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KNU/2025/MDC213

UG 2nd - Semester Examination - 2025 (Under NCCF)

Award: B.Sc.

Discipline : CHEMISTRY

Course Type : MDC2

Course Code : MDC213

Course Name : Chemical Science

Full Marks - 35

Time - 2 hrs

1. Answer any *five* questions:

1×5=5

- Give two examples of linear polymers.
- What are homopolymers? Cite an example.
- What is the full form PVC? Write down its one use.
- Mention the metal ion present in blood.
- Name one chemical used in antacid.
- Write down the name of two diseases that happen due to Zn^{2+} deficiency.
- Name one analgesic drug.
- Mention the name of one chelating agent that is used to treat lead poisoning.
- What are neuroleptics? Give one example.

2. Answer any *five* questions:

2×5=10

- Draw the structure of Nylon-6 and Nylon-6,6.
- Define degree of polymerisation. Name different factors that can affect degree of polymerisation.
- Write name of monomers of the following polymers and classify them as addition or condensation polymers—Teflon and Bakelite.
- Write down two differences between drugs and medicines.
- Write down two functions of calcium in our body.
- Describe two important roles of each Na^+ and K^+ ions in biological systems.
- What do you mean by biodegradable polymers? Give one example.
- Illustrate a brief comparative study between immunotherapy and chemotherapy.

3. Answer any *two* questions for 2022 Batch :

5×2=10

- Describe different steps involved in a polymerisation reaction.
 - Define weight average molecular weight (M_w) of polymer. Give its numerical formula. 2+3
- Outline the general steps in the discovery of a new drug. What do you know by side effects of a drug. 3+2
- What is antibiotic resistance?
 - Which type of antibiotics inhibits protein synthesis? Write name of one antibiotic of this type.
 - Write down two important uses of antimicrobial drugs. 1+2+2

- d) Give an outline of the main steps for radical polymerization. Name one monomer used in radical polymerization. 4+1

4. Answer any *one* question:

10×1=10

- a) i) write a short note on natural rubber and macromolecules.
ii) Discuss advantages of synthetic rubber over natural rubber.
iii) Classify neurologically active drugs.
iv) Describe the role of Mg^{+2} ion in our body. $(2\frac{1}{2}+2\frac{1}{2})+2+1+2$
- b) i) Define drug metabolism.
ii) What are the main steps of drug metabolism.
iii) What do you mean by toxicity of drugs?
iv) What are anti-microbial drugs? Give an example. $2+3+2+(2+1)$

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