

# PAPER SOLUTION

**From Meerut** 

JAN

**28** 



**2025** 

2<sup>nd</sup>

SHIFT

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**Question Paper** 



#### **#Q. Which has maximum oxidising power among the following:**

- $A VO_2^+$
- $\bigcirc$   $MnO_4^-$
- $Cr_2O_7^{2-}$
- D TiO<sub>2</sub>

Ans. (B)



#Q. Consider the following oxides,  $V_2O_4$ ,  $V_2O_5$  and  $V_2O_3$  Change in oxidation state of vanadium when amphoteric oxide reacts with acids to form  $VO_2^+$  is:

**A** 0

**B** 1

**G** 2

**D** 3



#Q. Find the no. of Paramagnetic species among the following.  $O_2$ ,  $O_2^+$ ,  $O_2^-$ ,  $NO_2$ , NO, CO



#Q. How many of the following molecules have non-zero dipole moment? CH<sub>4</sub>, CCl<sub>4</sub>, CH<sub>2</sub>Cl<sub>2</sub>, H<sub>2</sub>O, NH<sub>3</sub>, H<sub>2</sub>O<sub>2</sub>, O<sub>2</sub>F<sub>2</sub>

Ans. 5



#Q. Which of the following compound(s) is/are yellow in colour? (1) CdS (2) PbS (3) CuS (4) ZnS(Cold) (5) PbCrO<sub>4</sub>

- A 1, 3 & 5 only
- **C** 2 & 4 only

- **B** 1 & 5 only
- 1, 2 & 5 only

Ans. (B)



#### **#Q.** The correct order of energy of subshell among the following is:

- A 1s < 2s < 3d < 3p
- $\bigcirc$  1s < 3p < 2s < 3d

- **B** 2s < 1s < 3p < 3d
- D 1s < 2s < 3p < 3d

Ans. (D)



**#Q.** Which of the following complex is paramagnetic.

- [NiCl<sub>4</sub>]<sup>2-</sup>

- B [Ni(CN)<sub>4</sub>]<sup>2-</sup>
- **D** [Fe(CO)<sub>5</sub>]



**#Q.** 30 gm HNO<sub>3</sub> is added to a solution to prepare 75% w/w solution having density 1.25 g/mL. Volume of solution(mL) is:

- A 32 mL
- **6** 48 mL

- **B** 36 mL
- D 28 mL



**#Q. Statement 1:** 



and are ring chain isomers.





- Statement I and Statement II both are correct
- **Statement I and Statement II both are incorrect** B
- Statement I correct Statement II is incorrect C
- D Statement – I incorrect Statement – II is correct



#### **#Q.** For an elementary reaction:

 $A + B \longrightarrow C + D$ 

When volume becomes  $\frac{1}{3}$  rd, rate of reaction becomes.

A 2 times

**B** 6 times

© 8 times

D 9 times

Ans. (D)



#### **#Q.** Match the following List–I with List–II.

List – I			List – II	
A.	[CoF <sub>6</sub> ] <sup>3-</sup>	1.	sp <sup>3</sup> d <sup>2</sup>	
B.	$[Co(NH)_3)_6]^{3+}$	2.	$d^2sp^3$	
C.	[NiCl <sub>4</sub> ] <sup>2-</sup>	3.	sp <sup>3</sup>	
D.	[Ni(CN) <sub>4</sub> ] <sup>2-</sup>	4.	dsp <sup>2</sup>	

#### Choose the correct answer from the options given below:

A-2, B-1, C-4, D-3

B A-1, B-2, C-4, D-3

C A-1, B-2, C-3, D-4

D A-2, B-1, C-3, D-4



#### **#Q.** The correct name of I & II in the following process is:

Solid — → Vapours — → Solid

I → Sublimation

II → Vaporisation

I → Sublimation

**II** → **Deposition** 

**I** → **Sublimation** 

**B** II → Decomposition

I → Deposition

**II** → **Sublimation** 



#### **#Q.** Consider the following sequence of reaction:

$$CH_3 - C \equiv CH \xrightarrow{H_2/Pd} A \xrightarrow{O_3} B + C$$

$$\begin{array}{c}
A \\
C = HCHO
\end{array}$$

$$B = CH_3CHO$$

$$C = HCOOH$$

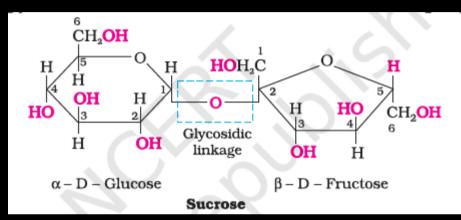


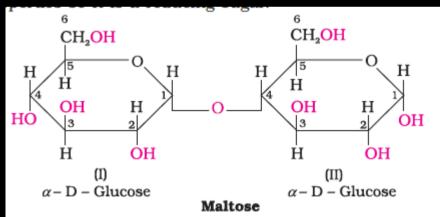
#Q. Which of the following biomolecules has no  $C_1 - C_4$  glycosidic linkage:

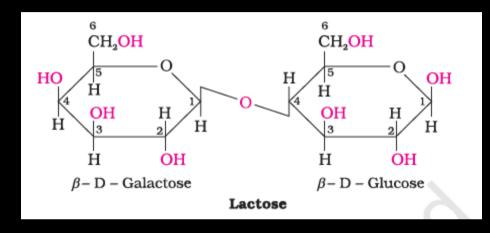
- **A** Maltose
- **C** Sucrose

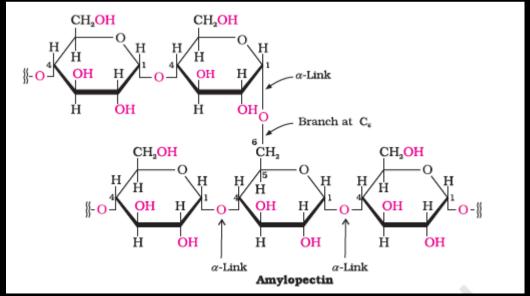
- **B** Amylopectin
- Lactose













- **#Q.** Statement 1 : In law of octaves, elements were arranged in increasing order of their atomic numbers.
  - Statement 2: Lothar Meyer, plotted the atomic volume against atomic weight. Choose the correct answer from the options given below:
  - A Statement I and Statement II both are correct
  - **B** Statement I and Statement II both are incorrect
  - C Statement I correct Statement II is incorrect
  - Statement I incorrect Statement II is correct

Ans. (D)



#### **#Q.** Consider the following sequence of reaction:

$$C_6H_{12} \xrightarrow{Se/\Delta} A \xrightarrow{CH_3-CI} B \xrightarrow{CrO_2CI_2} C$$

Choose the correct option about major product.

- (C' gives Fehling's solution test
- (C' can be prepared by reacting PhMgBr with CO<sub>2</sub>
- (C) 'C' can give Tollen's test
- **(C)** 'C' can give effervescence with NaHCO<sub>3</sub>



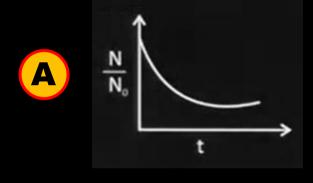
# #Q. Consider the following oxides, $V_2O_3$ , $V_2O_4$ and $V_2O_5$ Oxidation state of vanadium in amphoteric oxide is:

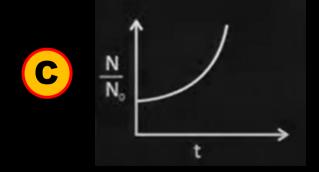
- **A** +3
- C +5

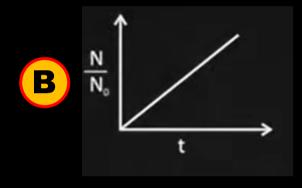
- **B** +4
- **D** +6



#Q. The bacterial life grows as per 1<sup>st</sup> order kinetics. Which of the following graph is correct between  $\frac{N}{N_0}$  and t?



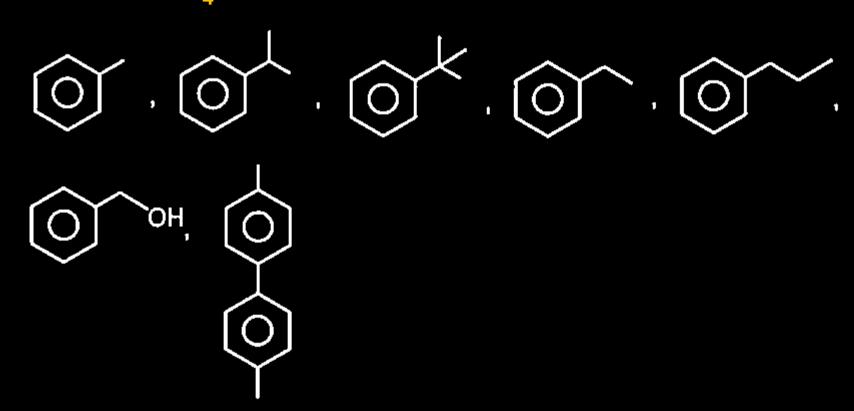








#Q. How many of the following will give Benzoic acid on reaction with hot alkaline KMnO₄?



Ans. 5



#Q. By passing current in 600 mL of NaCl solution pH increase to 12. Find nearest Integer of current (i) if electrolysis occurs for 10 min./assume 100% efficiency.

Ans. 0.965



- **#Q.** Identify correct conversions during Acidic Hydrolysis from following:
  - (A) Starch gives Galactose
  - (B) Cane sugars gives Glucose and Fructose on Hydrolysis
  - (C) Milk sugar gives Glucose and Galactose
  - (D) Amylopectin give Glucose and Fructose
  - (E) Amylose gives only Glucose
  - A B, C and E are correct

B A, B and E are correct

C A, C and E are correct

**D** A, B and C are correct