

ANTICIPATED QUESTIONS - NEET 2021

C  
H  
E  
M  
I  
S  
T  
R  
Y



**ANTICIPATED QUESTIONS  
NEET 2021**



1. If in  $\text{NH}_3$  formation N uses its pure atomic orbital then wrong statement is :-

- (A) At least three bond angle are of  $90^\circ$
- (B) Three ? bond with identical strength
- (C) Lone pair will be in 2s orbital
- (D) Molecule will be T-shaped



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2. Consider a reversible reaction  $2A + B \rightleftharpoons 2C$  having equilibrium constant 25. If a reaction vessel having 2, 0.25 and 0.5 mol of A, B and C respectively in 100 L vessel than what will be direction of reaction ?

- (A) Forward
- (B) Backward
- (C) Exist in equilibrium
- (D) can't predict



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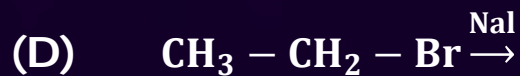
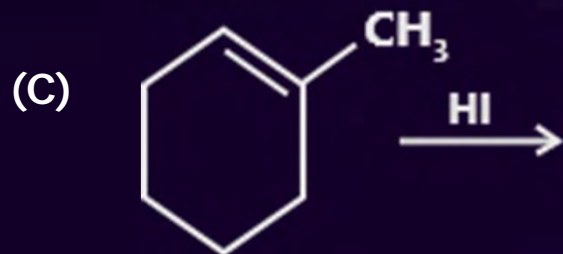
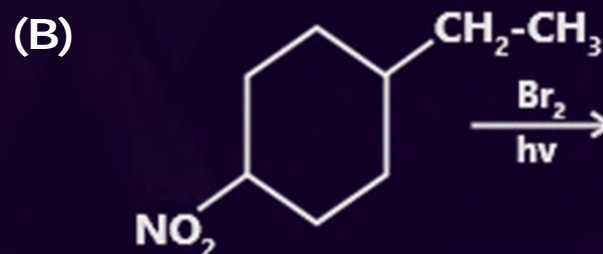
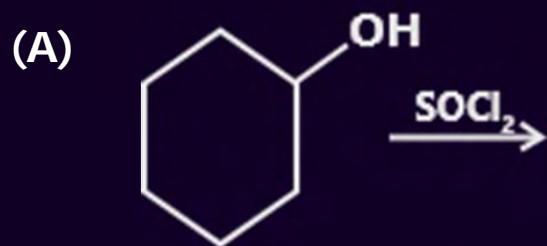
3.  $A \xrightarrow{\Delta} B + C_{(gas)} \xrightarrow{Ca(OH)_2} D_{(milky)} + H_2O \xrightarrow{C_{gas}} E$  Then incorrect statement is:-

- (A) A is  $NaHCO_3$
- (B) B is metal carbonate which is soluble in  $H_2O$
- (C) pH of aqueous solution of both A and E is 7
- (D) D is  $CaCO_3$



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4. Which of the following is not substitution reaction.



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5. Which of the following is most reactive towards  $S_N2$



6. Insulin has :-

- (A) 51 amino acid
- (B) 41 amino acid
- (C) 31 amino acid
- (D) 101 amino acid





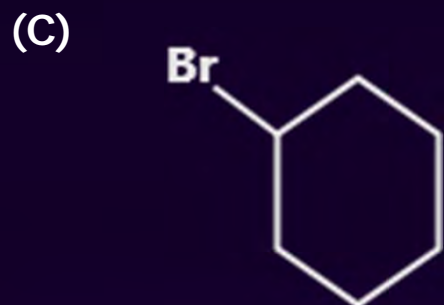
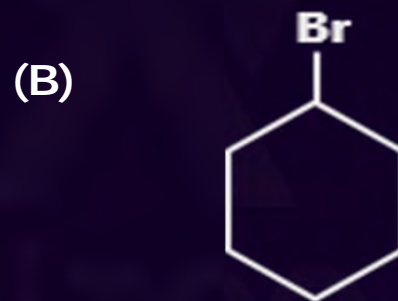
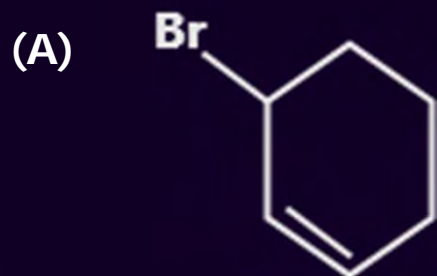
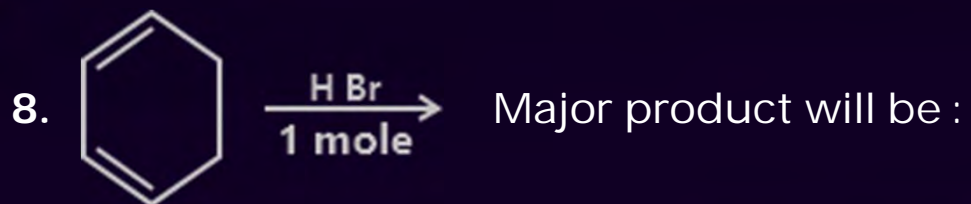
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7. 20 ml of 0.2 M HCN mix with 10 ml of 0.2 M NaOH, then calculate pH of resulting mixture. pKa value of HCN is 5 :-

- (A) 6
- (B) 7.5
- (C) 5
- (D) 11



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9. Which of the following is not addition polymer

- (A) Polythene
- (B) Teflon
- (C) Poly acrylonitrile
- (D) Terylene



10. Which of the following statement is not correct regarding calcination?

- (A) Impurities are removed in the form of elemental vapours
- (B) Carbonate ores convert into their oxides
- (C) Temperature of the process is maintained below the melting point of the mixture
- (D) Lower oxidation state oxides are oxidised further



11. Which given statement is wrong ?

- (A) Hydrated  $\text{CuSO}_4$  shows ionic, covalent, coordinate and H-bond
- (B)  $\text{NO}_3^-$  shows covalent and coordinate bonds
- (C)  $\text{K}_4[\text{Fe}(\text{CN})_6]$  shows only ionic and coordinate bonds
- (D) Anion of  $\text{K}_2\text{CO}_3$  shows resonance



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12. Correct order of bond angle for  bond will be :

- (A)  $\text{Ph} - \text{OH} > \text{CH}_3 - \text{O} - \text{CH}_3 > \text{CH}_3 - \text{OH}$
- (B)  $\text{CH}_3 - \text{O} - \text{CH}_3 > \text{Ph} - \text{OH} > \text{CH}_3 \text{ OH}$
- (C)  $\text{CH}_3 - \text{OH} > \text{CH}_3 - \text{O} - \text{CH}_3 > \text{Ph} - \text{OH}$
- (D)  $\text{CH}_3 - \text{O} - \text{CH}_3 > \text{CH}_3 \text{ OH} > \text{Ph} - \text{OH}$



13. In which hybridization angular shape is not possible ?

- (A)  $sp$
- (B)  $sp^2$
- (C)  $sp^3$
- (D) None of these



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14. (a) Secondary alcohol  $\xrightarrow{\text{H}_3\text{PO}_4}$

(b) Tertiary alcohol  $\xrightarrow[\Delta]{\text{H}_3\text{PO}_4}$

For above dehydration reaction rate of reaction will be

(A)  $a > b$

(B)  $a < b$

(C)  $a = b$

(D) None





15. Which of following is not extensive property:-

- (A) Temperature
- (B) pressure
- (C) Viscosity
- (D) All



16. Which of the following compounds does give  $N_2$  on heating?

(A)  $NH_4NO_2$

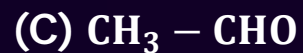
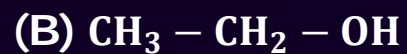
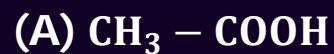
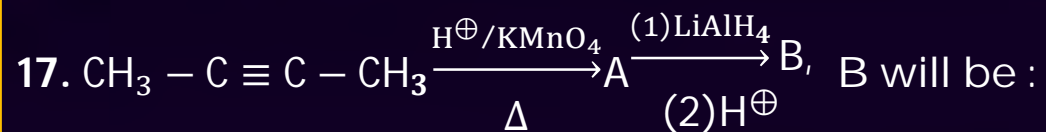
(B)  $NH_4NO_3$

(C)  $NaN_3$

(D) Both (1) and (3)



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18. Copper sulphate dissolves in excess of KCN to give

- (A)  $\text{CuCN}$
- (B)  $[\text{Cu}(\text{CN})_4]^{3-}$
- (C)  $[\text{Cu}(\text{CN})_4]^{2-}$
- (D)  $\text{Cu}(\text{CN})_2$



19.  $\Delta_c U^\circ$  of combustion of  $\text{CH}_4(\text{g})$  at certain temperature is  $-100\text{kJ/mol}$ . The value of  $\Delta_c H^\circ$  is

- (A) Equal to  $\Delta_c U^\circ$
- (B)  $< \Delta_c U^\circ$
- (C)  $> \Delta_c U^\circ$
- (D) Zero




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20. 1000 mL 1 M  $\text{CuSO}_4(\text{aq})$  is electrolysed by 9.65 amp current for 100 sec using Pt - electrode. Which is incorrect statement?

- (A) Blue colour intensity decreases during electrolysis.
- (B) Blue colour intensity remains constant if Cu-electrode used.
- (C) pH of solution is 8 after electrolysis.
- (D) At anode  $\text{O}_2$  gas liberated during electrolysis



21.  has correct IUPAC name.

- (A) 3 - Methyl hexanal
- (B) 2 - Methyl hexanal
- (C) Hexane - 1 - Carbaldehyde
- (D) Hexane - 2 - Carbaldehyde



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22. Gases possess characteristic critical temperature which depends upon the magnitude of intermolecular forces between the particles. Following are the critical temperatures of some gases.

Gases	P	Q	R	S
Critical temperature	33.2	5.3	154.3	126

in Kelvin From the above data what would be the order of liquefaction of these gases? Start writing the order from the gas liquefying first

(A) P, Q, R, S

(B) Q, R, P, S

(C) S, R, Q, P

(D) R, S, P, Q





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23.  $\text{Ph} - \text{O} - \text{CH}_2 - \text{Ph} \xrightarrow{\text{HI}} \text{A} + \text{B}$  will be -

- (A)  $\text{Ph} - \text{OH} + \text{Ph} - \text{CH}_2 - \text{I}$
- (B)  $\text{Ph} - \text{I} + \text{Ph} - \text{CH}_2 - \text{I}$
- (C)  $\text{Ph} - \text{I} + \text{Ph} - \text{CH}_2 - \text{OH}$
- (D)  $\text{Ph} - \text{OH} + \text{Ph} - \text{CH}_2 - \text{OH}$



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24. Which of the following complexes exhibit the highest paramagnetic behaviour ?  
Where gly = glycine, en = ethylenediamine and bpy = bipyridyl moities)  
(At. nos. Ti =22, V = 23, Fe = 26, Co= 27)

- (A)  $[\text{Co}(\text{OX})_2(\text{OH})_2]^{-3}$
- (B)  $[\text{Ti}(\text{NH}_3)_6]^{3+}$
- (C)  $[\text{V}(\text{gly})_2(\text{OH})_2(\text{NH}_3)_2]^+$
- (D)  $[\text{Fe}(\text{en})(\text{bpy})(\text{NH}_3)_2]^{2+}$



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25. In a face centered cubic arrangement of A and B atoms whose A atoms are at the corner of the unit cell and B atoms at the face centers. One of the B atoms missing from one of the face in unit cell. The simplest formula of compound is :-

- (A)  $AB_3$
- (B)  $A_8B_5$
- (C)  $A_2B_5$
- (D)  $AB_{2/5}$



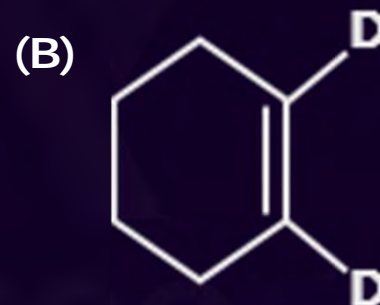
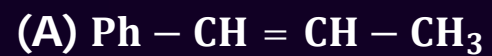
26. Which of the following is incorrectly matched ?

- (A)  $2r^+ + 2r^- = a$ ; For NaCl type crystal
- (B) Coordination number = 12 ; For fcc unit cell
- (C)  $4r = \sqrt{3} a$ ; For fcc unit cell
- (D) ZnS Crystal ; Frenkel defect



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27. Which of the following can show Geometrical isomerism.



(D) All of above



28. Which one of the following ions is the most stable in aqueous solution ?  
(At. No. Ti = 22, V = 23, Cr = 24, Mn=25)

- (A)  $\text{Mn}^{3+}$
- (B)  $\text{Cr}^{3+}$
- (C)  $\text{V}^{3+}$
- (D)  $\text{Ti}^{3+}$



29. Increasing value of magnetic moments of :-

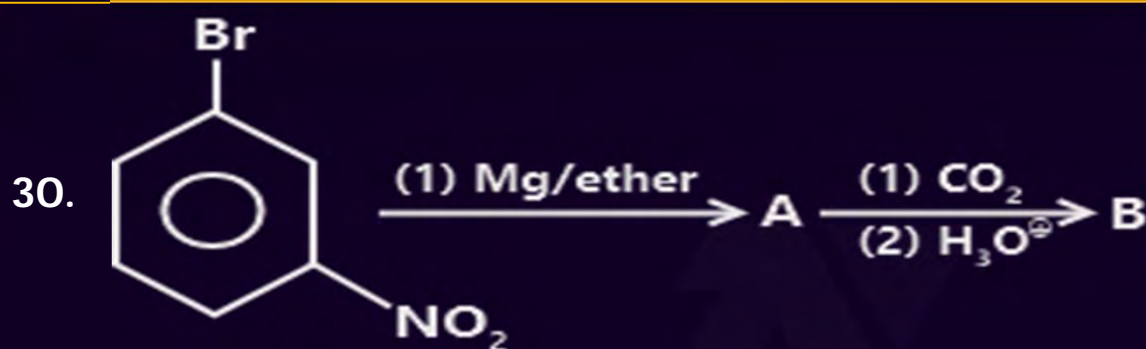
- (I)  $[\text{Fe}(\text{CN})_6]^{4-}$       (II)  $[\text{Fe}(\text{CN})_6]^{3-}$   
(III)  $[\text{Cr}(\text{NH}_3)_6]^{3+}$       (IV)  $[\text{Ni}(\text{H}_2\text{O})_4]^{2+}$

Is:

- (A) I < II < III < IV  
(B) IV < III < II < I  
(C) II < III < I < IV  
(D) I < II < IV < III



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- (A) 3 – Nitro benzoic acid
- (B) 3 – Nitro benzaldehyde
- (C) 3 – Amino benzoic acid
- (D) 3 – Amino benzaldehyde





31.  $R - C \equiv N + SnCl_2 + HCl \rightarrow A \xrightarrow{H_3O^+} RCHO$  reaction is known as :

- (A) Stephen reaction
- (B) Rosenmund reduction
- (C) Etard reaction
- (D) Mendius reaction



32. If  $k$  is rate constant and  $t$  is time then the degree of dissociation for a substance undergoing decay with first order kinetics is :-

- (A)  $e^{-kt}$
- (B)  $1 - e^{-kt}$
- (C)  $1 + e^{-kt}$
- (D)  $e^{kt}$



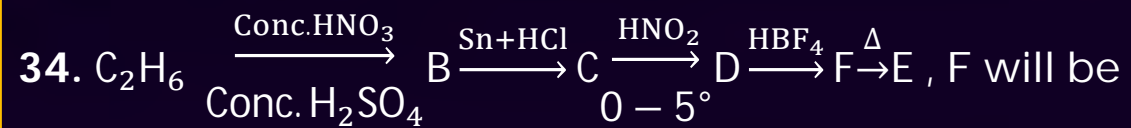
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33. A compound  $\text{MX}_2$  has observed and normal molecular masses 65.6 and 164 respectively. Calculate percentage of ionization of  $\text{MX}_2$  :-

- (A) 75%
- (B) 65%
- (C) 55%
- (D) 35%



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(A)



(B)



(C)



(D)



35. Incorrect statement regarding adsorption is :-

- (A) The extent of adsorption increases with the increases of surface area
- (B) Physical adsorption is an exothermic process but it's enthalpy of adsorption is quite low as compared to chemical adsorption.
- (C) Physical adsorption is highly specific and it will only occur if there is some possibility of chemical bonding between adsorbent and adsorbate.
- (D) Physisorption of a gas adsorbed at low temperature may change into chemisorption at a high temperature.



36. Which of the following statements is correct ?

- (A)  $[\text{Pt}(\text{NO}_3)_2(\text{en})_2]^{2+}$  complex ion can show linkage isomerism
- (B)  $[\text{Cr}(\text{CO}_3)(\text{NH}_3)_4] \text{Br}$  can show ionization isomerism
- (C)  $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$  can show hydrate isomerism
- (D)  $[\text{FeCl}_3(\text{NH}_3)_3]$  can exhibit structural isomerism



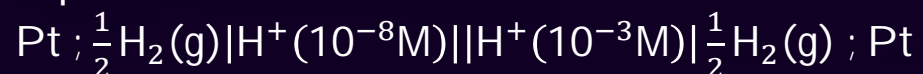
37. Find atomic number of that element from which pairing in 4f orbital starts :-

- (A) 57
- (B) 58
- (C) 64
- (D) 65



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38. What is the potential of the cell containing two hydrogen electrodes as represented below :-



- (A) -0.295 V
- (B) -0.0591 V
- (C) 0.295 V
- (D) 0.591 V





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39. 18 L mixture of  $N_2$  and  $H_2$  gives maximum 6 L of  $NH_3$  at same temperature and pressure then what will be ratio of  $N_2$  and  $H_2$  initially taken ?

- (A) 1 : 5
- (B) 1 : 1
- (C) 1 : 2
- (D) (1) & (2) both



40. The catalyst used in the hydrogenation of oils is

- (A) Fe
- (B) Ni
- (C) Pt
- (D)  $V_2O_5$



41. In which dative bond is not present ?

- (A) Protonation of ether
- (B) HCl dissolved in water
- (C) Dimerisation of  $\text{BeCl}_2$
- (D) Dimerisation of benzoic acid



42. Which of the following is invert sugar.

- (A) Sucrose
- (B) Maltose
- (C) Lactose
- (D) Glucose



43. Which of following is correct ?

- (A) Radius of orbit  $r_{2H} > r_{1He} > r_{1H}$
- (B) Ionization energy  $I. E_H > I. E_{He^+} > I. E_{Li^{+2}}$
- (C) Total Energy  $E_{1H} > E_{2H} > E_{3H}$
- (D) Energy difference  $E_{2H} - E_{1H} > E_{3H} - E_{2H} > E_{4H} - E_{3H}$



44. Which of the following compound forms silicones on hydrolysis ?

(A)  $(\text{CH}_3)_2\text{SiCl}_2$

(B)  $(\text{SiH}_3)_3\text{N}$

(C)  $\text{SiCl}_4$

(D) All



45. If  $\text{Br}^-$  configuration is  $[\text{Ar}] 3d^{10}4s^24p^6$  then  $\text{Br}^{+2}$  configuration will be identical to which element ?

- (A) Se
- (B) As
- (C) Ga
- (D) Ge



46. The example(s) of pesticide is / are -

- (A) Aldrin
- (B) Sodium chlorate
- (C) Dieldrin
- (D) Both (1) and (3)





47. An emulsion can be stabilized by use of -

- (A) Emulsifiers
- (B) Peptizing agent
- (C) Biochemical catalysts
- (D) None of the above



48. Vapour phase refining process is used for refining:

- (A) Ni
- (B) Ti
- (C) Zr
- (D) All of the above

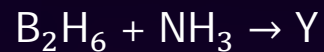
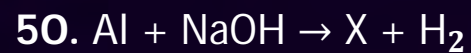


49. Quick lime is heated with silica to give:

- (A)  $\text{CaSiO}_3$
- (B)  $\text{CaSiO}_4$
- (C)  $\text{CaSiO}$
- (D)  $\text{Ca}(\text{SiO})_3$



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X and Y in the above reaction are -

- (A)  $\text{X} = \text{Al}(\text{OH})_2$  ;  $\text{Y} = \text{N}_2[\text{BH}_4]$
- (B)  $\text{X} = \text{Na}[\text{Al}(\text{OH})_4]$  ;  $\text{Y} = \text{N}_3\text{B}_3\text{H}_6$
- (C)  $\text{X} = \text{Na}[\text{Al}(\text{OH})_4]$  ;  $\text{Y} = \text{B}_3\text{N}_2$
- (D) None of the above



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