



CHEMISTRY

NTA MOCK TESTS ENGLISH

NTA NEET SET 40

Chemistry

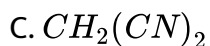
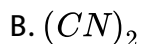
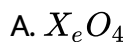
1. The angular momentum of electrons in d orbital is equal to

- A. $\sqrt{2}h$
- B. $2\sqrt{3}h$
- C. 0
- D. $\sqrt{6}h$

Answer: D

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2. Which of the following species contains equal number of pi and pi bonds ?



Answer: A

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3. The solubility product of $Cr(OH)_3$ at 298 K is 6.0×10^{-31} . The concentration of hydroxide ions in a saturated solution of $Cr(OH)_3$ will be :

A. $(18 \times 10^{-31})^{1/4}$

B. $(4.86 \times 10^{-29})^{1/4}$

C. $(18 \times 10^{-31})^{1/2}$

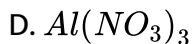
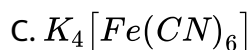
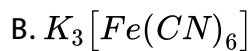
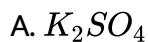
D. $(2.22 \times 10^{-31})^{1/4}$

Answer: A



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4. Which of the following electrolytes has the same value of van't Hoff factor as that of $Al_2(SO_4)_3$ (if all are 100 % ionised)?



Answer: C



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5. 'Metals are usually not found as nitrates in their ores '.

out of the following two (I and II) reasons which is/are true for the above observation ?

I.Metal nitrates are highly unstable

II.Metal nitrates are highly soluble in water

A. 1 is true but 2 is false

B. 1 is false but 2 true

C. 1 and 2 are false

D. 1 and 2 are true

Answer: B



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6. Which of the following statements is correct for a reversible process in a state of equilibrium ?

A. $\Delta G = 2.303RT \log K$

B. $\Delta G^\circ = - 2303RT \log K$

C. $\Delta G^\circ = 2303RT \log K$

D. $\Delta G = - 2.303RT \log K$

Answer: B



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7. When initial concentration of a reactant is doubled in a reaction, its half - life period is not affected. The order of the reaction is

A. First

B. Second

C. More than zero but less than first

D. zero

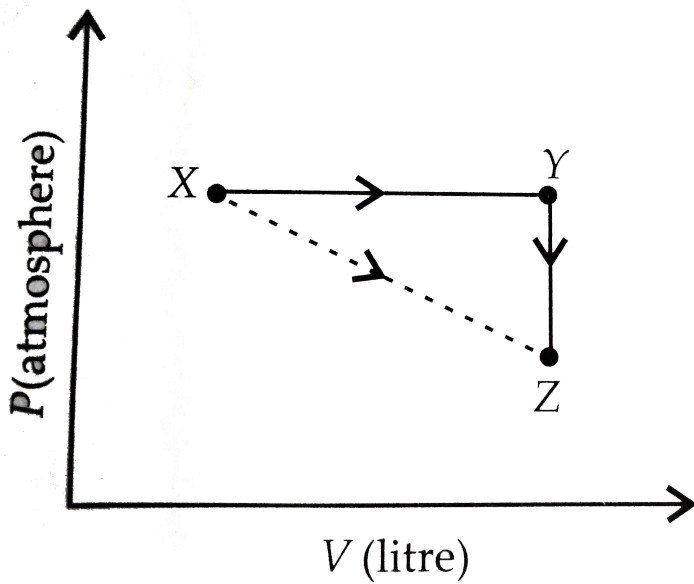
Answer: A



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8. For an ideal gas, consider only P-V work in going from an initial state X to the final state Z. The final state Z can be reached by either of the two paths shown in the figure. Which of the following choice(s) is(are)

correct? [Take ΔS as change in entropy and w as work done]



A. 1,2

B. 1,3

C. 2,3

D. 1,2,3

Answer: B



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9. Within each pair of element F & Cl s & se, and Li & Na , respectively , the elements that release more energy upon electron gain are

- A. Cl , S and Li
- B. F, S and Li
- C. Cl , Se and Na
- D. F, Se and Na

Answer: A



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10. 5 g of zinc is treated separately with an excess of

- (a) dilute hydrochloric acid and
- (b) aqueous sodium hydroxide

The ratio of the volumes of H_2 evolved in these two reactions is

- A. 1 : 4

B. 1:1

C. 1:2

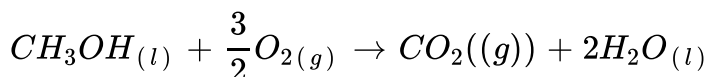
D. 2:1

Answer: B



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11. In a fuel cell methanol is used as fuel and oxygen gas is used as an oxidizer. The reaction is :



At 298K standard Gibb's energies of formation for $CH_3OH(l)$, $H_2O(l)$ and $CO_2(g)$ are -166.2 , -237.2 and $-394.4 kJmol^{-1}$ respectively. If standard enthalpy of combustion of methanol is $-726 kJmol^{-1}$, efficiency of the fuel cell will be :

A. 87 %

B. 90 %

C. 97 %

D. 80 %

Answer: C



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12. The boiling point of 0.2 mol kg^{-1} solution of X in water is greater than equimolal solution of Y in water. Which one of the following statements is true in this case ?

A. Molecular mass of X is greater than the molecular mass of Y.

B. Molecular mass of X is less than the molecular mass of Y.

C. Y is undergoing dissociation in water while X undergoes no change

D. X is undergoing dissociation in water.

Answer: D



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13. Biochemical Oxygen Demand (BOD) is the amount of oxygen required (in ppm):

- A. for the photochemical breakdown of waste present in $1m^3$ volume of a water body .
- B. for sustaining life in a water body.
- C. by bacteria to break - down organic waste in a certain volume of a water sample .
- D. by anaerobic bacteria to breakdown inorganic waste present in a water body .

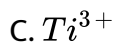
Answer: C



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14. Magnetic moment 2.83 BM is given by which of the following ions?

At. nos. Ti=22, Cr=24, Mn=25, Ni=28

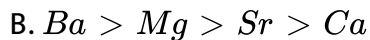
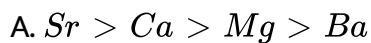


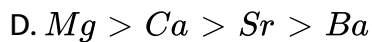
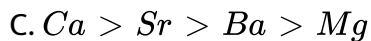
Answer: B



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15. Solubility of the alkaline earth's metal sulphates in water decreases in the sequence





Answer: D



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16. Maximum bond angle at nitrogen is present in which of the following ?



Answer: B



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17. The number of d-electrons in Fe^{2+} ($Z=26$) is not equal to the number of electrons in which one of the following ?

- A. p - electrons in Cl ($Z = 17$)
- B. d - electrons in Fe ($Z = 26$)
- C. p - electrons in Ne ($Z = 10$)
- D. s - electrons in Mg ($Z = 12$)

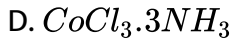
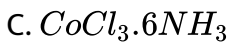
Answer: A



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18. Cobalt (III) chloride forms several octahedral complexes with ammonia. Which of the following will not give test for chloride ions with silver nitrate at $25^{\circ}C$?

- A. $CoCl_3.4NH_3$
- B. $CoCl_3.5NH_3$



Answer: D



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19. In comparison to the zeolite process for the removal of permanent hardness, the synthetic resins method is

- A. More efficient as it can exchange only cations
- B. Less efficient as the resins cannot be regenerated
- C. More efficient as it can exchange both cations as well as anions
- D. Less efficient as it exchange only anions

Answer: C



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20. Which of the following processes does not involve oxidation of iron?

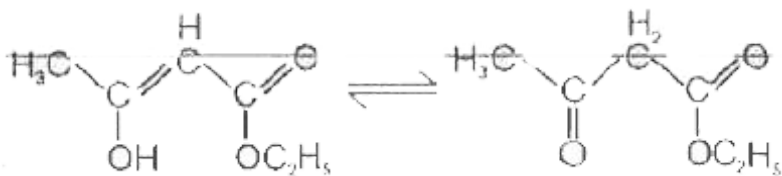
- A. Decolourization of blue $CuSO_4$ solution by iron
- B. Formation of $Fe(CO)_5$ from Fe
- C. Liberation of H_2 from steam by iron at high temperature
- D. Rusting of iron sheets

Answer: B



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21. The enolic form of ethyl acetoacelate as below has



- A. 16 sigma bonds and 1 pi - bond
- B. 9 sigma bonds and 2 pi- bonds

C. 9 sigma bonds and 1 pi- bonds

D. 18 sigma bonds and 2 pi- bonds

Answer: D



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22. Which of these statements about $[Co(CN)_6]^{3-}$ is true ?

A. $[Co(CN)_6]^{3-}$ has four unpaired electrons and will be in a low - spin configuration .

B. $[Co(CN)_6]^{3-}$ has four unpaired electrons and will be in a high - spin configuration .

C. $[Co(CN)_6]^{3-}$ has no unpaired electrons and will be in a high - spin configuration .

D. $[Co(CN)_6]^{3-}$ has no unpaired electrons and will be in a low - spin configuration .

Answer: D



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23. The reaction of $H_3N_3B_3Cl_3(A)$ with $LiBH_4$ in tetrahydrofuran gives inorganic benzene (B). Further, the reaction of (A) with (C) leads to $H_3N_3B_3(Me)_3$. Compounds (B) and (C) respectively, are :

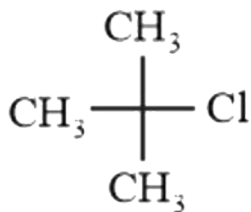
- A. Borazine and MeBr
- B. Boron nitride and MeBr
- C. Diborane and MeMgBr
- D. Borazine and MeMgBr

Answer: D

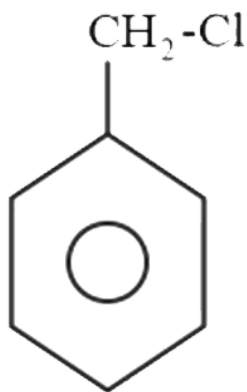


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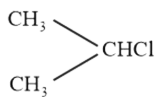
24. In which of the following compounds, the C - Cl bond ionisation shall give most stable carbonium ion ?



A.



B.



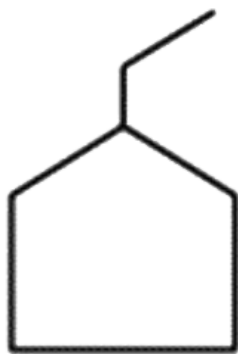
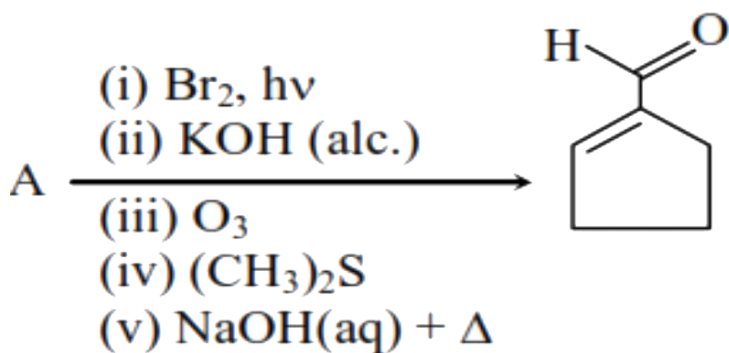
D.

Answer: B

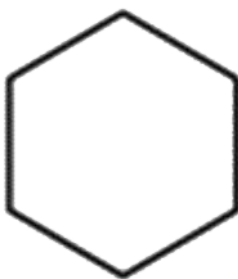


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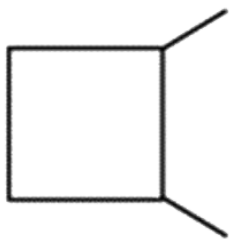
25. In the following reaction A is



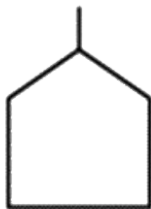
A.



B.



C.

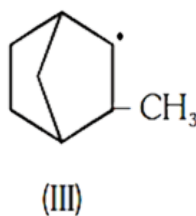
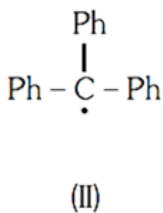
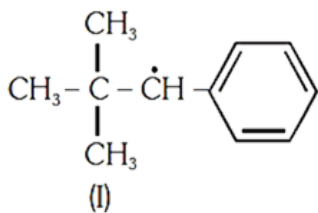


D.

Answer: B

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26. Consider the following compounds



Hyper conjugation occurs in

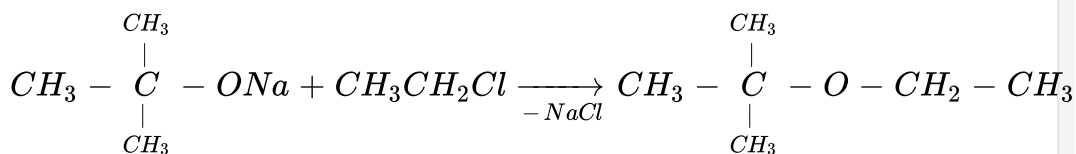
- A. II only
- B. III only
- C. I and III
- D. I only

Answer: B



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27. The reaction



is called

- A. Williamson continuous etherification process
- B. Gatterman - Koch reaction
- C. Etard reaction
- D. Williamson Synthesis

Answer: D



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28. The anodic half-cell of lead-acid battery is recharged using electricity of 0.05 Faraday. The amount of $PbSO_4$ electrolyzed in g during the process is : (Molar mass of $PbSO_4 = 303 \text{ g mol}^{-1}$)

A. 22.8

B. 15.2

C. 7.6

D. 11.4

Answer: C

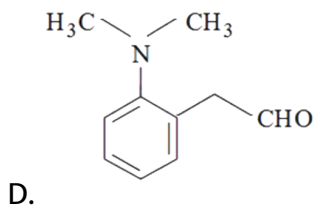
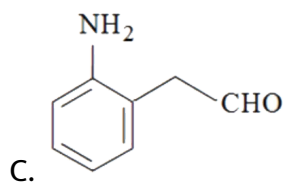
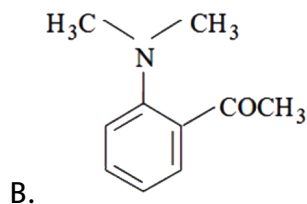
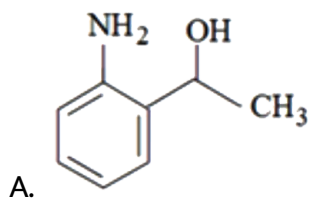


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29. The tests performed on compound X and their inferences are :

Test	Inference
(a) 2, 4 - DNP test	Coloured precipitate
(b) Iodoform test	Yellow precipitate
(c) Azo-dye test	No dye formation

Compound 'X' is :



Answer: B



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30. When propyne is treated with aqueous H_2SO_4 in the presence of $HgSO_4$, the major product is:

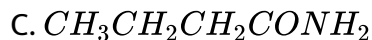
- A. Propanal
- B. Propyl Hydrogen Sulphate
- C. Acetone
- D. Propanol

Answer: C



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31. A compound 'X' on treatment with $Br_2 / NaOH$, provided C_3H_9N , which gives positive carbylamine test. Compound 'X' is :



Answer: C



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32. Among the colloids cheese (C), milk (M) and smoke (S), the correct combination of the dispersed phase and dispersion medium, respectively is :

A. C : solid in liquid , M , solid in liquid , S: solid in gas

B. C : solid in liquid , M , liquid in liquid , S: gas in solid

C. C : liquid in solid M : liquid in solid , S : solid in gas

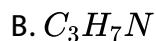
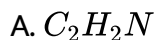
D. C : liquid in solid M : liquid in liquid , S : solid in gas

Answer: D



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33. An organic compound containing C , H and N gave the following results on analysis C = 40% , H = 13.33% , N = 46.67% . Its empirical formula would be

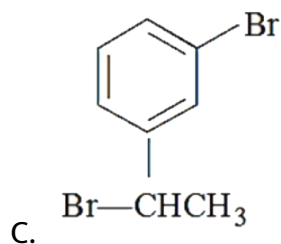
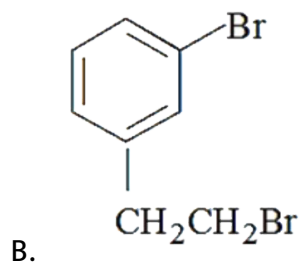
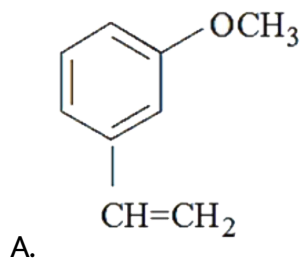
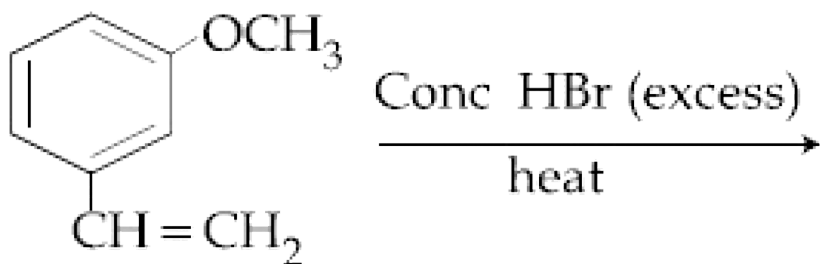


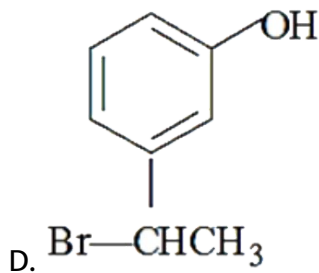
Answer: C



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34. The major product of the following reaction is :





Answer: D

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35. For the reaction : $\text{H}_2 + \text{I}_2 \rightarrow 2\text{HI}$, the differential rate law is

A. $-\frac{d[\text{H}_2]}{dt} = -\frac{d[\text{I}_2]}{dt} = \frac{1}{2} \frac{d[\text{HI}]}{dt}$

B. $-\frac{d[\text{H}_2]}{dt} = -2 \frac{d[\text{I}_2]}{dt} = \frac{1}{2} \frac{d[\text{HI}]}{dt}$

C. $-\frac{d[\text{H}_2]}{dt} = -\frac{d[\text{I}_2]}{dt} = \frac{d[\text{HI}]}{dt}$

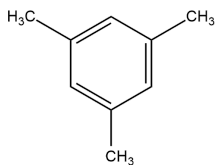
D. $-\frac{d[\text{H}_2]}{dt} = -\frac{d[\text{I}_2]}{dt} = -\frac{d[\text{HI}]}{dt}$

Answer: A

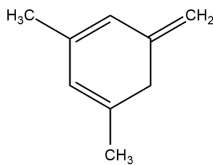
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36. Given

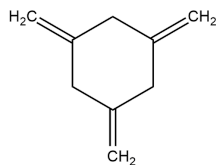
The enthalpy of hydrogenation of these compounds will be in the order



(I)



(II)



(III)

as

A. $III > II > I$

B. $II > III > I$

C. $II > I > III$

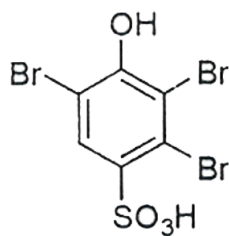
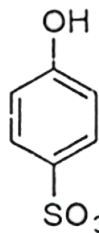
D. $I > II > III$

Answer: A

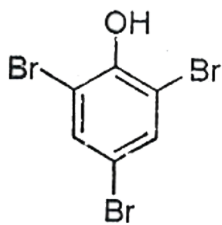


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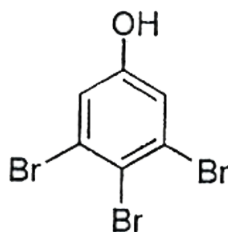
37. The major product of the following reaction is



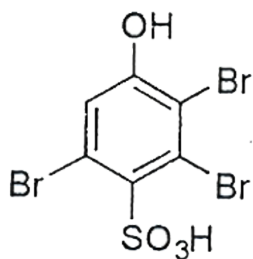
P



Q



R



S

A. *P*

B. *Q*

C. *R*

D. *S*

Answer: B



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38. Dissolving 120 g of urea (M W = 60) in 1000 g of water gave a solution of density 1.15 gmL^{-1} . The molarity of solution is:

A. 2.00 M

B. 2.22 M

C. 1.78 M

D. 2.05 M

Answer: D



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39. Which polymer has a 'chiral' monomer (s) ?

A. Nylon 6,6

B. Neoprene

C. PHBV

D. Buna - N

Answer: C



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40. Bithional is generally added to the soaps as an additive to function as a/an

A. Buffering agent

B. Softer

C. Antiseptic

D. Dryer

Answer: C

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41. Consider the following sequence of reaction

The final product (Q) is

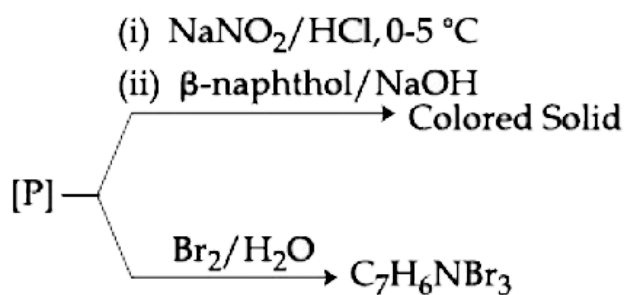
$Ph - NO_2 \xrightarrow{Sn / HCl} (X) \xrightarrow{NaNO_2 / HCl} P \xrightarrow{CuBr / HBr} (Q)$ The final product (Q) is

- A. chlorobenzene
- B. bromobenzene
- C. benzyl bromide
- D. benzyl chloride

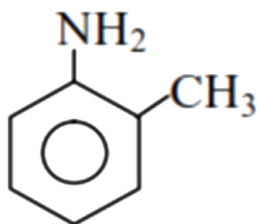
Answer: B

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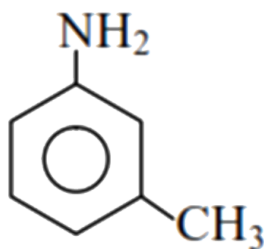
42. Consider the following reactions



The compound [P] is :



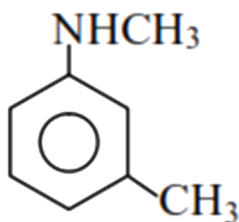
A.



B.



C.



D.

Answer: B

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43. The function of "Solution pump" is a biological process operating in each and every cell of all animals. Which of the following biologically important ions is also a constituent of the pump?



Answer: B



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44. A weak acid HX has the dissociation constant $1 \times 10^{-5} M$. It forms a salt NaX on reaction with alkali. The percentage hydrolysis of $0.1M$ solution of NaX is

A. $1.0E-6$

B. 0.0015

C. 0.0001

D. 0.001

Answer: C



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45. When the following aldohexose exists in its D-configuration, the total number of stereoisomers in its pyranose form, is

CHO

|

$CHOH$

|

$CHOH$

|

$CHOH$

|

$CHOH$

|

CH_2OH

A. 2

B. 4

C. 6

D. 8

Answer: D



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