



CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

PRACTICE SET 10

Paper 1 Physics Chemistry

1. Solid solution in which the solute is gas

A. copper dissolved in gold

B. camphor is nitrogen gas

C. solution of hydrogen in palladium

D. all of the above

Answer: C



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2. In the combustion of 2g benzene, 2.5 kcal heat was evolved. What is the heat of combustion?

A. 100 kcal

B. 97.5 kcal

C. 50 kcal

D. 40 kcal

Answer: B



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3. The specific conductance of a solution is 0.03568 ohm/cm and when placed in a cell, the conductance is 0.0268 per ohm. The cell constant is

A. 0.0751 per cm

B. 0.330 per cm

C. 0.3836 per cm

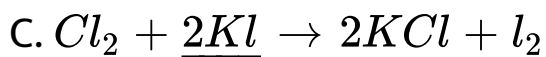
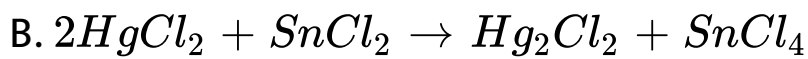
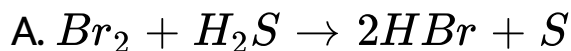
D. 1.331 per cm

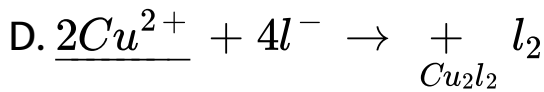
Answer: D



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4. In which of the following reactions, the underlined substance has been oxidised?





Answer: D



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5. In AgBr crystal, the ion size lies in the order $\text{Ag}^{+} < < \text{Br}^{-}$. The AgCl crystal should have the following characteristics

- A. defect less (perfect) crystal
- B. Schottky defect
- C. Frenkel defect

D. Both (b) and (c)

Answer: D



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6. Pick out the incorrect statement.

A. PH_4^+ ion is tetrahedral like the NH_4^+ ion

and is obtained when PH_3 is bonded to
proton

B. PH_4I is one of the most stable salts

containing the phosphonium ion. It is also

more stable than ammonium salts

C. PH_4I is decomposed by water to form PH_3

D. PH_3 converts silver salts in solution to silver phosphide, which subsequently reacts to give free metal

Answer: B



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7. The structure of IF_7 is

A. trigonal bipyramid

B. octahedral

C. pentagonal bipyramid

D. square pyramid

Answer: C



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8. VO_2 is an amphoteric oxide and in acidic medium it forms:

A. VO^{2+}

B. VO_2^+



Answer: A



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9. During the fusion of an organic compound with sodium metal, nitrogen of the organic compound is converted into



C. NaCN

D. NaNC

Answer: C

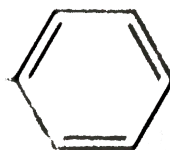
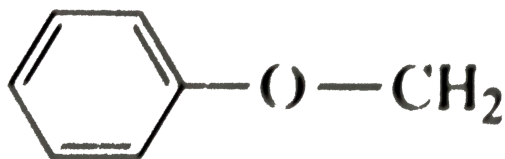


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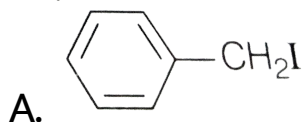
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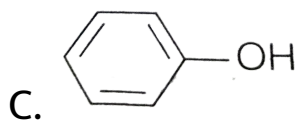
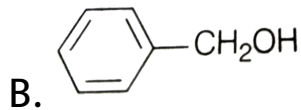
ether



when

treated with HI produces:





D. Both (a) and (c)

Answer: D

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11. When non-ideal solution was prepared by mixing 30 mL chloroform and 50 mL acetone. The volume of mixture will be

A. > 80 mL

B. $= 80mL$

C. $< 80mL$

D. $\geq 80mL$

Answer: B



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12. Which of the following process is used for the manufacture of H_2 ?

A. Hoopé's process

B. Le-Blanc process

C. Lane's process

D. Carter's process

Answer: C



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13. Which one of the following is true?

A. NaOH is used in the concentration of bauxite ore

B. NaOH is a primary standard in volumetric analysis

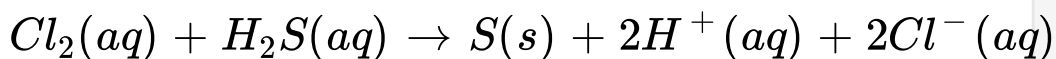
C. Manganous hydroxide is soluble in excess of
NaOH solution

D. NaOH solution does not react with Cl_2

Answer: A

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14. Consider the reaction,

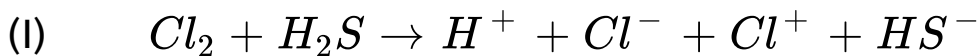


The rate equation for this reaction is,

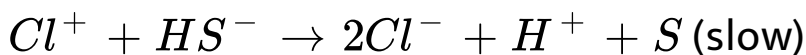
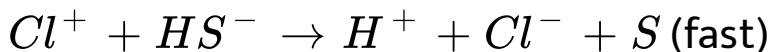
$$\text{Rate} = k[Cl_2][H_2S]$$

Which of these mechanisms is / are consistent with

this rate equation ?



(slow)



A. Only I

B. Only II

C. Both I and II

D. Neither I nor II

Answer: A



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15. A metal has a fcc lattice. The edge length of the unit cell is 404 pm, the density of the metal is 2.72 g cm^{-3} . The molar mass of the metal is (N_A , Avogadro's constant = $6.02 \times 10^{23} \text{ mol}^{-1}$)

A. 27g/m

B. 20g/m

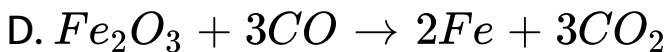
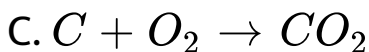
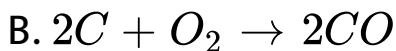
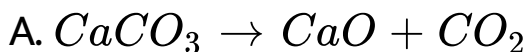
C. 40g/m

D. 30g/m

Answer: A



16. Which of the following reactions taking place in the blast furnace during extraction of iron is endothermic ?



Answer: A



17. Which one of the following arrangements of molecules is correct on the basis of their dipole moments?



Answer: A



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18. Across the lanthanide series , the basicity of the lanthanide hydroxides:

A. increases

B. decreases

C. first increases, then decreases

D. first decreases, then increases

Answer: B



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19. Which order is correct for the decreasing reactivity to ring monobromination of the following compounds



A. I > II > III > IV

B. I > III > II > IV

C. II > III > IV > I

D. III > I > II > IV

Answer: B



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20. The compound that yields only ketonic compounds on ozonolysis is

- A. but-2-ene
- B. pent-2-ene
- C. 2,3-dimethylbut-2-ene
- D. 2-methylbut-2-ene

Answer: C



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21. Adsorption of gases on solid surface is exothermic since

- A. enthalpy is positive
- B. entropy is negative
- C. entropy increases
- D. free energy increases

Answer: B



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22. A monatomic ideal gas undergoes a process in which the ratio of p to V at any instant is constant and equals to 1. what is the molar heat capacity of the gas?

A. $\frac{4R}{2}$

B. $\frac{3R}{2}$

C. $\frac{5R}{2}$

D. 0

Answer: A



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23. For 14 g of CO, the wrong statement is

A. it occupies 2,24 L at NTP

B. it corresponds to $\frac{1}{2}$ mole of CO

C. it corresponds to same mole of CO and
nitrogen gas

D. it corresponds to 3.01×10^{23} molecules of
CO

Answer: D



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24. Which of the following statement is incorrect?

A. Activation energy for the forward reaction equals activation energy for the reverse reaction

B. For a reversible reaction, an increase in temperature increases the reaction rate for both the forward and the backward reaction

C. Larger, the initial reactant concentration for a second order reaction, the shorter is its half-life

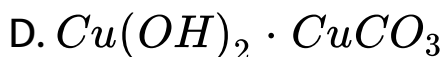
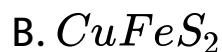
D. When Δt is infinitesimally small, the average rate equals the instantaneous state

Answer: A



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25. Formula of ruby copper is



Answer: C



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26. Sulphuric acid behaves as

- A. a strong acid
- B. an oxidising agent
- C. a dehydrating agent
- D. all of these

Answer: D



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27. Pick out the incorrect statement for XeF_6

- A. XeF_6 is hydrolysed partially to form $XeOF_4$
- B. It reacts with SiO_2 to form $XeOF_4$
- C. On complete hydrolysis, it forms XeO_3
- D. It acts as F^- acceptor when treated with alkali metal fluoride, but cannot act as F^- donor to form complexes.

Answer: D



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28. The general electronic configuration of lanthanide is

A. $(n - 2)f^{1-14}(n - 1)s^2p^6d^{0-1}ns^2$

B. $(n - 2)f^{0-14}(n - 1)d^{0-1}ns^2$

C. $((n - 2)f^{0-14}(n - 1)d^{10}ns^2$

D. $(n - 2)d^{0-1}(n - 1)f^{0-14}ns^2$

Answer: A



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29. An alkyl halide reacts with sodium in the presence of ether to yield

A. parent alkane

B. an alkene

C. an alkyne

D. higher alkane

Answer: D



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30. Acetaldehyde on treatment with dilute alkali and subsequent heating gives

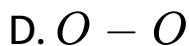
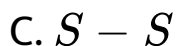
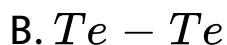
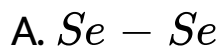
- A. crotonic acid
- B. acrylic acid
- C. crotonaldehyde
- D. crotonylene

Answer: C



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31. Which of the following bonds has the highest energy?

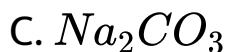
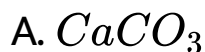


Answer: C



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32. A compound X on heating gives a colourless gas. This residue is dissolved in water to obtain Y. excess CO_2 is bubbled through aqueous solution of Y, Z is formed. Z on gentle heating give back X.
the X is



Answer: A



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33. The coordination number of a central ion may be obtained from

A. the number of coordinate bonds formed with surrounding atoms

B. the number of ionic bonds formed with the surrounding ions

C. the number of ions of opposite charge immediately surrounding the specific ion

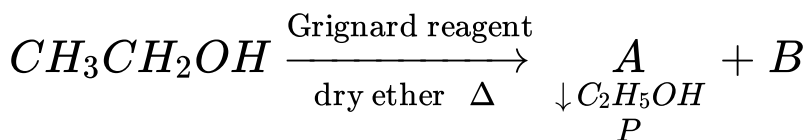
D. none of the above

Answer: A



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34. Identify product P in the following reaction sequence.



A. An alcohol

B. An ether

C. An acid

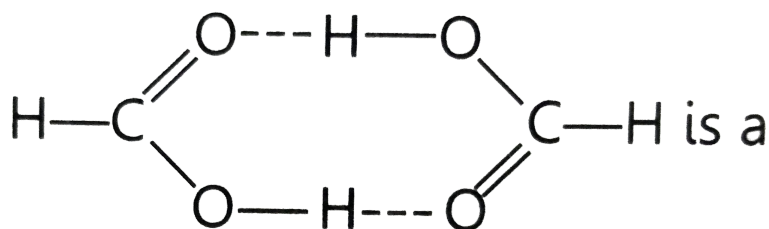
D. An ester

Answer: A



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35. The monomer of



A. good reducing agent

B. dehydrating agent

C. monobasic acid

D. less acidic than CH_3COOH

Answer: C



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36. $CH_3CONH_2 \xrightarrow{?} CH_3CN \xrightarrow{\text{Reduction}} \text{ amine. In$

the first step oxide of this non-metal taken is

A. P

B. N

C. S

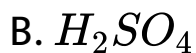
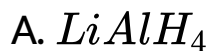
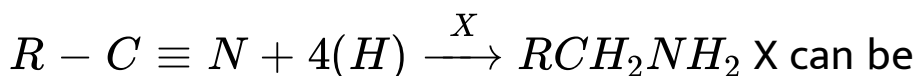
D. Cl

Answer: A



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37. In the reaction,



Answer: A



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38. Antibodies are

- A. carbohydrates
- B. proteins
- C. lipids
- D. enzymes

Answer: B



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39. The empirical formulae of monomer and polymer are same in case of

- A. addition polymers
- B. condensation polymers
- C. both (a) and (b)
- D. none of these

Answer: A



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40. Which of the following is not the correct matching of medicine and the disease it cures/activity?

- A. Aspirin ___ pain reliever
- B. Chloramphenicol ___ typhoid
- C. 0.2 per cent phenol ___ disinfectant
- D. 1 per cent pheno ___ disinfectant

Answer: C



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41. How many electron pairs are present in valence shell of oxygen in water molecule ?

A. 4

B. 1

C. 2

D. 3

Answer: A



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42. Gas equation $PV = nRT$ is obeyed by

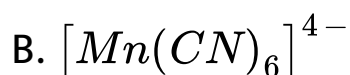
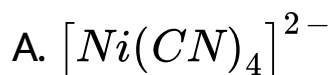
- A. adiabatic process
- B. isothermal process
- C. both (a) and (b)
- D. none of these

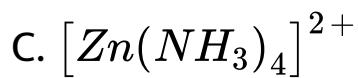
Answer: B



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43. The paramagnetic ion among the following is





D. All of these

Answer: B



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44. Which of the following will not be soluble in sodium hydrogen carbonate?

A. 2,4,6-trinitrophenol

B. benzoic acid

C. o-nitrophenol

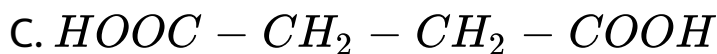
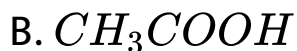
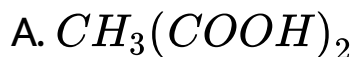
D. benzene sulphonic acid

Answer: C



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45. Which of the following acids gives CO_2 on heating?



Answer: A



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46. To replace $-N_2^+ Cl$ group by -F group, benzene diazonium chloride is treated with



Answer: D



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47. Which one of the following is a peptide hormone ?

A. Glucagon

B. Testosterone

C. Thyroxine

D.

Answer: B



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48. Which is a false statement?

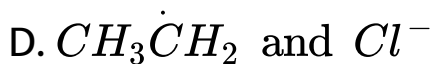
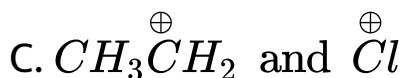
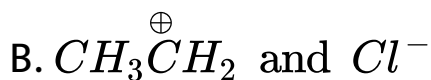
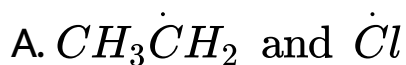
- A. Neoprene is a biopolymer
- B. Dacron is a polyester
- C. Natural rubber is cis-polyisoprene
- D. Chloroethene is the monomer of PVC

Answer: A



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49. CH_3CH_2Cl undergoes homolytic fission, produces



Answer: A



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50. Which compound cannot be formed from Wurtz

A. Propane

B. Butane

C. Ethane

D. methane

Answer: D



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