TIRUVANNAMALAI DT - MHS GIRITHARAN PET CHEMISTRY FULL PORTION TEST

MARKS: 75

STANDARD X-SCIENCE PART I

TIME: 3hrs

| Answer all the questions | (12 × 1=12) | | |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--|--|
| 1. Which of the following has the smallest mass? | | | |
| a) 6.023×10^{23} atoms of He b) 1 atom of He c) 2 § | g of He d) 1 mole atoms of He | | |
| 2. In the nucleus of ${}_{7}\text{Cl}^{35}$, there are | | | |
| a) 17 protons and 35 neutrons b) 17 protons and | 17 neutrons | | |
| c) 35 protons and 35 electrons d) 17 protons and | 17 electrons | | |
| 3. The number of periods and groups in the periodic table are | | | |
| a) 6 16 b) 7,17 c) 8,18 d) 7,18 | _ | | |
| 4 is an important metal to form amalgam. | | | |
| a) Ag b) Hg c) Mg d) Al | | | |
| 5. Which of the following is the universal solvent? | | | |
| a) Acetone b) Benzene c Water d) Alcohol | | | |
| 6. Solubility of NaCl in 100 m water is 36g. If 35g of salt is dissolved in 100 ml of water how much | | | |
| more salt is required for saturation | | | |
| a) 1g b) 11g c) 16g d) 20g | | | |
| 7. The chemical equation Na ₂ SO ₄ (aq) + BaCl ₂ (aq) \rightarrow BaSO ₄ (s) \downarrow | + 2NaCl(aq) represents which of the | | |
| following types of reaction? | | | |
| a) Neutralisation b) Combustion c) Precipitati | on d) Single displacement | | |
| 8 Chemical volcano is an example for type of a)Combination b) Decomposition c) Combustion | reaction. | | |
| a)Combination b) Decomposition c) Combustio | n d) Double displacement | | |
| 9. The secondary suffix used in IUPAC nomenclature of an aldehy | de is | | |
| a) $-$ ol b) $-$ oic acid c) al d) $-$ one | | | |
| 10. In IUPAC name, the carbon skeleton of a compound is represe | nted by | | |
| a) root word b) prefix c) suffix) | | | |
| 11. TFM in soaps represents content in soap | | | |
| 11. TFM in soaps represents content in soap a) mineral b) vitamin c) fatty acid d) carbohydrate | | | |
| 12. When pressure is increased at constant temperature the solubility of gases in liquid | | | |
| a) No change b) increases c) decreases d) | no reaction | | |
| PART-II | | | |
| Answer any seven questions. Questions No.22 is compulsory. | $(7 \times 2 = 14)$ | | |
| 13. Define: Atomicity | | | |
| 14. Calcium carbonate is decomposed on heating in the following | | | |
| How many moles of CO_2 are there in this equation? | | | |
| 15. Match the following | | | |
| 1. Galvanisation - Noble gas elements | | | |
| 2. Calcination - Coating with Zn | | | |
| 3. Redox reaction - Silver-tin amalgam | | | |
| 4. Dental filling - Alumino thermic process | | | |
| - Heating in the absence of air | | | |
| 16. What is rust? Give the equation for formation of rust. | | | |
| 17. True or False: (If false give the correct statement) | | | |
| a) All ores are minerals; but all mine als cannot be called as ores | | | |
| b) On dipping a pH paper in a solution, it turns into yellow. Then the solution is basic. | | | |
| 18. Define Volume perc ntage | | | |
| 19. Assertion : Alkanes are saturated hydrocarbons. | | | |
| J. | VANITHA MUTHUKUMAR. BT ASST (PHYSICS) | | |

Reason: Hydrocarbons consist of covalent bonds.

- i) A and R are correct, R explains the A.
- ii) A is correct, R is wrong.
- iii) A is wrong, R is correct.
- iv) A and R are correct, R doesn't explains A.

20. Match the following

| Functional group -OH | 7.1 | Benzene |
|-------------------------|-----|--------------------|
| Heterocyclic | - 1 | Potassium stearate |
| Unsaturated | - | Alcohol |
| Soap | - | Furan |
| | Ē | Ethene |

- 21. Name the acid that renders aluminium passive. Why?
- 22. Calculate the pH of 1×10^{-9} molar solution of NaOH.

PART-III

Answer any seven ques ions. Questions No.32 is compulsory.

 $(7 \times 4 = 28)$

- 23. Give the salient features of "Modern atomic theory".
- 24. The electronic configuration of metal A is 2,8,18,1. The metal A when exposed to air and moisture forms B a green layered compound. A with con. H2 SO4 forms C and D along with water. D is a gaseous compound. Find A,B,C and D.
- 25. Name the acid that renders aluminium passive. Why?
- 26. Write notes on various factors affecting solubility.
- 27 Classify the following substances into de iquescent, hygroscopic.

(Conc. Sulphuric acid, Copper sulphate penta hydrate, Silica gel, Calcium chloride, and Gypsum salt)

- 28 Differentiate reversible and irreversible reactions
- 29 a) Explain the types of double displacement reactions with examples.
 - b) Can a nickel spatula be used to stir copper sulphate solution? Justify your answer.
- 30. Classify the following compounds based on the pattern of carbon chain and give their structural formula: (i) Propane (ii) Benzene (iii) Cyclobutane (iv) Furan
- 31 Differentiate soaps and detergents.
- 32. Calculate the % of each element in calcium carbonate (Atomic mass: C-12, O-16, Ca -40)

PART-IV

Answer all the questions

 $(3 \times 7 = 21)$

- 33.a) Derive the relationship between Relative molecular mass and Vapour density (OR)
 - b) Explain smelting process.
- 34.a) What happens when MgSO4. 7H2 O is heated? Write the appropriate equation (OR)
 - b) How does pH play an important role in everyday life?
- 35.a) How is ethanol manufactured from sugarcane?

(OR)

- b) An organic compound 'A' is widely used as a preservative and has the molecular formula CH4O2. This compound reacts with ethanol to form a sweet smelling compound 'B'.
 - (i) Identify the compound 'A'.
 - (ii) Write the chemical equation for its reaction with ethanol to form compound 'B'.
- (iii) Name the process