



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 100

Chemistry Single Choice

1. Find out Incorrect match :

Column I (Species)	Column II (Bond order)
A. N_2^+	2.5

Column I (Species)	Column II (Bond order)
B. N_2	3.5

Column I (Species)	Column II (Bond order)
C. O_2	1.5

Column I (Species)	Column II (Bond order)
D. O_2	2

Answer: C



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2. What is the position of an element in the periodic table whose atomic number is 33?

A. Group 1

B. Group 3

C. Group 15

D. Group 7

Answer: C



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3. The oxidation and coordination number of Pt in $[Pt(C_2H_4)Cl_3]^-$ is respectively :-

A. +1, 3

B. +2, 4

C. +3, 6

D. +2, 5

Answer: B

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4. Which of the following ion is diamagnetic?

A. O_2^-

B. O_2^{2-}

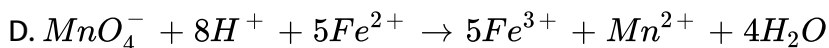
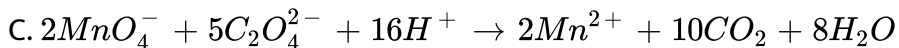
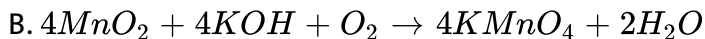
C. O_2

D. O_2^{+1}

Answer: B

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5. Which of the following reactions is incorrect?



Answer: B



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6. $BF_3 + LiAlH_4 \xrightarrow{\text{Ether}} X + LiF + AlF_3$. Which of the following is incorrect about X?

A. can react with NH_3

B. dipole moment is zero

C. vacant orbital is not involved in bonding

D. electron deficient molecule

Answer: C



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7. Which of the following species is not a pseudo halide :-



Answer: B



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8. $NaHSO_3$ is heated to produce H_2O and compound A. Which of the following statement is INCORRECT about A

- A. A has S - O - S type of linkage
- B. S atoms have sp^3 hybridisation
- C. A has S - S linkage
- D. One S atom has one lone pair

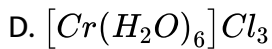
Answer: A



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9. When 1 mol $CrCl_3 \cdot 6H_2O$ is treated with excess of $AgNO_3$, 3 mol of AgCl are obtained. The formula of the complex is :

- A. $[CrCl_3(H_2O)_3] \cdot 3H_2O$
- B. $[CrCl_3(H_2O)_4]Cl \cdot 2H_2O$
- C. $[CrCl_3(H_2O)_5]Cl_2 \cdot H_2O$



Answer: D



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10. If a potassium salt KX is insoluble in water then comment on solubility of NaX. (X = any anion)

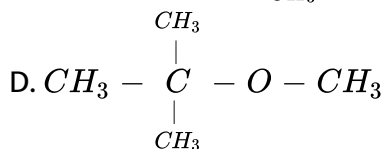
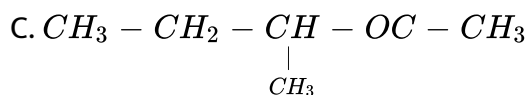
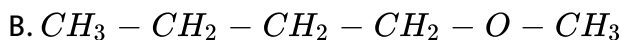
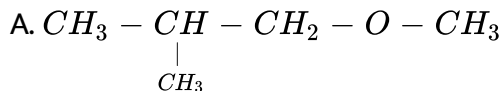
- A. More soluble
- B. Less soluble
- C. Same solubility
- D. Can't predict

Answer: D



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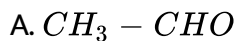
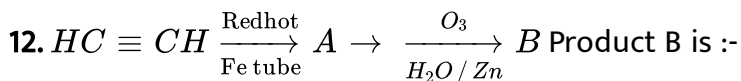
11. Among the following ethers, which one will produce methyl alcohol on treatment with hot concentrated HI ?



Answer: D



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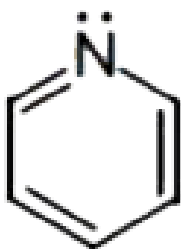
C. |



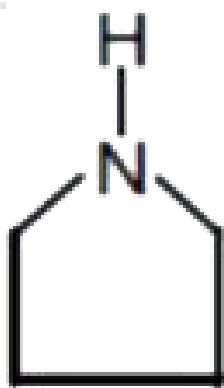
Answer: B

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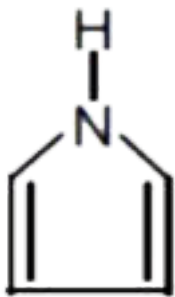
13. Which is the most basic among the following?



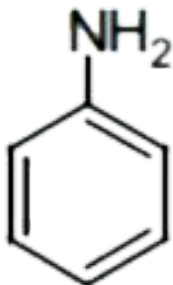
A.



B.



C.



D.

Answer: B

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14. Which of the following will form the same osazone when treated with excess of phenylhydrazine?

A. D -glucose, D-fructose and D-galactose

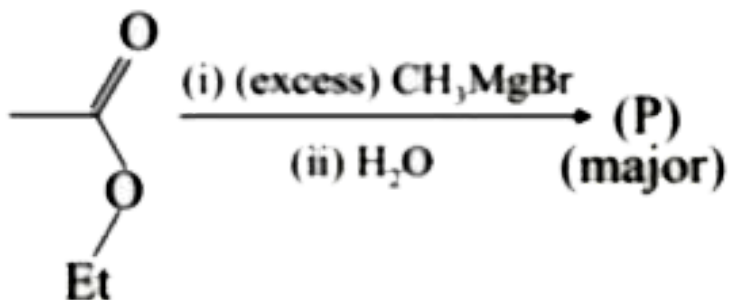
B. D-glucose, D-fructose and D-mannose

C. D-glucose, D-mannose and D-galactose

D. D-fructose, D-mannose and D-galactose

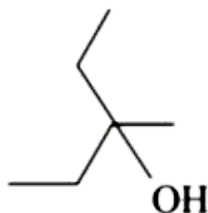
Answer: B

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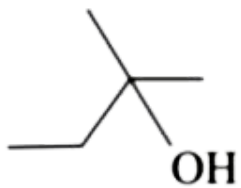
15.

The structure of P is ...

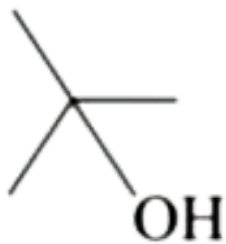


A.

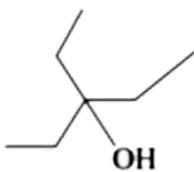
B.



C.



D.

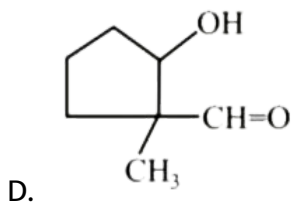
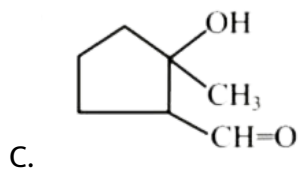
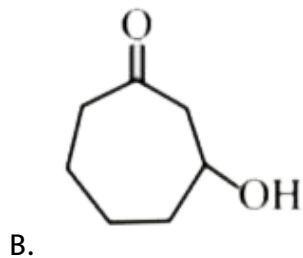
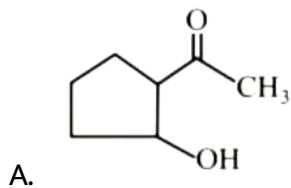
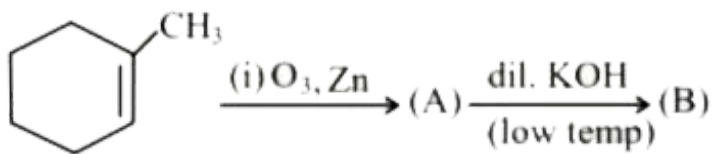


Answer: C



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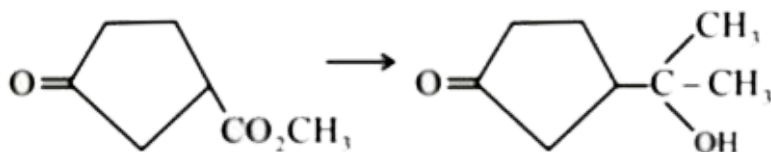
16. Find the major product of the given reaction.



Answer: A

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17. By which of the following reagents can the following conversion be effected ?



A. $2\text{CH}_3\text{MgBr}$ and then $\text{H}_3\text{O}^{\oplus}$

B.

$\text{HOCH}_2 - \text{CH}_2\text{OH} / \text{H}^{\oplus}$ (ii) LiAlH_4 (iii) $2\text{CH}_3\text{MgBr} / \text{ether}$ (iv) $\text{H}_3\text{O}^{\oplus}$

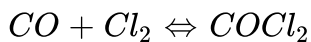
C. i) $\text{HOCH}_2 - \text{CH}_2\text{OH} / \text{H}^{\oplus}$ ii) $2\text{CH}_3\text{MgBr} / \text{ether}$ iii) $\text{H}_3\text{O}^{\oplus}$

D. i) $\text{HOCH}_2 - \text{CH}_2 - \text{OH} / \text{H}^{\oplus}$ ii) H_2 / Pt iii) $\text{CH}_3\text{OH} / \text{H}^{\oplus}$

Answer: C

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18. The formation of phosgene is represented as,



The reaction is carried out in 500 mL flask. At equilibrium 0.3 mole of phosgene, 0.1 mole of CO and 0.1 mole of Cl_2 are present.

The equilibrium constant of the reaction is :

A. 30

B. 15

C. 5

D. 3

Answer: B



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19. Which of the following has the highest mass?

A. 1 g-atom of phosphorous

B. 2 moles of water

C. 22.4 L of CO_2 gas at STP

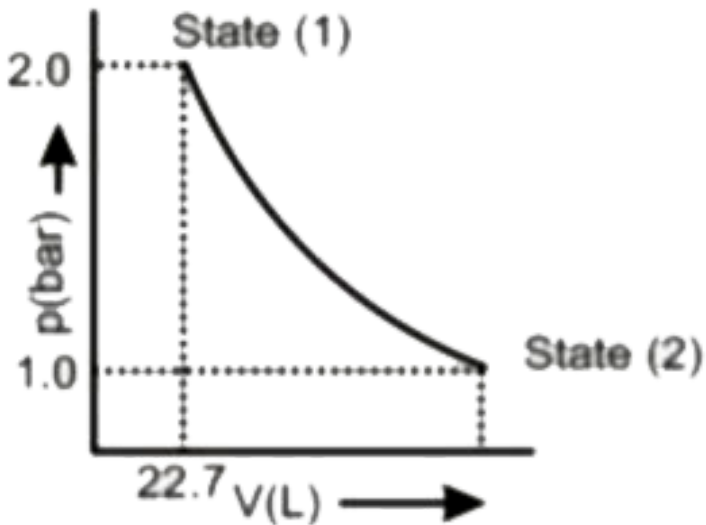
D. 6.02×10^{23} atoms of sulphur

Answer: C



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20. At a temperature of 298 K, 1 mol of a monoatomic ideal gas is expanded from the State (1) to State (2) as shown in the graph:



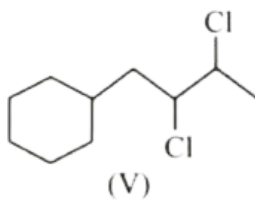
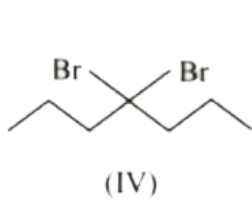
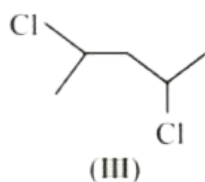
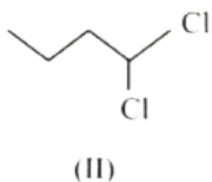
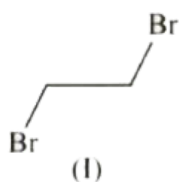
Find out the work done for the expansion of gas from the State (1) to State (2) at 298 K?

- A. $1717.46J$
- B. $1717.46 J$
- C. $1458 J$
- D. $- 1458J$

Answer: A

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1. The total number of compounds amongst the following, that can be classified as vicinal dihalides will be



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2. How many stereoisomers can be drawn for the following molecule?



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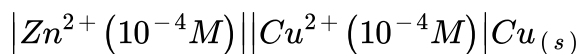
3. How many of the following pollutants are considered as non-viable particulate pollutants?

Smoke, dust, fungi, mists, moulds, algae, smog, bacteria, fumes

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4. At temperature of 298 K, the emf of the following electrochemical cell

$Zn_{(s)}$ will



be -- V.

(Given $E_{cell}^{\circ} = 1.10V$)

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5. How many of the following will have negative standard reduction potentials?

K, Na, Ag, Zn, Li, Cu, Hg

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6. The percentage of packing efficiency in fee lattice is----%

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7. The vapour pressure of pure benzene at a certain temperature is 650 mm Hg. A non-volatile and non-electrolyte solid weighing 1.54g is added to 26.00 g of benzene. The vapour pressure of the solution is 600 mm Hg. The molecular weight of solid substance is ___g mol^{-1}

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8. Pure hydrogen sulphide gas is stored in a tank of 100 L capacity at $20^{\circ}C$ and 2 atm pressure. The mass of hydrogen sulphide gas is__ g. (M.W. of hydrogen sulphide == 34 u)

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9. The work functions (W_0) of some metals are list below.

Metal	Li	Na	Mg	Cu	Ag	
W_0 / eV	2.42	2.3	2.25	3.7	4.8	4.3

The number of metals which will show

photoelectric effect when light of 360 nm wavelength falls on the metal is

_____ .

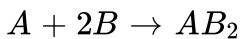
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$$= 6.626 \times 10^{-34} \text{ Js}, c = 3 \times 10^8 \text{ ms}^{-1} \text{ eV} = 1.6 \times 10^{-19} \text{ J}]$$



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10. For the following reaction the initial rates for gaseous reactions are given below:



(A) (B)

1) 0.1 0.1

2) 0.2 0.1

3) 0.2 0.2

Rate ($\text{molL}^{-1} \text{ s}^{-1}$)

$$2 \times 10^{-3}$$

$$4 \times 10^{-3}$$

$$1.6 \times 10^{-2}$$

Find the total order of the reaction.



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