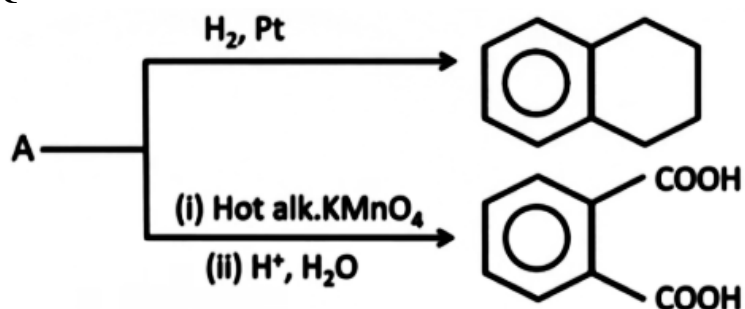
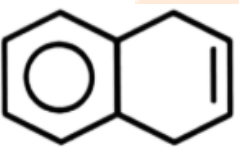
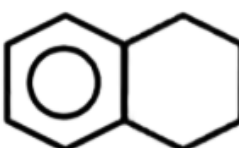
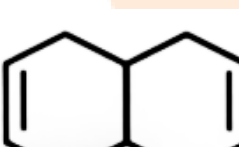
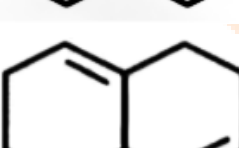


**JEE-Main-21-01-2026 (Memory Based)**  
**[MORNING SHIFT]**  
**Chemistry**

**Question:**



**Options:**

- (a) 
- (b) 
- (c) 
- (d) 

**Answer: (a)**

**Question:** For two chemical reactions A and B, if the difference between their activation energy is 20 kJ at 300 K ( $R = 8.3 \text{ J K}^{-1} \text{ mol}^{-1}$ ). Determine  $\ln \frac{k_2}{k_1}$

**Options:**

- (a) 9  
(b) 8  
(c) 5  
(d) 2

**Answer: (b)**

**Question:** In Sulphur estimation 0.7 g of an organic compound gives 1 g  $\text{BaSO}_4$  in Carius method. What is the % of Sulphur in compound?

**Options:**

- (a) 19.61
- (b) 23.85
- (c) 27.93
- (d) 14.57

**Answer: (a)**

**Question:** Which of the following is the correct order with respect to the property indicated?

**Options:**

- (a)  $\text{Cl} > \text{F}$  (Ionisation energy)
- (b)  $\text{K}_2\text{O} > \text{Na}_2\text{O} > \text{Al}_2\text{O}_3$  (Basic nature)
- (c)  $\text{K} > \text{Na} > \text{Al} > \text{Mg}$  (Metallic character)
- (d) None of these

**Answer: (b)**

**Question:** Given below are two statements.

**Statement-I:** Arginine and Tryptophan are essential amino acids.

**Statement-II:** Glycine does not have any chiral carbon.

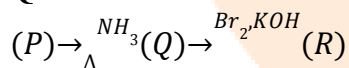
**In the light of the above statements, which is the correct option.**

**Options:**

- (a) Both Statement-I and Statement-II are correct
- (b) Both Statement-I and Statement-II are incorrect
- (c) Statement-I is correct and Statement-II is incorrect
- (d) Statement-I is incorrect and Statement-II is correct

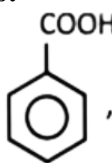
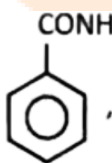
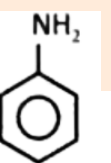
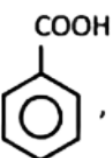
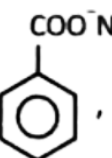
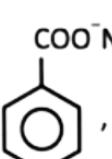
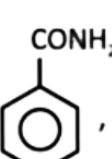
**Answer: (a)**

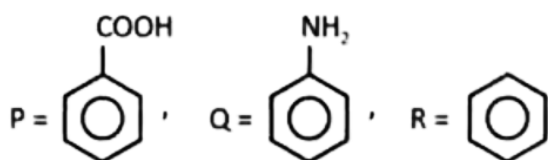
**Question:** Observe the following reaction sequence:



**Which of the following is the correct structure for P, Q and R?**

**Options:**

- (a)  $\text{P} =$  ,  $\text{Q} =$  ,  $\text{R} =$  
- (b)  $\text{P} =$  ,  $\text{Q} =$  ,  $\text{R} =$  
- (c)  $\text{P} =$  ,  $\text{Q} =$  ,  $\text{R} =$  



(d)

Answer: (a)

**Question:** In the following reaction,  $MnO_4^{2-} \xrightarrow{H^+}$

Manganate ion undergoes ion undergoes disproportionation to form

**Options:**

- (a)  $MnO_2, MnO_4^-$
- (b)  $MnO, MnO_2$
- (c)  $MnO_2, MnO$
- (d)  $MnO_4^-, MnO$

Answer: (a)

**Question:** 80 mL of organic compound is mixed with 264 mL  $O_2$  and ignited. It gives 224 mL of gaseous mixture at NTP. After passing KOH 64 mL of gas remains. The organic compound is

**Options:**

- (a)  $C_2H_4$
- (b)  $C_2H_2$
- (c)  $C_4H_{10}$
- (d)  $C_3H_6$

Answer: (b)

**Question:** Consider the following reaction



We have 14 g Ca reacts with excess of HCl. Choose the incorrect option.

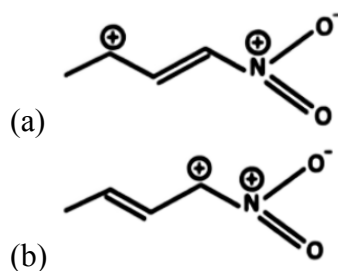
**Options:**

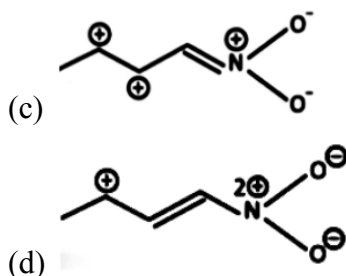
- (a) Mass produced of  $CaCl_2$  is 38.85 g
- (b) Mole of  $H_2$  produced is 0.35 mol
- (c) Volume of  $H_2$  produced at STP is 7.84 L
- (d) Mass of  $CaCl_2$  product is 3.885 g

Answer: (d)

**Question:** Which one of the resonating structure is not correct

**Options:**





Answer: (c)

**Question:** Given below are two statements:

**Statement-I:** All the pairs of molecules ( $\text{PbO}$ ,  $\text{PbO}_2$ ); ( $\text{SnO}$ ,  $\text{SnO}_2$ ) and ( $\text{GeO}$ ,  $\text{GeO}_2$ ) contain amphoteric oxides.

**Statement-II:**  $\text{AlCl}_3$ ,  $\text{BH}_3$ ,  $\text{BeH}_2$  and  $\text{NO}_2$  all have incomplete octet.

In the light of the above statements, choose the correct option.

**Options:**

- (a) Both Statement-I and Statement-II are correct
- (b) Both Statement-I and Statement-II are incorrect
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Answer: (d)

**Question:** Statement A: But-2-ene show O.I.

Statement B: Propanal and propanone are F.G.I

Statement C: Pentane and 2, 2-dimethylpropane are C.I.

Correct Statement are:

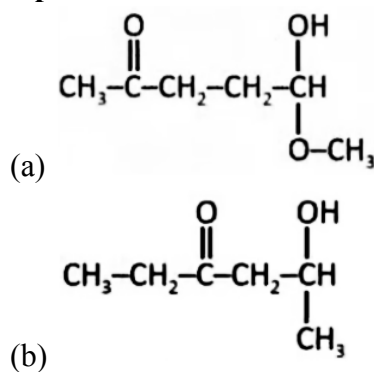
**Options:**

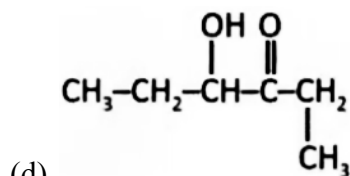
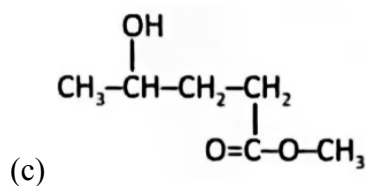
- (a) Only A and B
- (b) Only A and C
- (c) Only B and C
- (d) All

Answer: (c)

**Question:**  $\text{C}_6\text{H}_{12}\text{O}_3$  gives positive iodoform test on hydrolysis with dil. Acid product formed gives Tollen and iodoform test both. Find structure of  $\text{C}_6\text{H}_{12}\text{O}_3$ .

**Options:**





Answer: (a)

**Question:** Consider the following statements.

- A. Propanal and Propanone are functional isomers
- B. Ethoxyethane and methoxypropane are metamers
- C. But-2-ene shows optical isomerism
- D. But-1-ene and But-2-ene are functional isomers
- E. Pentane and 2, 2-dimethylpropane are chain isomers

The correct statement are

**Options:**

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

Answer: (c)

**Question:** Given below are two statements

**Statement I:** When electric discharge is put on hydrogen, it emits discrete frequency in electromagnetic spectrum.

**Statement II:** Frequency of  $\text{He}^+$  ion of 2<sup>nd</sup> line of Balmer series is equal to first line of Lyman series of H-atom

**Options:**

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct and statement II is incorrect
- (d) Statement I is incorrect and statement II is correct

Answer: (a)

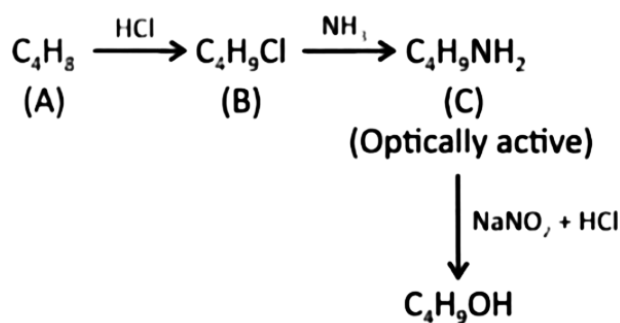
**Question:** Which of the following compound is paramagnetic in nature?

**Options:**

- (a)  $[\text{Ni}(\text{CO})_4]$
- (b)  $[\text{Ni}(\text{CN})_4]^{2-}$
- (c)  $[\text{NiCl}_4]^{2-}$
- (d)  $[\text{Co}(\text{H}_2\text{O})_6]^{3+}$

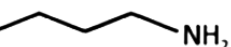
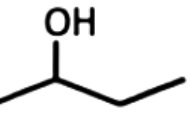
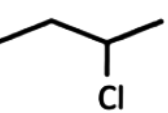
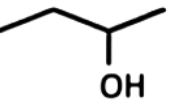
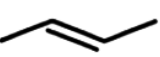
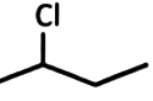
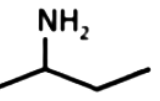
Answer: (c)

**Question:** Observe the following reaction sequence:



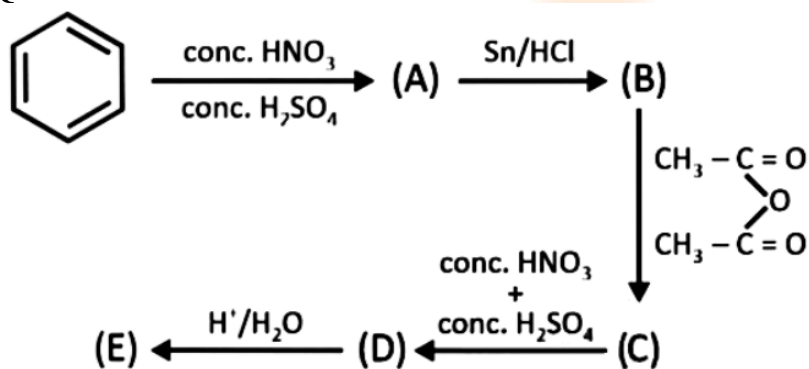
Which of the following is correct structure of A, B and C?

Options:

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

Answer: (d)

Question:



% of N in E = ?

Options:

Answer: (20)

**Question:** 10 mol of oxygen is heated at constant volume from 30°C to 40°C. The change in the internal energy of gas is \_\_\_\_ cal. The molar specific heat of oxygen at constant pressure  $C_p = 7 \text{ cal/mol } ^\circ\text{C}$  &  $R = 2 \text{ cal/mol } ^\circ\text{C}$

**Options:**

**Answer:** (500)

**Question:** 1 g of  $\text{AB}_2$  is dissolved in 50 g solvent such that  $\Delta T_f = 0.689$ . When 1 g AB is dissolved in 50 g of same solvent  $\Delta T_f$  is 1.176. Find molar mass of  $\text{AB}_2$ .  $K_f = 5 \text{ K kg/mol}$ . (Report to nearest integer)  $\text{AB}_2$  and AB are non electrolyte.

**Options:**

**Answer:** (145)

**Question:** Out of the following, how many compounds have tetrahedral geometry?

$\text{NH}_4^+$ ,  $\text{XeF}_4$ ,  $[\text{NiCl}_4]^{2-}$ ,  $[\text{PtCl}_4]^{2-}$ ,  $[\text{Cu}(\text{NH}_3)_4]^{2+}$ ,  $\text{BF}_3$  and  $[\text{Ni}(\text{Co})_4]$

**Options:**

**Answer:** (3)