

KANNUR JILLA PANCHAYATH
DIET KANNUR
SSLC MUKULAM EXAM -FEB 2020
CHEMISTRY

Time:1 1/2 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 question 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
a) $1s^2 2s^2 2p^3$, b) $1s^2 2s^2 2p^6 3s^2$, c) $1s^2 2s^2 2p^4 3s^1$
2. Find the number of water molecules in 18 g of water.
3. The method used to separate magnetic impurities from tinstone is
(Levigation, Froth floatation, Magnetic separation, Leaching)
4. Which of the following is an oxidation reaction?
 $Zn \rightarrow Zn^{2+} + 2e$
 $Zn^{2+} + 2e \rightarrow Zn$
5. PVC is a polymer used for the preparation of pipes. What is the name of its monomer?

Answer any four questions from 6 to 10. 2 scores each

(4X2=8)

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

Alnico	Stainless steel	Nichrome
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- (a) What is the common component in all these steels ?
- (b) Which is the steel is used to make permanent magnets ?
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)
a) 10 g Hydrogen b) 100 g Calcium
8. See the equation given
 $CH_3-COOH + CH_3-OH \rightarrow A + H_2O$
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 $CH_3-C \equiv C-CH_3$
(a) To which category of hydrocarbon does this compound belong ?
(Alkane, Alkene, Alkyne,)
(b) Give the IUPAC name of this compound
10. The subshell electronic configuration of an element is
 $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4s^2$
a) What is the atomic number of this element?
b) To which group does this element belong?

Answer any four questions from 11 to 15. 3 scores each

(4X3=12)

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

- Which metal reacts vigorously with dilute acid?
- Which gas is formed by the reaction of metals with dil: HCl acid?
- Which of these metals can displace Zn from ZnSO₄ solution?

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

Substance	Molecular mass g	Amount taken(g) g	volume L	Number of molecules
N ₂	28	(a)	22.4	(b)
Cl ₂	71	(c)	(d)	10 x 6.022x10 ²³
O ₂	(e)	160	(f)	5 x 6.022x10 ²³

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

- CH₃-O-CH₂-CH₃
- CH₃-O-CH₃
- CH₃-CH₂-CH₂-OH
- CH₃-CH-CH₃



- Write the IUPAC name of compound 4.
- Select a functional isomer of this compound from the given.

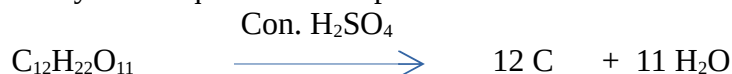
14. Some metals and solutions are given in the box

MgSO₄ solution , AgNO₃ solution, CuSO₄ solution,
KCl solution, Pb rod, Mg rod, Cu rod

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

15. A few drops of Conc. H₂SO₄ are added to a little sugar crystals taken in a watch glass

- What will be the observation?
- Analyse the equation and explain the reason



c) Which property of sulphuric acid is exhibited here?

Answer any four questions from 16 to 20 . 4 scores each

(4*4=16)

16. The electrolysis of molten NaCl is done in an electrolytic cell.

- Which is the product obtained at the cathode?
- Write the chemical equation of the reaction taking place at the cathode
- If an aqueous solution of NaCl is electrolysed instead of molten NaCl, what products will be obtained at the anode and cathode?

17. Match suitably

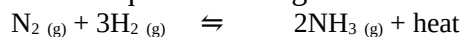
Reactants	Products	Name of the reaction
1. CH ₃ -CH ₃ + Cl ₂	CH ₂ =CH ₂ + CH ₄	Addition reaction
2. 2CH ₃ -CH ₃ + 7O ₂	CH ₃ -CH ₃	Substitution reaction
3. CH ₂ =CH ₂ + H ₂	4CO ₂ + 6H ₂ O	Thermal cracking
4. CH ₃ -CH ₂ -CH ₃	CH ₃ -CH ₂ -Cl + HCl	Combustion

18. A glass rod dipped in con HCl is shown in a gas jar filled with ammonia

a) Write the observation

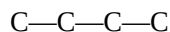
b) Sulphuric acid is not used to dry the ammonia gas. Why?

c) A system at equilibrium is given.



Suggest any two methods to increase the amount of ammonia produced.

19. The main chain of a hydrocarbon is given.

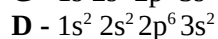
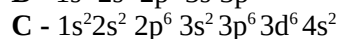
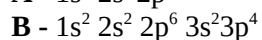
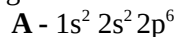


a) Complete the structural formula.

b) Write the IUPAC name of this compound.

c) 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. Which among these elements shows -2 oxidation number?

b. Which is the element that does not take part in chemical reaction ?

c. Which element shows different oxidation states?

d. Which among the given elements shows the lowest ionisation energy?