



CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

PRACTICE SET 07

Paper 1 Physics Chemistry

1. The term deciormal solution stands for

A. 1 N

B. $0.4N$

C. $0.5N$

D. $0.1N$

Answer: D

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2. Match List I (Equations) with List II (Type of processes) and select the correct option.

List I (Equations)	List II (Type of processes)
A. $K_p > Q$	1. Non-spontaneous
B. $\Delta G^\circ < RT \ln Q$	2. Equilibrium
C. $K_p = Q$	3. Spontaneous and endothermic
D. $T > \frac{\Delta H}{\Delta S}$	4. Spontaneous

A. $A - 1, B - 2, C - 3, D - 4$

B. $A - 3, B - 4, C - 2, D - 1$

C. $A - 4, B - 1, C - 2, D - 3$

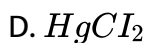
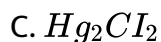
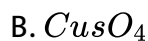
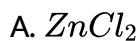
D. $A - 2, B - 1, C - 4, D - 3$

Answer: C



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3. The reference calomel electrode is made from which of the following ?

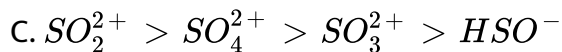
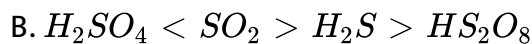
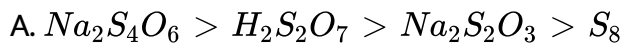


Answer: C



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4. Which of the following have been arranged in the decreasing order of oxidation number of sulphur ?



Answer: D



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5. Pencillin was first discovered by

A. A. Fleming

B. Waks man

C. Salk

D. Louis pasteur

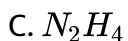
Answer: A





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6. Among the following the oxidation state of N is lowest in



Answer: A



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7. A black powder when heated with Conc. HCl gives a greenish yellow gas. The gas acts as an oxidising and bleaching agent. When it is passed over slaked lime, a white powder is formed which is a ready source of gas. The black powder and white powder respectively are

A. $KClO_3$ and $NaClO_3$

B. MnO_2 and $Ca(OCl)_2$

C. MnO_2 and $KClO_3$

D. $MnCl_4$ and $COCl_2$

Answer: B



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8. Which of the following has maximum number of unpaired electrons ?

A. Fe^{2+}

B. Cr^{2+}

C. Fe^{3+}

D. Co^{2+}

Answer: C



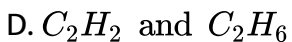
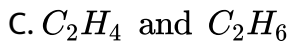
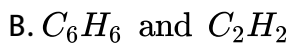
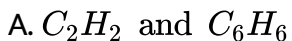


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9. Two organic compound A and B both containing only carbon and hydrogen, on quantities analysis gave the same percentage composition by weight:

$$C = (12/13) \times 100\%, H = (1/13) \times 100\%$$

A decolourises bromine water but B does not. A and B respectively are

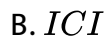


Answer: A



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10. T-shaped interhalogen compounds is



Answer: A



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11. If α is the degree of dissociation of na_2SO_4 the vant of Hoff's factor

(i) used for calculating the molecular mass is-

A. $1 + 2\alpha$

B. $1 - 2\alpha$

C. $1 - \alpha$

D. $1 + \alpha$

Answer: A



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12. Heat change when one a llotropic form is changed into another is called

- A. heat of formation
- B. heat of transition
- C. heat of transformation
- D. None of these

Answer: B



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13. Ortho and para hydrogen have :

- A. identical chemical properties but different physical properties
- B. identical physical and chemical properties
- C. identical physical properties but different chemical properties
- D. different physical and chemical properties

Answer: A

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14. For first order reaction, fraction of collisions with proper orientation of colliding molecules is 1×10^{-2} , collision frequency is 2×10^4 and fraction of successive collisions is 0.5×10^3 , then the rate constant for the reaction is

- A. 25×10^{-4} per sec
- B. 1×10^5 per sec
- C. $1 \times 10^9 \text{ mol dm}^3 / \text{s}$

D. $1 \times 10^5 \text{ mol dm}^3 / \text{s}$

Answer: B

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15. Property of the alkaline earth metals that increases with their atomic number is

- A. electronegativity
- B. solubility of their hydroxides in water
- C. solubility of their sulphates in water
- D. ionisation energy

Answer: B

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16. Which of the following metal is leached by Cyanide process

A. Na

B. Cu

C. Al

D. Ag

Answer: D



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17. P_2O_5 is heated with water to give

A. hypophosphorous acid

B. phosphorous acid

C. hypophosphoric acid

D. ortho-phosphoric acid

Answer: D



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18. The pairs of elements [Zr,Hf], [Nb,Tb] [Mo, W] and [Tc, Re] are called

- A. actinids
- B. isotopes
- C. lanthanides
- D. chamilal twins

Answer: D



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19. Which one of the following is an example of homogeneous catalysis

?

- A. Manufacture of sulphuric acid by contact process
- B. Manufacture of ammonia by Haber's process
- C. Hydrolysis of sucrose in the presence of dilute hydrochloric acid
- D. Hydrogenation of oil

Answer: C

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20. Propyne is treated with aqueous H_2SO_4 in the presence of $HgSO_4$. The product formed is

- A. 1-propanol
- B. 2-propanol
- C. propanal
- D. propanone

Answer: D

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21. 10^{21} molecules are removed from 200 mg of CO_2 .

The moles of CO_2 left are:

A. 2.88×10^{-3}

B. 28.8×10^{-3}

C. 28.8×10^{-3}

D. 28.8×10^3

Answer: A

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22. Standard enthalpy of formation is not zero for

A. C(graphite)

B. $O_3(g)$

C. $I_2(g)$

D. $Br_2(l)$

Answer:



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23. Resistance of a conductivity cell filled with a solution of an electrolyte of concentration 0.1 M is 100Ω . The conductivity of this solution is 1.29 Sm^{-1} . Resistance of the same cell when filled with 0.02M of the same solution is 520Ω . the molar conductivity of 0.02M solution of the electrolyte will be:

A. $124 \times 10^{-4} \text{ Sm}^2 / \text{mol}$

B. $1240 \times 10^{-4} \text{ Sm}^2 / \text{mol}$

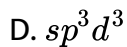
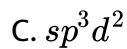
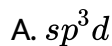
C. $1.24 \times 10^{-4} \text{Sm}^2 / \text{mol}$

D. $12.4 \times 10^{-4} \text{Sm}^2 / \text{mol}$

Answer: D

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24. The hybridisation present in IF_3 is



Answer: A

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25. In the equation of state of an ideal gas $PV = nRT$, the value of universal gas constant would depend only on :

- A. the nature of the gas
- B. the pressure of the gas
- C. the units of the measurement
- D. None of the above

Answer: C



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26. Oxygen differs from other member of irts family due to

- A. its small atomic size
- B. its high electronegativity
- C. absence of d-orbitals
- D. All of these

Answer: D

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27. Noble gases are sparingly soluble in water due to

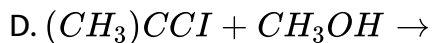
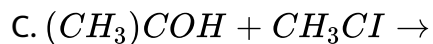
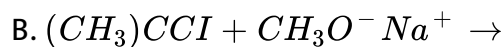
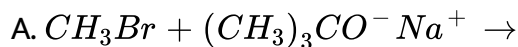
- A. dipole-dipole interactions
- B. dipole-induced dipole interactions
- C. hydrogen bonding
- D. induced dipole- instantaneous dipole interaction

Answer: B

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28. Which of the following reactions can be used for the preparation of

3° - buthyl methylether



Answer: A

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29. The use of CCl_4 as fire extinguisher depends on the fact that

A. it is inorganic compound

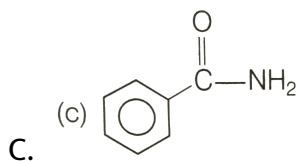
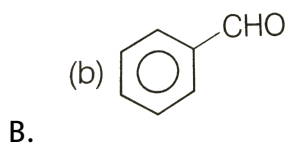
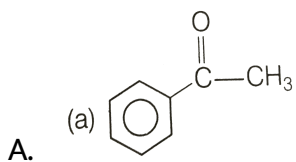
B. it is organic compounds

C. its vapour is much heavier than air and non-combustible

D. it is compound of chlorine

Answer: C

30. $CH_3COOH + PCI_5 \rightarrow A \xrightarrow[\text{Anhy}AlCl_3]{C_6H_5} B$. The product B is



D. None of these

Answer: A

31. Which one is incorrect about ozone ?

- A. O_3 is best depicted on its resonance hybrid
- B. All $O - O$ bonds in O_3 are of equal in length
- C. O_3 with KI solution produces Iodine molecule
- D. O_3 undergoes photolytic reaction to retain its structure

Answer: D

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32. When hydrolysis of Al_4C_3 occurs, which one of the following gas liberates ?

- A. C_2H_6
- B. C_2H_2
- C. SO_2
- D. CH_4

Answer: D

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33. When dimethylglyoxime is added to Ni^{2+} , which of the following statements or observations is wrong ?

- A. Red, insoluble precipitate results
- B. The above precipitate is ionic in character
- C. The above precipitate is a chelate complex
- D. Co^{2+} ions do not behave as Ni^{2+} do with dimethylglyoxime

Answer: A

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34. Ethanol shows intermolecular H-bonding. Which of the following property is affected by H-bonding ?

- A. Volatility
- B. Boiling point
- C. Solubility
- D. All of these

Answer: D

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35. When Grignard reagent (CH_3MgBr) reacts with CO_2 , which of the following is obtained ?

- A. $HCOOH$
- B. CH_3COOH

C. CH_3COCH_3

D. $HCHO$

Answer: D

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36. Ethyl amine on oxidation in the presence of $KMnO_4$ gives

A. acetaldehyde

B. ethylamine oxide

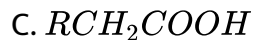
C. ethanal

D. acetamide

Answer: B

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37. Reaction of RCN with sodium and alcohol lead to the formation of



Answer: D

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38. Which of the following statements concerning glucose is incorrect ?

A. It has 4 asymmetric C-atoms

B. It is monosaccharide

C. It is optically inactive

D. It is readily soluble in water

Answer: C



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39. Polyacrylonitrile contains a linkage of

- A. amide
- B. ester
- C. alcohol
- D. carbon and carbon

Answer: D



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40. Buna-S rubber is the polymer of which type ?

- A. Addition homopolymer

- B. Addition copolymer
- C. Condensation polymer
- D. It is not a polymer

Answer: B

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41. Which is the strongest reducing agent?

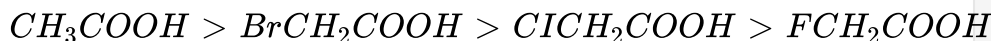
- A. HF
- B. HBr
- C. HCl
- D. HI

Answer: A

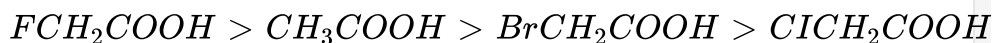
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42. Which of the following presents the correct order of the acidity in the given compounds?

A.



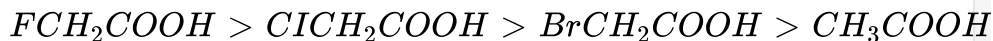
B.



C.



D.



Answer: D



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43. The correct IUPAC name of potassium cuprochloride is

- A. potassium copper (I) tetrachloride
- B. potassium tetrachloro cuprate (I)
- C. tetrachloro potassium cuprate (I)
- D. tetrachloro copper (I) potassiate

Answer: B



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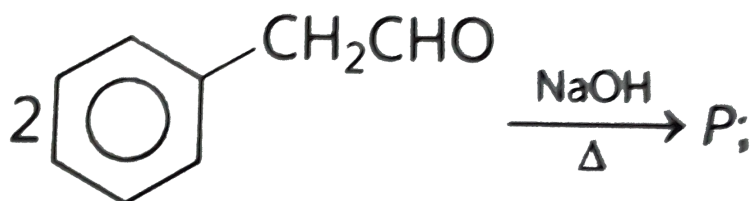
44. Phenol is obtained from cumene, cumene is

- A. divinyl benzene
- B. iso-propyl benzene
- C. O-methyl phenol
- D. P-cresol

Answer: B

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45. Complete the following reaction



A. aldehyde

B. ketone

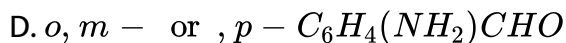
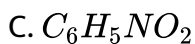
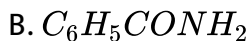
C. unsaturated alcohol

D. α, β -unsaturated carbonyl compound

Answer: D

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46. A compound A has a molecules formula C_7H_7NO . On tratement with Br_2 and KOH_4 , A gives amine B which gives, carbylamine test. B upon diazotisation and coupling with give an azo dye. A can be



Answer: B

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47. Enzymes are essential as biocatalysts. They function in

A. aqueous medium, temperature = $30 - 35^\circ C$, $pH = 7$

B. organic medium

C. aqueous medium under extreme pH conditions

D. None of the above

Answer: A

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48. Which type of solid crystals will conduct heat and electricity?

A. ionic

B. covalent

C. Molecular

D. Metallic

Answer: D

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49. Chloramphenicol is effective in the cure of

A. typhoid

B. malaria

C. cholera

D. tuberculosis

Answer: A



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50. Which of the following gas has the highest heat of combustion ?

A. Methane

B. Ethane

C. Ethene

D. Ethyne

Answer: B



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