



CHEMISTRY

BOOKS - AIIMS PREVIOUS YEAR PAPERS

AIIMS 2018 PAPER 1

Chemistry

1. What colour is observed when ZnO is heated ?

A. yellow

B. Violet

C. Violet

D. Blue

Answer: A



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2. Which of the following option is valid for zero reaction?

A. $t_{1/2} = \frac{3}{2}t_{1/4}$

B. $t_{1/2} = \frac{4}{3}t_{1/4}$

C. $t_{1/2} = 2t_{1/4}$

D. $t_{1/4} = (t_{1/2})^2$

Answer: C



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3. Violet colour appear in glass when we add-



Answer: A



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4. In which 'd' electrons are zero?

A. Th

B. Es

C. Lu

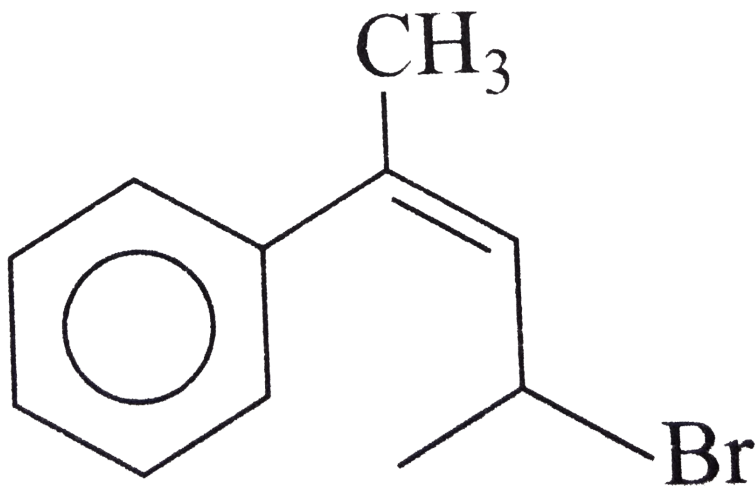
D. Am

Answer: D



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5. What is *IUPAC* name of the following ?



A. 4-Bromo-2-phenylpent-2-ene

B. 2-Bromo-4-phenylpent-2-ene

C. 4-Bromo 2-phenylpent-4-ene

D. 2-Bromo-4-phenylpent-3-ene

Answer: A



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6. Trien is

A. Hexa dentate, Mono anionic

B. evadentate, dianion

C. tetradentate, neutral

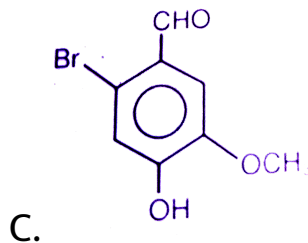
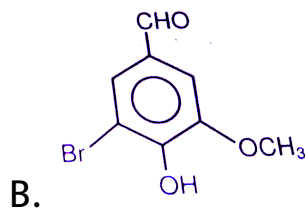
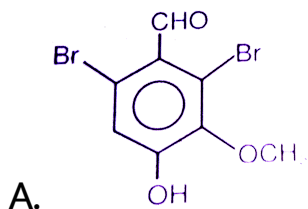
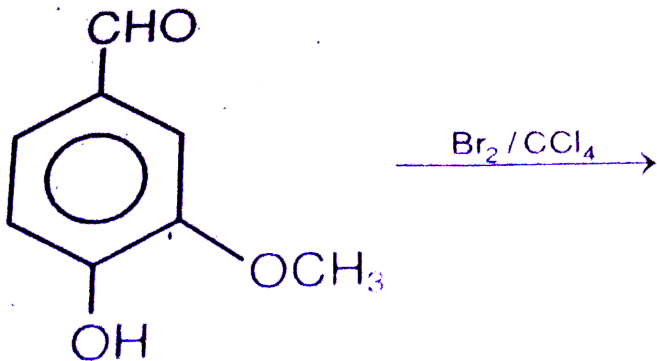
D. Mono dentate, anion

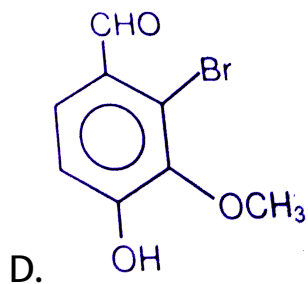
Answer: B



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7. Complete the following reaction





Answer: B

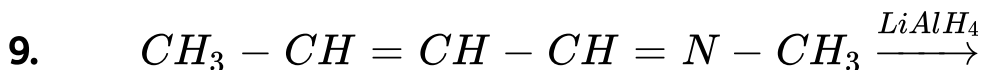
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8. Which is incorrect statement (Exact)

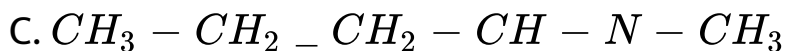
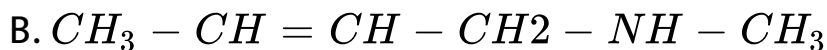
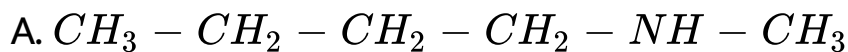
- A. Amyepectin is insoluble in water
- B. Fructose is reducing sugar
- C. Cellulose is the polymer B-D-glucose
- D. D-ribose sugar present in DNA

Answer: D

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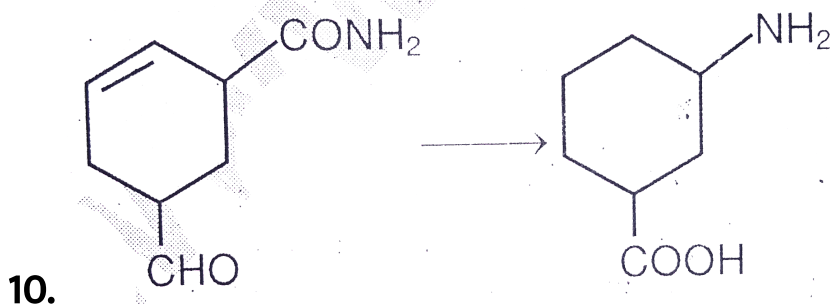


What is final product

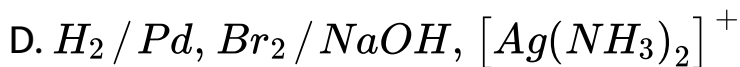
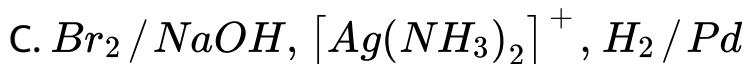
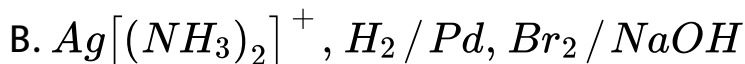
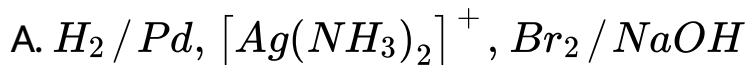


Answer: B

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What is sequence of reagent use to convert following:



Answer: B



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11. Match the following:

- | | |
|---------------------------|------------------------------|
| (i) Biodegradable polymer | (p) 3-Hydroxybutanoic acid |
| (ii) Bakelite | (q) phenol |
| (iii) Neoprene | (r) 2-chlorobutane-1,3-diene |
| (iv) Glyptal | (s) phthalic acid |

A. i-p,ii-q,iii-r,iv-s

B. i-q,ii-p,iii-r,iv-s

C. i-p,ii-q,iii-s,iv-r

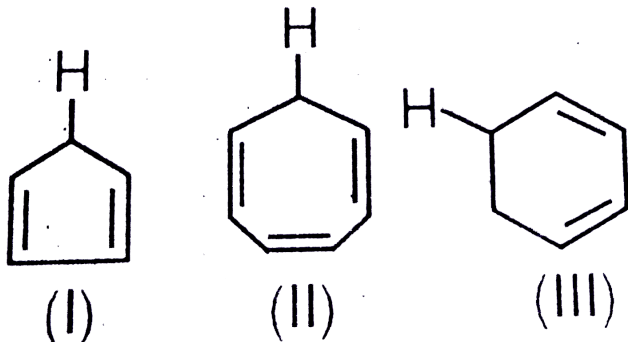
D. i-s,ii-r,iii-p,iv-q

Answer: A



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12. Order of increasing acidic strength



A. $I > II > III$

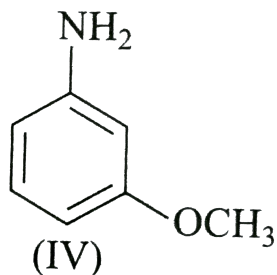
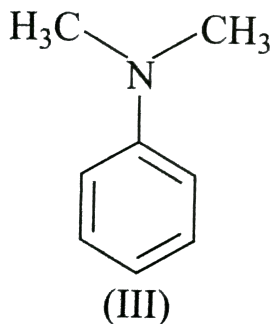
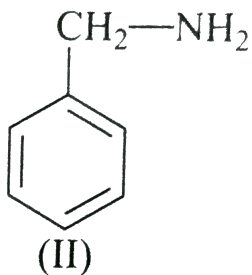
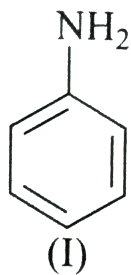
B. $II > III > I$

C. $I > III > II$

D. $III > II > I$

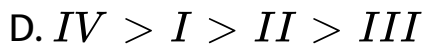
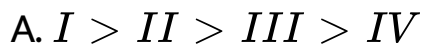
Answer: C

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13.

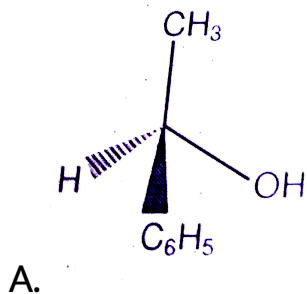
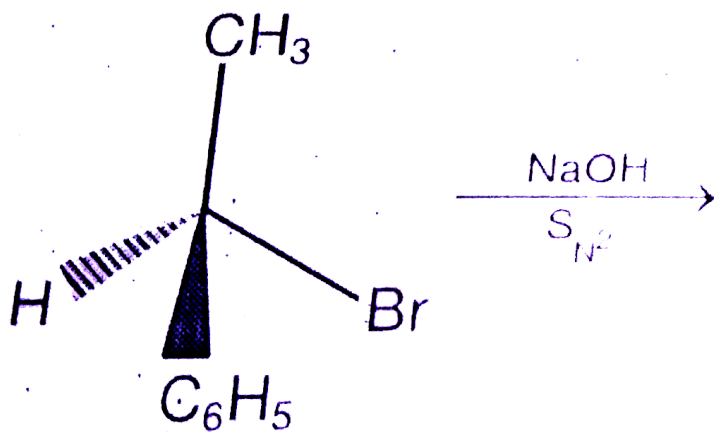
Correct order of basic strength

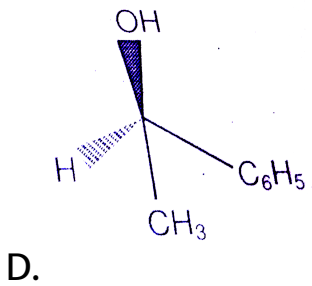
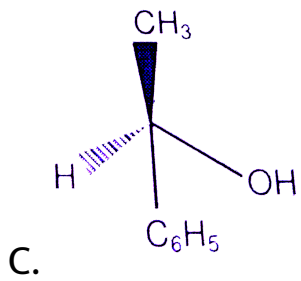
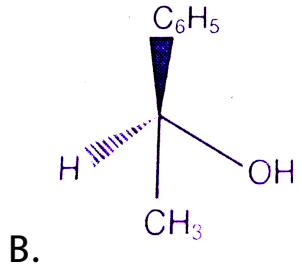


Answer: B

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14. Complete the following reaction





Answer: B

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15. F-centre is

- A. anion vacancy occupied by unpaired electron
- B. anion vacancy occupied by electron
- C. cation vacancy occupied by electron
- D. anion present in interstitial site

Answer: A

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16. Wave length of particular transition for H atom is 400nm. What can be wavelength of He^+ for same

transition:

A. 400nm

B. 100nm

C. 1600nm

D. 200nm

Answer: B



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17. Which of the following at least one lone pair in all of its halide.

A. Xe

B. Se

C. Cl

D. N

Answer: A



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18. One monoatomic gas is expanded adiabatically from $2L$ to $10L$ at atm external pressure find ΔU (in atm L)?

A. -8

B. 0

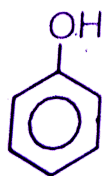
C. - 66.7

D. 58.2

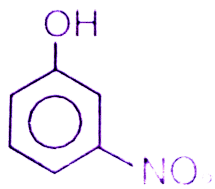
Answer: A

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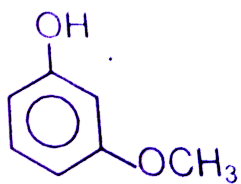
19. Correct order of acidic strength



(I)



(II)



(III)

A. $I > II > III$

B. $II > III > I$

C. $I > III > II$

D. $II > II > I$

Answer: B



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20. Which of the following is true for N_2O_5

A. Paramagnetic

B. Anhydride of HNO_2

C. Brown gas

D. Exist in solid state In form of $[NO_2^+][NO_3^-]$

Answer: D



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21. Which is least stable in aqueous medium



Answer: A



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22. When 45gm solution is dissolved in 600gm water freezing point lower by 2.2K, calculate molar mass of solute ($K_f = 1.86 \text{ kg mol}^{-1}$)

A. 63.4gm

B. 80gm

C. 90gm

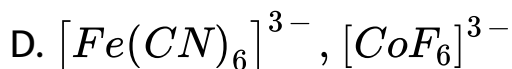
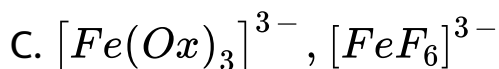
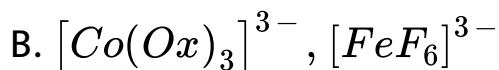
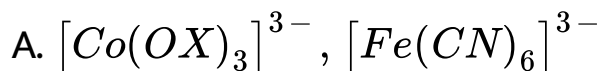
D. 21gm

Answer: A



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23. Which of the following is diamagnetic complex

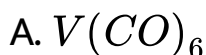


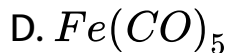
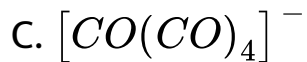
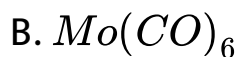
Answer: A



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24. Which of the following can be reduce easily





Answer: A



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25. When $NH_3(0.1M)50ml$ mix with $HCl(0.1M)10ml$

then what is pH of resultant solution ($pK_b = 4.75$)

A. 9.25

B. 10

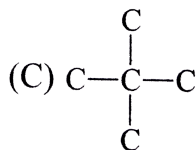
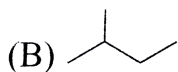
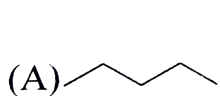
C. 9.85

D. 4.15

Answer: A

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26. What is decreasing order of Boiling point



A. $a > b > c$

B. $b > c > a$

C. $a > c > b$

D. $c > b > a$

Answer: C



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27. A gas ($1g$) at 4 bar pressure. If we add $2gm$ of gas B then the total pressure inside the container is 6 bar.

Which of the following is true?

A. $M_A = 2M_B$

B. $M_B = 2M_A$

C. $M_A = 4M_B$

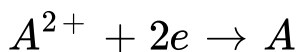
D. $M_B = 4M_A$

Answer: A



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28. Cell equation : $A = 2B^+ \rightarrow A^{2+} + 2B$



$E^\circ = +0.34V$ and $\log_{10} K = 15.6$ at $300K$ for cell

reactions Find E° for $B^+ + e \rightarrow B$

Given $\left[\frac{2.303RT}{nF} = 0.059 \right]$ at $300K$.

A. 0.81

B. 1.26

C. -0.54

D. $+0.94$

Answer: D



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29. What happen at increasing pressure at constant temperature

A. Rate of Haber process decrease

B. Solubility of gas increase in liquid

C. Solubility of solid increases in liquid

D. $2C_{(s)} + CO_{2(g)} \rightarrow 2CO_{(g)}$ reaction move forward

Answer: A



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30. Which of the following is incorrect

- A. Red P is toxic
- B. White 'P' is highly soluble in CS_2
- C. Black 'P' is thermodynamic is most stable.
- D. White 'P' is soluble in NaOH evolves PH_3

Answer: B

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31. Which of following statement is incorrect?

- A. On prolonged dialysis colloidal becomes stable

B. $AgNO_3$ in excess KI forms negative colloid

C. $AgNO_3$ in excess KI forms positive colloid

D. Medicines work best in colloidal form because of greater surface area.

Answer: B



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32. Which are extensive properties?

A. V & E

B. V & T

C. V & Cp

D. P and T

Answer: C



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33. Which is incorrect regarding S and P mixing (along Z axis.) ?

A. Nodal plane(s) present in ABMO

B. Nodal plane is absent in BMO

C. MO formed may have higher energy than parent

AO

D. MO formed are asymmetric

Answer: A

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34. When $CH_3COOCH_3 + HCl$ is titrated with $NaOH$ then at neutral point the colour of phenolphthalein becomes colourless from pink due to:

A. due to formation of CH_3OH

B. due to formation of CH_3COOH which act as a weak acid.

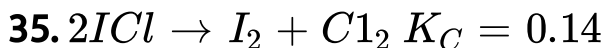
C. Phenophalein vaporizes.

D. due to presence of HCl

Answer: B



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Initial concentration of ICl is 0.6 M then equilibrium concentration of I_2 is:

A. 0.37M

B. 0.128M

C. 0.224M

D. 0.748M

Answer: B



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36. If reaction A and B are given with same temperature and same concentration but rate of A is double than B . Pre exponential factor is same for both the reaction then difference in activation energy $E_A - E_B$ is ?

A. $-RT \ln 2$

B. $RT \ln 2$

C. $2RT$

D. $\frac{RT}{2}$

Answer: A



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37. Which of the following have maximum pH ?

A. Black coffee

B. blood

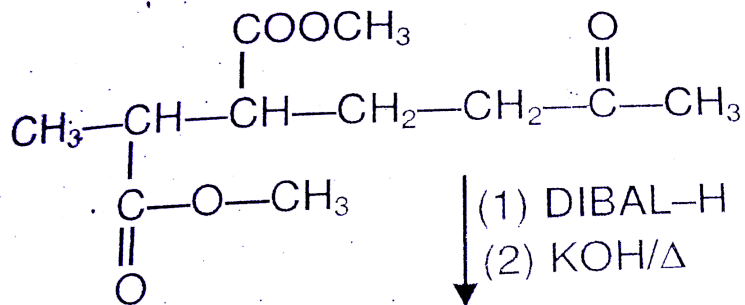
C. Gastric juice

D. Saliva

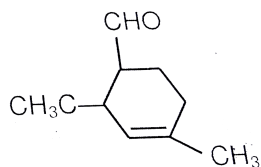
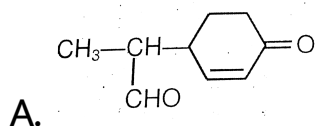
Answer: B



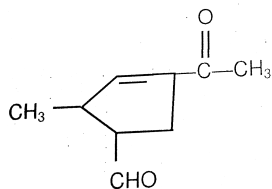
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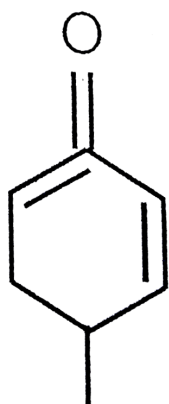


38.



B.

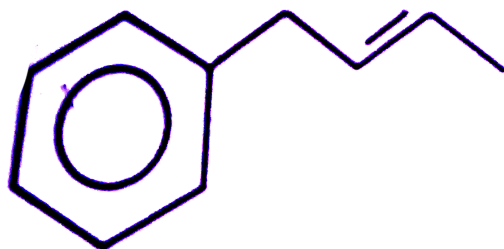




D. CHO

Answer: A::B::C

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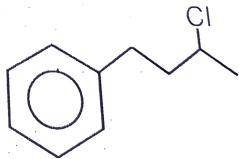


HCl

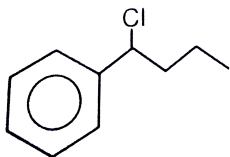


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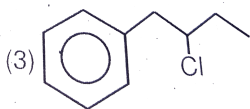
A.



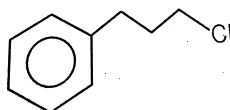
B.



C.



D.



Answer: B



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40. Assertion : $HCOOH$ formic acid add react with H_2SO_4 to form CO .

Reason : H_2SO_4 is mild (moderate) oxidizing agent.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer: B



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41. Assertion : Fe^{+3} is not valid for Brown Ring Test.

Reason : Because NO_3^- first convert into NO_2^-

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer: C



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42. Assertion: H_3PO_4 and H_3PO_3 both are present in fertilizers.

Reason: H_3PO_3 increases the solubility of fertilizers.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer: C



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43. Assertion : O_3 has higher boiling point than O_2 .

Reason : O_3 is allotrope of oxygen.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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44. Assertion : Tyrosine behave as a acidic at pH =7

Reason: pK_a of phenol is mole than 7.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both asertion and reason are false.

Answer: A



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45. Assertion: $Fe(OH)_3$ and As_2S_3 colloidal sol on mixing precipitates.

Reason: $Fe_{OH} - (3)$ and As_2S_3 combine and form new compistion precipate.

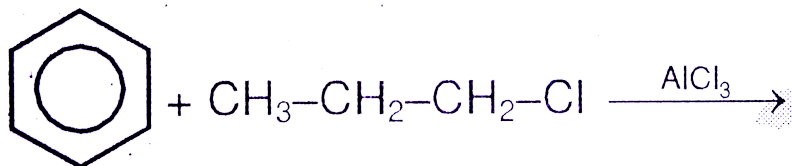
- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both asertion and reason are false.

Answer: C



46.

Assertion:



Product is

isopropyl benzene

Reason : Due to rearrangement of primary carbocation into secondary carbocation

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.

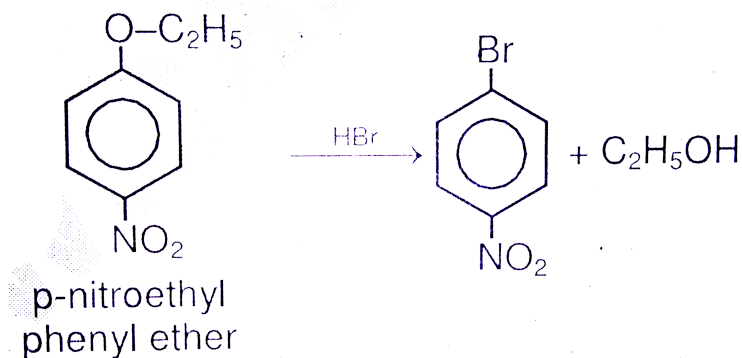
D. If both asertion and reason are false.

Answer: A

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47.

Assertion:



Reason: due to formation of highly stable carbocation.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D



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48. The questions given below consist of Assertion (A) and Reason (R) . Use the following key to select the

correct answer.

Assertion : In Zeise's salt, co-ordination number of Pt is five.

Reason : Ethene is a bidentate ligand .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer: D



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49. Assertion : When one solvent mixed with other solvent, vapour pressure of one increases and decreases.

Reason : When any solute added into solvent, vapour pressure of solvent decreases

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer: B



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50. Assertion: The surface tension of water is more than other liquid.

Reason: Water molecules have strong intermolecular H-bonding as attractive force.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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51. Assertion : Anti histamin does not effect secretion of acid in stomach :

Reason : Anti Histamine and antacids work on different receptors.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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