Q. P. Code: 34249

2 ½ Hours

Total Marks: 75

1. Attempt **all** questions.
2. **All questions** carry **equal** marks.
3. Draw **neat labeled diagrams** wherever necessary.
4. Use of **log tables** and **non-programmable calculator** is **allowed**.
5. For **Q 2, Q 3 and Q 4** attempt A and B **OR** C and D.

Q 1 Attempt Multiple Choice Questions (Any fifteen) 15

1. Ratio of weight of the largest particle to weight of the sample is called_____ ratio.
   a) Size to weight b) Weight to weight
   c) Volume to volume d) Volume to weight
2. Reduced distillation method is also known as _____ distillation.
   a) Fractional b) Azeotropic c) Vacuum d) None of these
3. The total sample obtained by mixing all the increments is known as __ sample.
   a) Gross b) Minor c) Major d) Additive
4. Full form of RCF is _____.
   a) Relative centripetal force b) Relative centrifugal force
   c) Relative centrifugal factor d) Revolutionary centrifugal force
5. Fraction of distribution ratio of two solutes is called_____ factor.
   a) Sedimentation b) Separation c) Solubilization d) Emulsification
6. The vapor pressure of a liquid is measure of its _____.
   a) Sublimation b) Hydrolysis c) Hydration d) Volatility
7. Sample thief is used for sampling of _____.
   a) Liquids b) Gases c) solids d) Both a and b
8. What is cocaine?
   a) Glycosides b) Esters c) Amide d) Salts of organic acid
9. Which of these is a fat soluble vitamin?
   a) Vitamin A b) Vitamin B_1 c) Vitamin C d) Vitamin B_2
10. Ozonolysis of terpernoids leads to generation of _____
    a) Aldehydes b) Alcohols c) Acids d) Alkanes
11. How are HPTLC plates visualized?
    a) using a microscope b) using a colorimeter
    c) using a UV transilluminator d) using dyes
12. Which of the following is a mobile phase in GC?
    a) Hydrogen b) oxygen c) helium d) carbon dioxide
13. Which of the following is a terpenoid?
    a) cholesterol b) retinol c) adrenaline d) Camphor
14. Which of the following is a primary metabolite?
    a) Carbohydrates b) Sterols c) Tannins d) Hormones

15. Which of the following is/are colloids?
    a) Milk b) Foam c) Gel d) All of these
16. Micelle formation will require _____.
    a) organic liquid b) water c) surfactant d) all of these
17. The nanoscale structure synthesis from assembly of atoms or molecules is known as _____ approach.
    a) Bottom-up b) Top-Down c) Etching process d) all of these
18. _____ refers to the collective oscillation of conduction electrons upon excitation with incident light of a specific wavelength.
    a) Surface Plasmon Resonance b) Fermi level
    c) Electrical conductivity d) Glow discharge
19. The monomeric unit of Nylon 6 is _____.
    a) Caprolactum b) Hexamethylenediamine
    c) Adipic acid d) Butyric acid
20. Polycarbonate is used in _____.
    a) Helmets b) Lens c) Bullet Proof Glass d) All of these

Q. 2 A (i) Discuss the general procedure for sampling of gases. **04**

(ii) Explain the principle of liquid- liquid extraction. **04**

Q. 2 B Distillation is a separation method based on volatile nature of molecules. Justify. **07**

OR

Q. 2 C (i) Explain sampling of heterogeneous liquid. **04**

(ii) Discuss the theory of centrifugation. **04**

Q. 2 D Define distribution ratio. Explain the extraction of metals by chelation with the help of examples. **07**

Q. 3 A What are Phenolics? How are they classified? **08**

Q. 3 B What is the principle of gas chromatography? **07**

OR

Q. 3 C Explain the classification of natural products on the basis of bio-synthesis **08**

Q. 3 D What are essential oil? What are their sources? **07**

Q. P. Code: 34249

Q. 4 A Describe any two physical methods for synthesis of Nanomaterials. **08**

Q. 4 B Explain characterization of Nanomaterials using Scanning Tunnelling Microscope. **07**

OR

Q. 4 C Write a note on preparation, properties and uses of the following polymers: **08**

(i) Polyethene

(ii) Polyvinyl chloride.

Q. 4 D Give classification of polymers. **07**

Q 5 Write Short notes on **any three** of the following **15**

a. Applications of nanotechnology.

b. Polyhydroxyalkanoates (PHA).

c. Non-random sampling.

d. Filtration.

e. Applications of HPTLC.
