Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – August 2020
VI Semester

Class : III UG **Time : 2 Hours**
Major : Chemistry **Max. Marks : 50**

15BCHC25 Applied Chemistry-II

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Which of the following is a thermoplastic?
   a. Nylon b. Bakelite
   c. Adhesive d. Rubber

2. The low density poly ethylene is
   a. linear b. branched
   c. possessing low melting temperature d. unstable

3. Methyl orange is a
   a. basic azo dye b. bisazo dye
   c. acidic azo dye d. mordant azo dye

4. What type of chromophore is present in Malachite green?
   a. Quinonoid group b. Benzenoid group
   c. $-NMe_2$ d. Triphenyl

5. The word 'drug' is derived from a
   a. Greek word drogue b. American word drogue
   c. French word drogue d. Latin word drogue

6. Which one of the following vitamins contain cobalt?
   a. Vitamin B_1 b. Vitamin B_6
   c. Vitamin B_2 d. Vitamin B_{12}

7. Which of the below adhesive is not attacked by water?
   a. Starch glue b. Albumin glue
   c. Vegetable glue d. Rubber glue

8. Which of the below glue can be made plastic again by re-heating?
   a. Thermosetting b. Rubber glue
   c. Animal glue d. Thermoplastic

9. Addition of chromium to steel _____tensile strength.
   a. increases b. decreases
   c. does not affect d. none of the above

10. The composition of nickel bronze is
   a. Cu – 90% b. Ni – 90%
   c. Sn – 90% d. Zn – 90%

Part B 3 x 6 = 18

Answer any Three questions

Each answer should not exceed 400 words or two pages

11. Describe with neat sketch, the injection moulding process.

12. Analyse the three types of stereoregular polymers with suitable examples.

13. Briefly discuss Mordant dyeing with applications.

14. How is methyl orange prepared? Give its uses.

15. Define and distinguish between disinfectants and antiseptics.

16. What are vitamins? Explain with examples fat soluble and water soluble vitamins.

17. How are animal and protein glue prepared?

18. Write a short account on acrylates as an adhesive with uses.

19. Explain the purpose or need for making steel with examples.

20. Outline the manufacture of steel by electric arc furnace method.

Part C 2 x 11 = 22

Answer any Two questions

Each answer should not exceed 800 words or four pages

21. i. Summarize the process of anionic polymerization with mechanism. Give examples.

    ii. Assess the preparation, properties and uses of nylon 66.

22. i. Can DPPH be used as an initiator? Expand the mechanism of free radical polymerization.
    ii. Discuss compression with a neat sketch.

23. How will you effect the synthesis of the following dyes i. Naphthol Yellow S
    ii. Naphthol Green Y and iii. Rhodamine B.

24. i. Illustrate the preparative method of phenolphthalein, and, write the mode of action both acid and alkali.
    ii. Explain the principle and mechanism of diazo coupling reactions with examples.

25. i. What are narcotic and non-narcotic analgesic / drugs?
    ii. Explain the preparation and uses of A. sulpha pyridine and B. sulphadiazine drugs.

26. Write the structure of Vitamin A and B_2. Discuss the sources functions and deficiency symptoms of vitamins A, D, E and K.

27. Explain the following with relevant examples : i. Thermosetting resins ii. Epoxy resins iii. Cellulose adhesives.

28. Why is pretreatment of adherend surfaces necessary? Discuss the mechanism of adhesion.

29. Explain the manufacturing process of steel by Linz – Donawitzwith a neat sketch.

30. Discuss the composition, characteristics and uses of nickel – chromium steel.

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