CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 83

Chemistry

1. The correct order of boiling point is

A. $T_2 < D_2 < H_2$

B. n - pentane$<$neo - pentane

C. $Xe < Ar < He$

D. m - nitrophenol $>$ o - nitrophenol

Answer: D

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2. In the reaction , $4A + 2B + 3C \rightarrow A_4B_2C_3$ what will be the number of moles of product formed , starting from 1 mole of A,06 mole of B and 0.72 mole of C :-
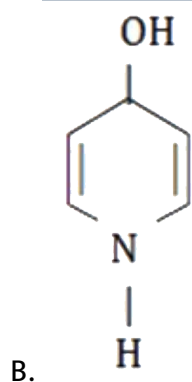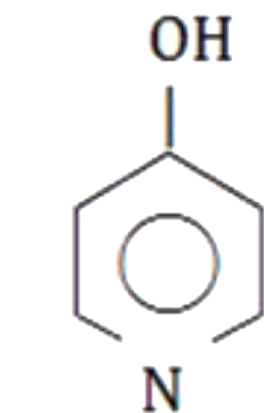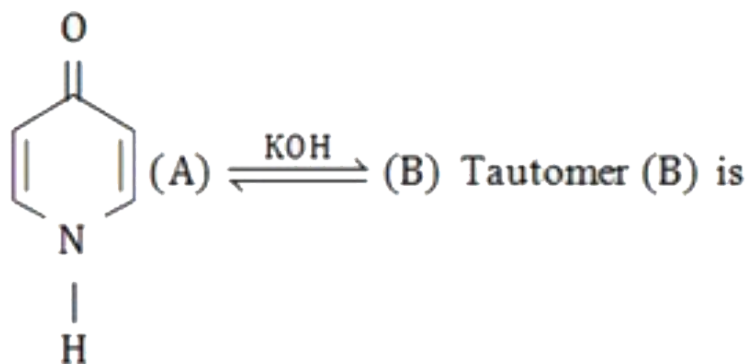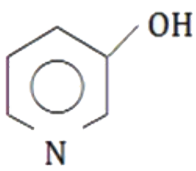
A. 0.25

B. 0.3

C. 0.24

D. 2.32

Answer: C

3. Complete the following reaction

(A) $\xrightarrow{\text{KOH}}$ (B) Tautomer (B) is

A.

B.

C.

D.
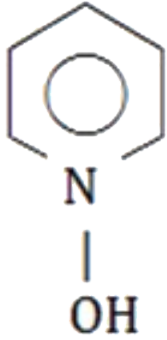
Answer: A

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4. An $\alpha -$ paticle approaches the target nucleus of copper (Z = 29) is such a way that the vlaue of impact parameter is zero. The distance of closest approach will be

A. $\dfrac{2\pi\varepsilon_0(K.\,E.\,)_\alpha}{29e^2}$

B. $\dfrac{29e^2}{2\pi\varepsilon_0(K.\,E.\,)_\alpha}$

C. $\dfrac{4\pi\varepsilon_0(K.\,E.\,)_\alpha}{29e^2}$

D. $(K.\,E.\,)_\alpha$

Answer: B

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5. $\left[Fe(H_2O)_6\right]^{2+}$ and $\left[Fe(CN)_6\right]^{4-}$ differ in

A. geometry, magnetic moment

B. geometry, hybridization

C. magnetic moment, colour

D. hybridisation, number of d - electrons

Answer: C

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6. Ten moles of an ideal gas are filled in a closed vessel. The vessel has cylinder and piston type arrangement and pressure of the gas remains constant at 0.821 atm. Which of the following graph represents correct variation of log V vs log T?
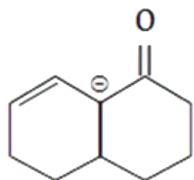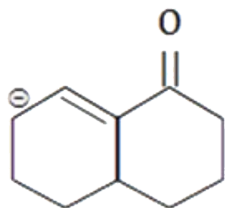
(V = Volume in litre and T = temperature in Kelvin)
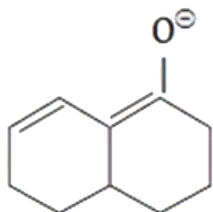
A.

B.

C.

D.
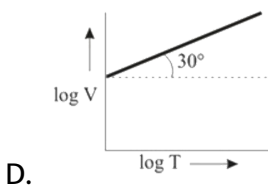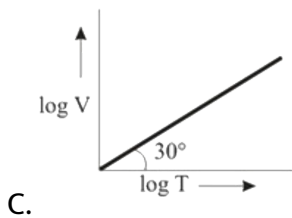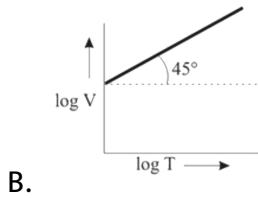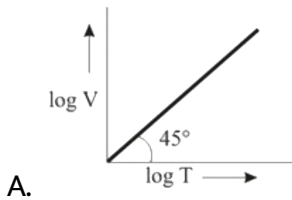
Answer: A

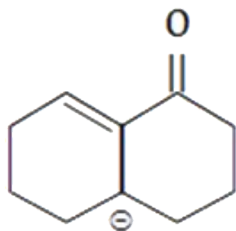7. Which of the following is not a resonance structure of the other?

A.

B.

C.

D.

Answer: D

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8. Nitrogen dioxide can not be obtained from

A. $Cu(NO_3)_2$

B. $Hg(NO_3)_2$

C. $NaNO_3$

D. $AgNO_3$
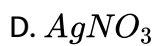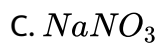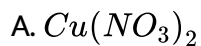
Answer: C

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9. The S-S bond energy is if
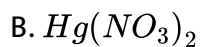
$$\Delta H_f^\circ \left(E_t - S - E_t \right) = -147 kJ/mol, \Delta H_f^\circ \left(E_t - S - S - E_t \right) = -202k$$

A. 168 kJ

B. 126 kJ

C. 278 kJ

D. 572 kJ

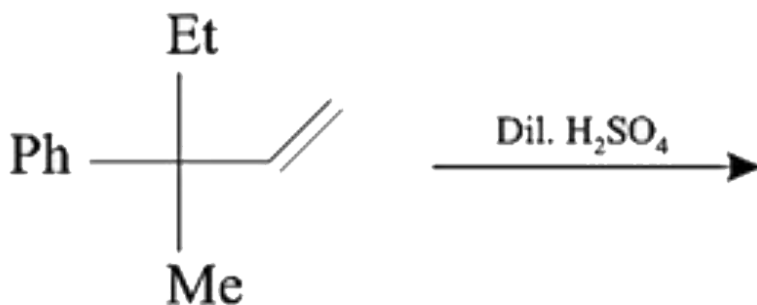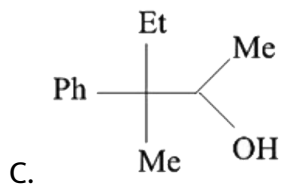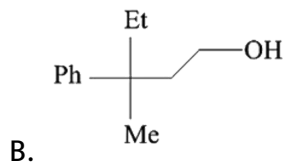Answer: C

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10. The major product in the reaction is

$$\xrightarrow{\text{Dil. } H_2SO_4}$$

A.

Et
Me
Ph
Me
OH

B.

Et
—OH
Ph
Me

C.

Et
Me
Ph
Me   OH
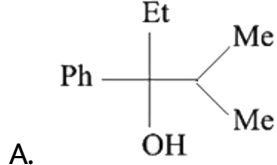
D. Both B and C

Answer: A

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11. $BX_3 + NH_3 \xrightarrow{B.T.} BX_3 \cdot NH_3 +$Heat of adduct formation (ΔH)
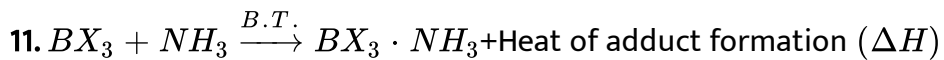
The numberical value of ΔH is found to be maximum for:

A. BF_3

B. BCl_3
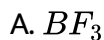
C. BBr_3

D. BI_3

Answer: D

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12. A 250.0 mL sample of a 0.20M Cr^{3+} is electrolysed with a current of 96.5 A. If the remaining $[Cr^{3+}]$ is 0.1 M, the duration of process is:

A. 75 sec

B. 150 sec

C. 225 sec

D. 25 sec

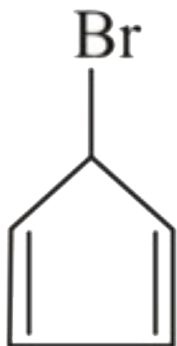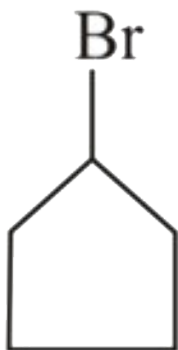**Answer: A**

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13. Which of the following is least reactive towards $S_N 1$?

Br

A.

Br

B.

Br
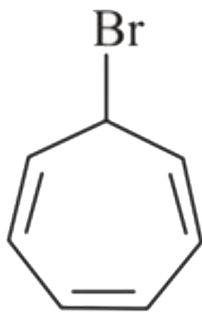
C.
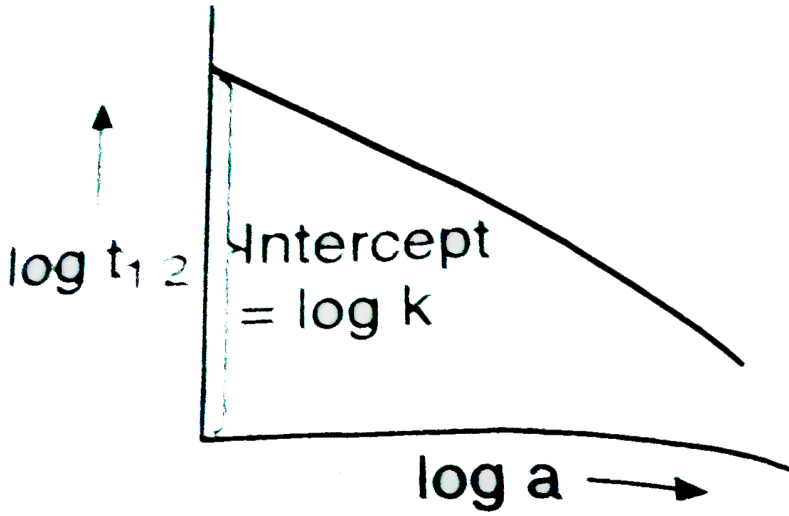
D.
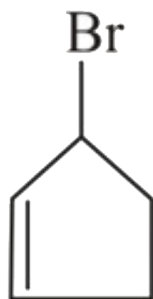
Answer: A

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14. For a second order reaction, $2A \rightarrow$ Products, a plot of $\log t_{1/2}$ vs log a (where a is initial concentration) will give an intercept equal to which

one of the following?

A. $\dfrac{1}{k}$

B. $\log\left(\dfrac{1}{2k}\right)$

C. $\log\left(\dfrac{1}{k}\right)$

D. $\log k$

Answer: D

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15. Consider the following metallurgical processes :

(I) Heating impure metal with CO and distilling the resulting volatile carbonyl $(b.\,p.\,43^\circ C)$ and finally decomposition at $150^\circ - 200^\circ C$ to get the pure metal.

(II) Heating the sulphide ore in air until a part is converted to oxide and then further heating in the absence of air to let the oxide react with unchanged metal sulphide.

(III) Electrolysis of the molten electrolyte containing approximately equal amounts of the metal chloride and NaCl to obtain the metal.

The processes used for obtaining magnesium , nickel and copper are respectively.

    A. (I), (II) and (III)

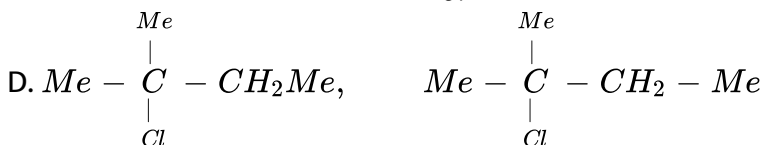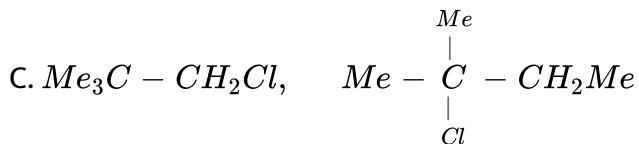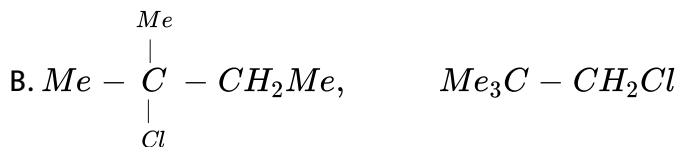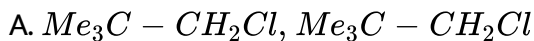   B. (II), (III) and (I)

    C. (III), (I) and (II)

    D. (II), (I) and (III)

Answer: C

16. (A) $\xleftarrow{HCI + ZnCI_2}$ *[Math Processing Error]* (B)

(A) and (B) are:

A. $Me_3C - CH_2Cl, Me_3C - CH_2Cl$

B. $Me - \overset{\overset{\displaystyle Me}{|}}{\underset{\underset{\displaystyle Cl}{|}}{C}} - CH_2Me$, $Me_3C - CH_2Cl$

C. $Me_3C - CH_2Cl$, $Me - \overset{\overset{\displaystyle Me}{|}}{\underset{\underset{\displaystyle Cl}{|}}{C}} - CH_2Me$

D. $Me - \overset{\overset{\displaystyle Me}{|}}{\underset{\underset{\displaystyle Cl}{|}}{C}} - CH_2Me$, $Me - \overset{\overset{\displaystyle Me}{|}}{\underset{\underset{\displaystyle Cl}{|}}{C}} - CH_2 - Me$

Answer: B

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17. The silicate anion in the mineral kinoite is a chain of three SiO_4 tetrahedra, that share corners with adjacent tetrahedra. The charge pof
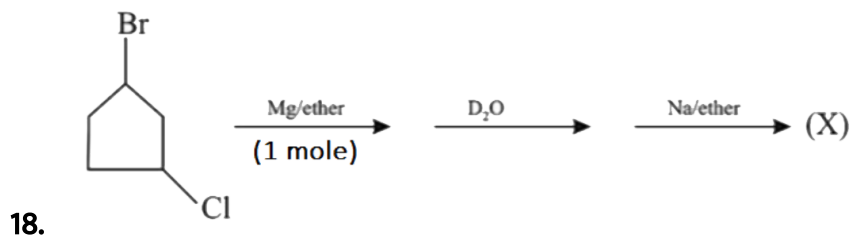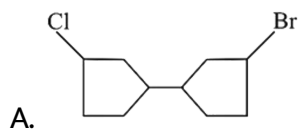
silicate anion is

A. − 4

B. − 8

C. − 6

D. − 2

Answer: C

18.

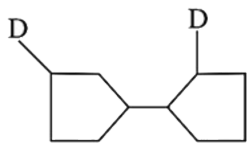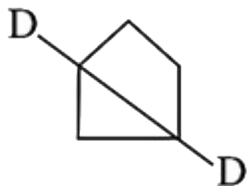The compound (X) is

A.

B.

C.

D.

Answer: B

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19. What will be the pH of a solution formed by mixing $40cm^2$ of $0.1MHCl$ with $10cm^3$ of $0.45MNaOH$
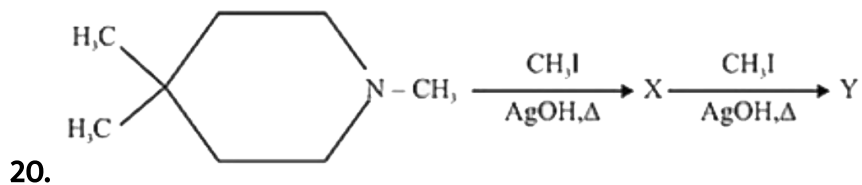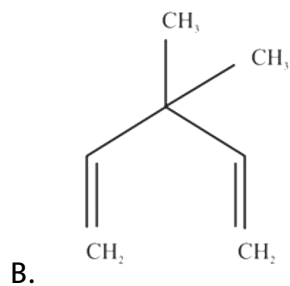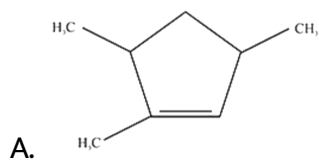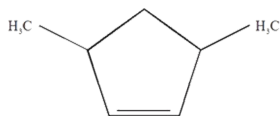
A. 10

B. 8

C. 5

D. 12

Answer: D

20.

Which of the following compounds is likely to be a product Y in this case?

A.

B.

C.

D.
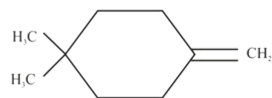
Answer: B

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21. One of the monomer of Nylon 6, 6 is an acid. How many $-COOH$ groups are present in this acidic monomer.

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22. How many chiral C - atoms are present in Cimetidine.
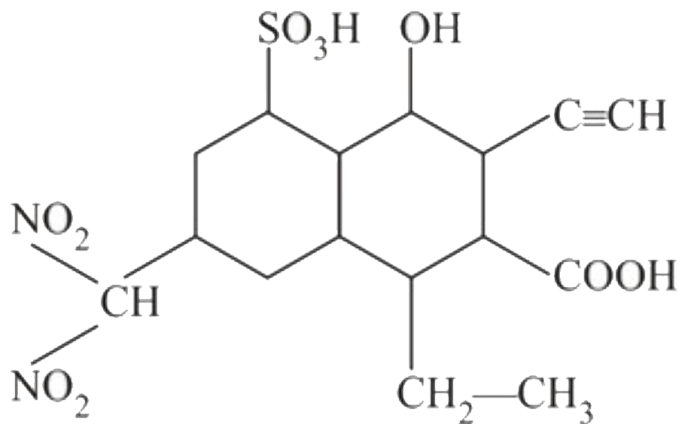
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23. If the highest oxidation states shown by any Lanthanide and any Actinide are $+X$ and $+Y$, the sum of $X + Y$ is euqal to?

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24. How many of these properties are intensive here Temperature, Refractive index, density, enthalpy, entropy, molar heat capacity, Gibb's free energy, pH.

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25. How many acidic hydrogen atoms are present in this compound