forms a biodegradable polymer?

(A) H,NCH,COOH and H,N(CH.,) COOH
(B) HOCH,CH,OH and HOOC ~o)— COOH

(C) (0) CH = CH, and CH, = CH— CH=CH,
(D) CH, = CH— CN and CH, = CH— CH=CH,

15. Doxycycline belongs to which of the following classes of antimicrobials?

(A) Broad-spectrum bactericidal antibiotic
(B) Narrow-spectrum bacteriostatic antibiotic
(C) Broad-spectrum bacteriostatic antibiotic
(D) Limited-spectrum bacteriostatic antibiotic