doubtnut
India's Number 1 Education App

CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 50

Chemistry

1. 4 mole of a mixture of Mohr's salt and $Fe_2(SO_4)_3$ requires 500mL of $1M K_2Cr_2O_7$

for complete oxidation in acidic medium. The mole % of the Mohr's salt in the mixture is:

A. 25

B. 50

C. 60

D. 75

Answer: D

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2. Calculate standard free energy change for the reaction $2Ag + 2H^+ \rightarrow H_2 + 2Ag^+$

Given : $E^{\circ}_{Ag^+ / Ag} = +0.80V$

A. 308.08 kJ

B. 154.4 kJ

C. 77.2 kJ

D. $-154.4kJ$

Answer: B

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3. Element X crystallizes in 12 co - ordination fcc lattice. On applyng high temperature it changes to bcc lattice. Find the ratio of the density of the crystal lattice before and and after applying high temperature

A. $1:1$

B. $3:2$

C. $\sqrt{2}:\sqrt{3}$

D. $2\left(\sqrt{2}\right)^3:\left(\sqrt{3}\right)^3$

Answer: D

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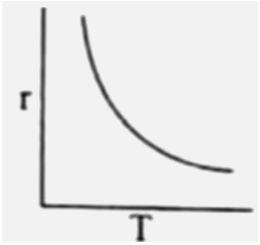
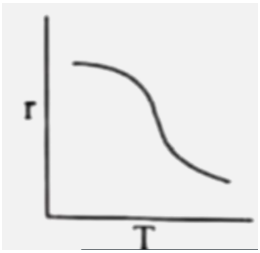
4. Rate of reaction (r) is plotted against temperature (T) for an enzyme catalysed reaction. Which of the following is correct representation ?

A. 

B.

C.

D. 

Answer: B

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5. The species in which the N-atom is in a state of sp hybridisation is

A. NO_2

B. NO_2^+

C. NO_2^-

D. NO_3^-

Answer: B

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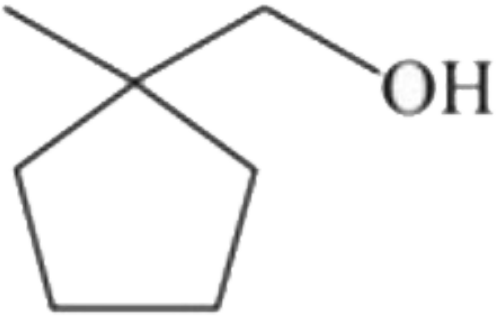
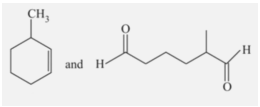
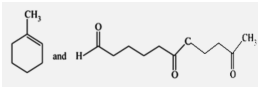
6. Consider the following sequence of reactions

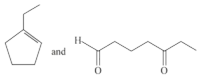


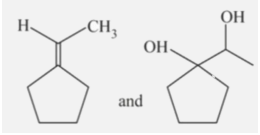
$$\xrightarrow{H^+ / \Delta} (X) \xrightarrow[2.Zn/CH_3COOH]{1.0_3} (Y) \xrightarrow[\Delta]{NaOH}$$

The intermediate products (X) and (Y) are respectively

A. 

B. 

C. 

D. 

Answer: B

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7. An alkali is titrated against an acid with methyl orange as indicator, which of the following is a correct combination?

A.

Base	Acid	End point
Storng	Strong	Pink to colourless

B.

Base	Acid	End point
Weak	Strong	Colourless to pink

C.

Base	Acid	End point
Strong	Strong	Pinkish red to yellow

D.

Base	Acid	End point
Weak	Strong	Yellow to pinkish red

Answer: D

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8. In Bohr 's model of hydrogen when an electron jumps from n=1 to n=3 how much energy will be absorbed

A. 2.389×10^{-12} ergs

B. 0.239×10^{-10} ergs

C. 2.15×10^{-11} ergs

D. 0.1936×10^{-10} ergs

Answer: D

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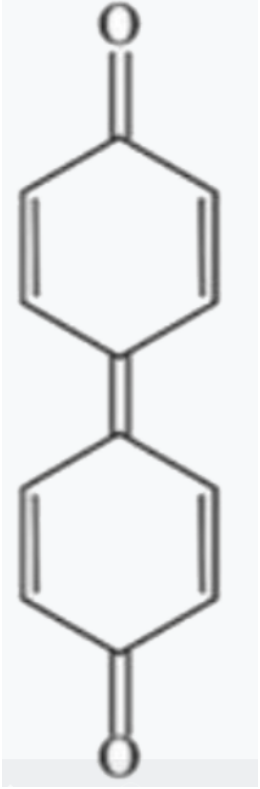
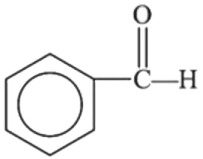
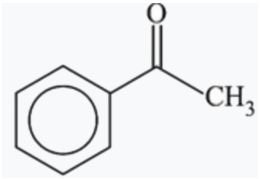
9. Which of the following compound will undergo tautomerism?

A. 

B.

C. 

D. 

Answer: D

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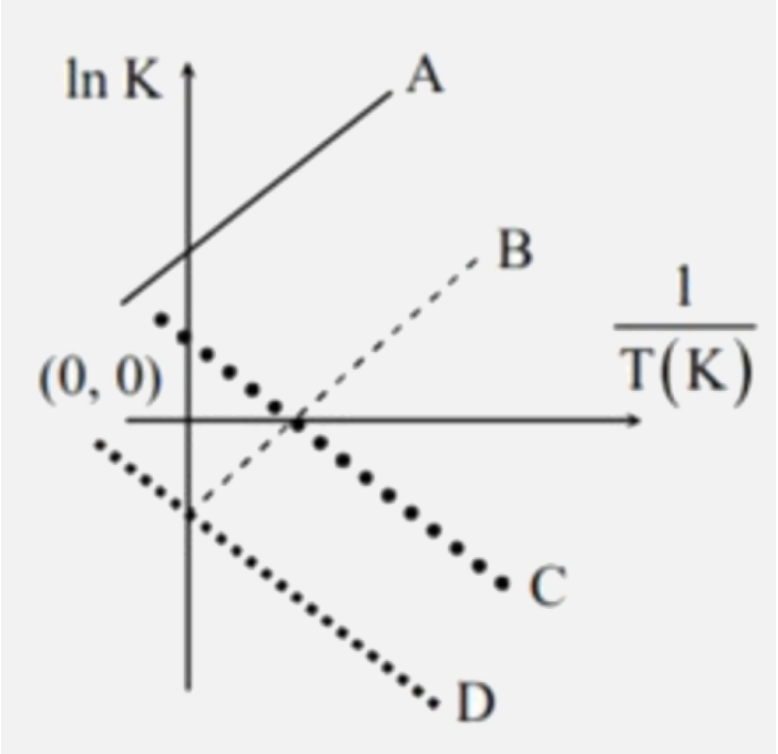
10. Which of the following lines correctly show the temperature dependence of equilibrium

constant K, for an exothermic reaction?



A. A and D

B. A and B

C. B and C

D. C and D

Answer: B

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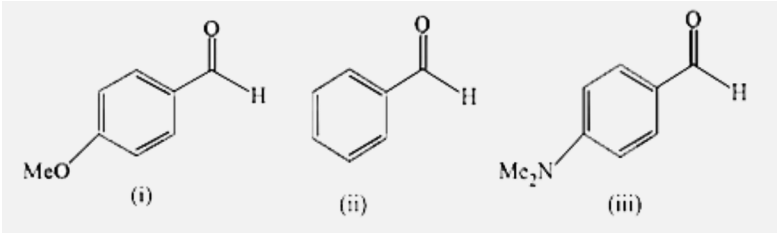
11. The K_{eq} values in HCN addition to following aldehydes are in the order



A. $i > ii > iii$

B. $ii > iii > i$

C. $iii > i > ii$

D. $ii > i > iii$

Answer: D

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12. An aqueous solution contains an unknown concentration of Ba^{2+}. When 50 mL of a 1 M solution of Na_2SO_4 is added, $BaSO_4$just begins to precipitate. The final volume is 500 mL. The solubility product of $BaSO_4$ is

1×10^{-10}. What is the original concentration of Ba^{2+}?

A. $1.0 \times 10^{-10} M$

B. $5 \times 10^{-9} M$

C. $2 \times 10^{-9} M$

D. $1.1 \times 10^{-9} M$

Answer: D

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13. Which of the following is incorrect?

A. $FeCl_3$ is used is detection of phenol

B. Fehling solution is used in detection of glucose

C. Tollen's reagent is used in detection of unsaturation

D. $NaHSO_3$ is used in detection of carbonyl compound

Answer: C

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14. At $518^{\circ}C$ the rate of decomposition of a sample of gaseous acetaldehyde initially at a pressure of 363 Torr, was $1.00T$ or rs^{-1} when 5% had reacted and $0.5T$ or rs^{-1} when 33% had reacted. The order of the reaction is

A. 0

B. 2

C. 3

D. 1

Answer: B

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15. The basic character of the transition metal monoxide follows the order

A. $VO > CrO > TiO > FeO$

B. $CrO > VO > FeO > TiO$

C. $TiO > FeO > VO > CrO$

D. $TiO > VO > CrO > FeO$

Answer: D

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16. The incorrect statement about the oxoacids, $HClO_4$ and $HClO$, is

A. The central atom in both $HClO_4$ and $HClO$ is sp^3 hybridized

B. $HClO_4$ is formed in the reaction between Cl_2 and H_2O

C. The conjugate base of $HClO_4$ weaker base than H_2O

D. $HClO_4$ is more acidic than $HClO$ because of the resonance stabilization of its anion

Answer: B

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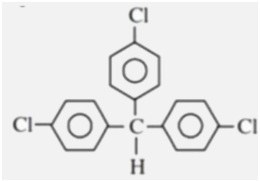
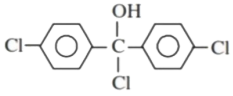
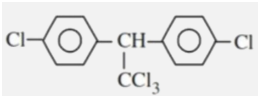
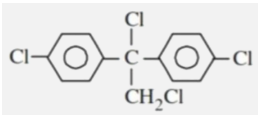
17. Trichloroacetaldehyde, CCl_3CHO reacts with chlorobenzene in presence of sulphuric acid and produces.

A. 

B. 

C. 

D. 

Answer: C

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18. When metal ‘M’ is treated with NaOH, a white gelatinous precipitate ‘X’ is obtained, which is soluble in excess of NaOH. Compound ‘X’ when heated strongly gives an oxide which is used in chromatography as an adsorbent. The metal ‘M’ is

A. Fe

B. Zn

C. Ca

D. Al

Answer: D

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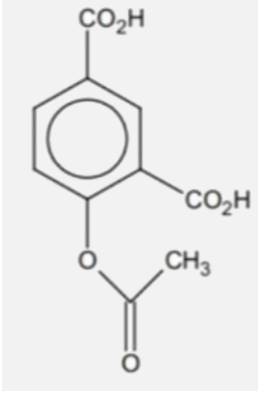
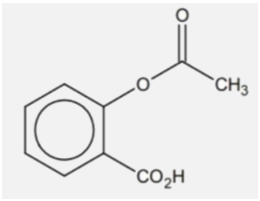
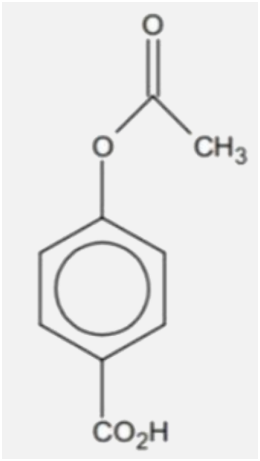
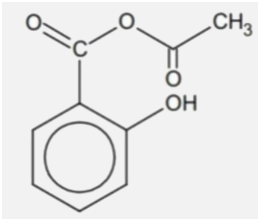
19. Phenol on treatment with CO_2 in the presence of $NaOH$ followed by acidification produces compound X as the major product. X on treatment with $(CH_3CO)_2O$ in the presence of catalytic amount of H_2SO_4 produces

A. 

B. 

C. 

D. 

Answer: B

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20. The recommended concentration of fluoride ion in drinking water is up to 1 ppm as fluoride ion is required to make teeth enamel harder by converting $\left[3Ca_3(PO_4)_2.Ca(OH)_2\right]$

A. $\left[3\left(Ca(OH)_2\right).CaF_2\right]$

B. $\left[CaF_2\right]$

C. $\left[3(CaF_2).Ca(OH)_2\right]$

D. $\left[3Ca_3(PO_4)_2.CaF_2\right]$

Answer: D

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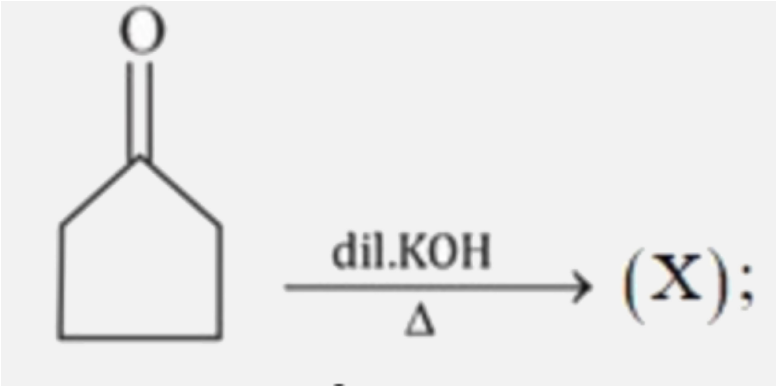
21. 

how many sp^2 carbon atoms are present in

the final product?

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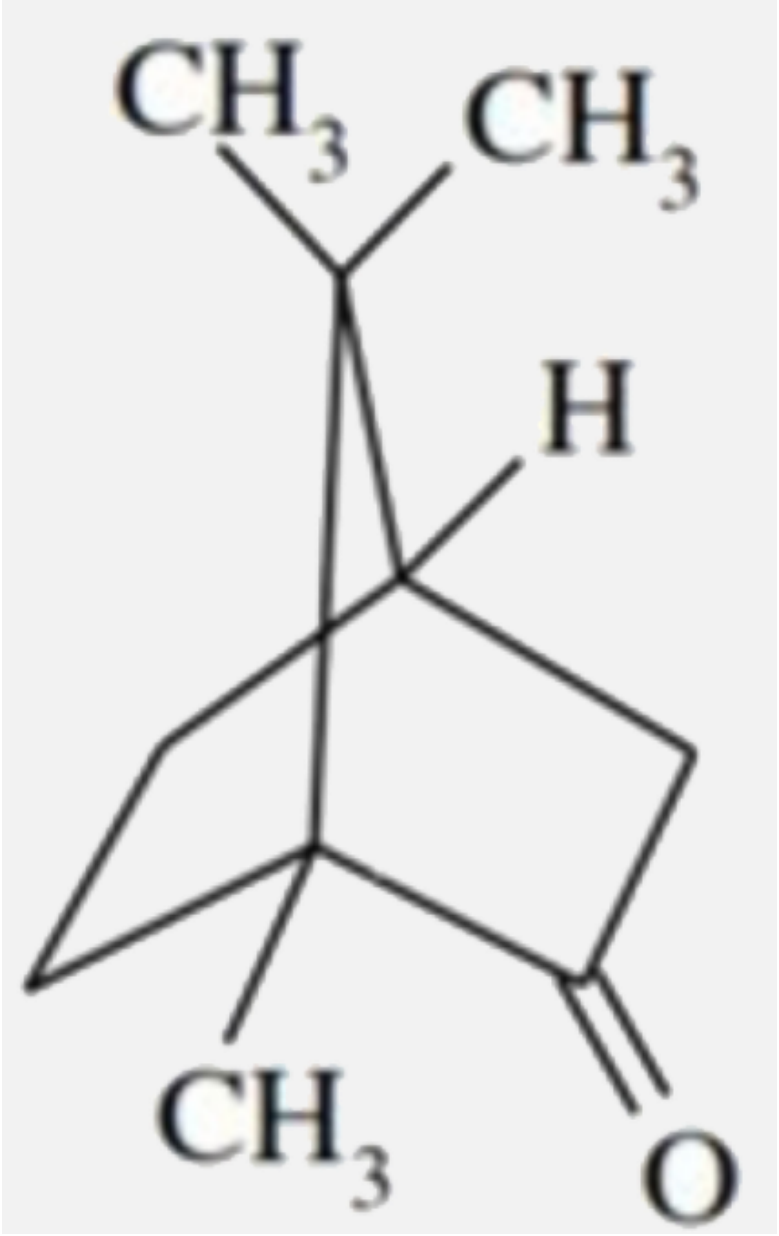
22. The total number of stereoisomers that can exist for M is



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23. One mole of $N_2O_4(g)$ at 300 K is kept in a closed container under one atmosphere. It is heated to 600K when 20% by mass of N_2O_4(g) decomposes to NO_2(g). The resultant pressure is:

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24. Among the following, the number of compounds that can react with PCl_5 to give $POCl_3$ is O_2,CO_2,SO_2,H_2O,H_2SO_4,P_4O_{10}.

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25. The number of geometric isomers possible for the complex $[CoL_2Cl_2]^- \left(L = H_2NCH_2CH_2O^-\right)$ is

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