5. Write brief notes on the following : **4,3,3**

(i) Dating of rock and minerals

(ii) Neutron activation analysis

(iii) Chernobyl disaster.

Unit III

6. Write brief notes on the following : **3,3,2,2**

(i) Polyurethanes

(ii) Acrylic Polymers

(iii) Polyamides

(iv) Poly vinyl chloride.

7. (a) What are Conducting Polymers ? Write construction of polypyrrole, its properties and applications. **4**

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B.Sc. (Hons.) (NEP-2020)

EXAMINATION, 2025

(Fourth Semester)

GENERAL CHEMISTRY-II

B-23-CHE-404

Time : 3 *Hours*] [*Maximum Marks :* 50

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory.

(Compulsory Question)

1. (a) Briefly explain half-life and average life of a radioactive substance.

(b) What is meant by zone of stability ?

(c) Write briefly about photopolymer and copolymer.

(d) What is meant by degree of polymerization ?

(e) Differentiate between natural polymer and synthetic polymers. Give example.

2×5=10

Unit I

2. (a) What is the importance of binding energy curves ? **3**

(b) What is packing fraction ? Write its significance. **2**

(c) What is an example of α, β and γ decay ? **2**

(d) Discuss the theory of radio disintegration. **3**

3. (a) Discuss radioactive displacement law. Explain with example. **3**

(b) Write a brief note on radio active series including its significance. **3**

(c) Briefly explain Geiger counter for measurement of radioactivity. **4**

Unit II

4. (a) What do you understand by nuclear fusion and fission ? Explain with example. **4**

(b) Discuss in detail the Nuclear reactor with construction and working. **6**

(b) Discuss structure and synthesis of cellulose. Write its important utilization. **4**

(c) Write the mechanism for the formation of polystyrene. **2**

Unit IV

8. (a) What is meant by number average and mass average molecular masses ? **3**

(b) How will you characterize polymers thermally ? What is the significance of thermal characterization in polymers ? **4**

(c) Write a brief note on thermal stability and decomposition of polymers. **3**

9. (a) What is Sedimentation ? How molecular weight of the polymer is determined by sedimentation. **5**

(b) Describe the viscosity method for the determination of molecular mass of a polymer. **5**

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