

MODEL QUESTION PAPER

CHEMISTRY

Time: 1.30 hours

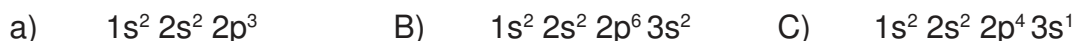
Total score : 40 Marks

Instructions

- * First 15 minutes is cool off time
- * Read all questions carefully
- * questions with scores 1,2,3 & 4 are categorised separately
- * Five questions are given in each category. Answer any 4 questions from each category.
- * Answer each questions by keeping time.

Answer any four questions from 1 to 5. 1 score each (4x1=4)

1. Find the wrong electronic configurations from the following and correct them



2. Find the number of water molecules in 18 g of water.

3. The method used to separate magnetic impurities from tinstore.....

4. Which of the following is an oxidation reaction?



5. PVC is a polymer used the preparation of pipes. What is the name of its monomer?

Answer any four questions from 6 to 10 2 score each (4x2=8)

6. Names of some alloy steels are given in the box.

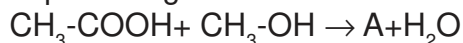
Alnico	Stainless Steel	Nichrom
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7. Find the number of mole atoms in the following samples and arrange them in the increasing order of number of atoms.

(hint : atomic mass : H = 1, Ca = 40)



8. See the question given

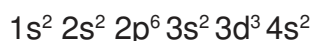


- a) Write the formula of A and complete the equation
b) To which category of compounds does A belong?

9. The structure of a compound is $\text{CH}_3\text{-CH=CH}_2\text{-CH}_3$

- a) To which category of hydrocarbon does this compounds belong?
(Alkane, Alkene, Alkyne)
- b) Give the IUPAC name of the compound

10. The subshell electrone configuration of an element is



- a) What is the atomic number of this elements?
- b) To which group do this element belong?

Answer any four questions from 11 to 15 3 score each

(4x3=12)

11. Metals Mg, Zn, Fe and Cu of same size are taken in foru test tubes. Same amount of dil: HCl is added to them.

- a) Which metal reacts vigorously with dilute acid?
- b) Which gas is formed by the reaction of metals with dil : HCl acid?
- c) Which of these metals can displace Zn from $ZnSO_4$ solution?

12. Complete the table. (Hint : atomic mass : He = 4, N = 14, O = 16)

Substance	Molecular mass	Amount taken (g)	Volume L	Number
N_2	28	(a)	22.4	(b)
Cl_2	71	(c)	(d)	$10 \times 6.00 \times 10^{23}$
O_2	(e)	160	(f)	$5 \times 6.022 \times 10^{23}$

13. a) Write examples for a pair of position isomers from the following compounds.

- $CH_3-O-CH_2-CH_3$
- CH_3-O-CH_3
- $CH_3-CH_2-CH_2-OH$
- $CH_3-\underset{\substack{| \\ OH}}{CH}-CH_3$

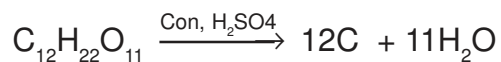
- b) Write the IUPAC name of the compound 4.
- c) Select a functional isomer of this compound from the give.

14. Some metals and solution are given in the box

$MgSO_4$ solution	$AgNO_3$ solution	$CuSO_4$ solution
KCl solution	Pb rod	Mg rod Cu rod

- a) Select from the box the materials needed to construct a galvanic cell.
- b) Which is the anode of the cell constructed?
- c) Write the equation of the reaction taking place at the cathod of the cell.

15. A few drops of Conc. H_2SO_4 are added to a little sugar crystals taken in a watch glass
- What will be the observation?
 - Analyse the equation and explain the reason



- Which property of sulphuric acid is exhibited here?

Answer any four questions from 16 to 20 4 score each

(4x3=16)

16. The electrolysis of molten NaCl is done in an electrolytic cell.
- Write is the product obtained at the cathod?
 - Write the chemical equation of the reaction taking place at the cathode.
 - If an equation solution of NaCl is electrolysed insted of molten NaCl, what products will be obtained at the anode and cathode?

17. Match Suitably

	Reactants	Products	Name of the Reaction
1.	$\text{CH}_3\text{-CH}_3\text{-Cl}_2$	$\text{CH}_3\text{=CH}_2\text{+CH}_4$	Addition Reaction
2.	$2\text{CH}_3\text{-CH}_3\text{+7O}_2$	$\text{CH}_3\text{-CH}_3$	Substitution Reaction
3.	$\text{CH}_2\text{=CH}_2\text{+H}_2$	$4\text{CO}_2\text{+ 6H}_2\text{O}$	Thermal cracking
4.	$\text{CH}_3\text{-CH}_2\text{-CH}_3$	$\text{CH}_3\text{-CH}_2\text{-Cl+HCl}$	Combustion

18. A glass rod dipped in con HCl is shown in a gas jar filled with ammonia.
- Write the observation
 - Sulphuric acid is not used to dry the ammonia gas. Why?
 - A System at equilibrium is given.

$$\text{N}_{2(g)} + 3\text{H}_{2(g)} \rightleftharpoons 2\text{NH}_{3(g)} + \text{heat}$$
19. The main chain of hydrocarbon is given
 C - C - C - C
- Complete the structurle formula.
 - Write the IUPAC name of this compound.
 - Write the IUPAC name of the compound obtained by adding a-COOH group in the first carbon atom of this compound.
20. Analyse the given subshell electronic configuration and answer the question
- A- $1s^2 2s^2 2p^6$
 B- $1s^2 2s^2 2p^6 3s^2 3p^4$
 C- $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^2$
 D- $1s^2 2s^2 2p^6 3s^2$
- Which among these elements shows -2 oxidation number?
 - Which is the element that does not take part in chemical reaction?
 - Which element shows different oxidation states?
 - Which among the given elements shows the lowest ionisation energy?