

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2016

(UG-CCSS)

Elective Course—Chemistry

CH 6B 20(E4)—CHEMISTRY AND TECHNOLOGY OF POLYMERS

Time : Three Hours

Maximum : 30 Weightage

I. Answer all *twelve* questions :

- 1 Nylon 66 is a copolymer of adipic acid and _____.
- 2 Give one example of Thermoplastic.
- 3 Protein is an example of :
 - (a) Synthetic polymer.
 - (b) Natural polymer.
 - (c) Semisynthetic polymer.
 - (d) None of these.
- 4 The monomer of CR is _____.
- 5 _____ is an example of biodegradable polymer.
- 6 _____ is an example for a plasticiser.
- 7 One example for an antioxidant is _____.
- 8 RSS is _____ sheet of rubber.
- 9 Tensile strength of a polymer depends on :
 - (a) Temperature.
 - (b) Strain.
 - (c) Both (a) and (b).
 - (d) None of these.
- 10 The equation for calculating number average molecular weight is _____.
- 11 Rubber latex can be coagulated by adding :
 - (a) Acetic acid.
 - (b) Formic acid.
 - (c) Sulphuric acid.
 - (d) Acetic acid or Formic acid.
- 12 The resistance to wearing away of the surface by friction is called _____.

(12 × ¼ = 3 weightage)

II. Answer all *nine* questions :

- 13 What is the molecular structure of SBR polymer ?
- 14 Define Tensile strength.
- 15 How a hard polymer can be made soft and pliable ?
- 16 What is meant by creep of a polymer ?

- 17 What are virgin polymers ?
- 18 Give two examples of bifunctional monomers.
- 19 What is meant by parison in blow moulding ?
- 20 In what way NBR and SBR differ ?
- 21 Give the use of Zeigler Natta catalyst in synthesis of polymers.

(9 × 1 = 9 weightage)

III. Answer any *five* questions. Each carries a weightage of 2 :

- 22 Distinguish between Vulcanised rubber and Non-vulcanised rubber.
- 23 Discuss briefly the structure and properties of Teflon.
- 24 Give the mechanism of cationic polymerisation with one example.
- 25 What is meant by co-ordination polymerisation ?
- 26 Give the structure and composition of natural rubber.
- 27 What is meant by calendering ?
- 28 Explain the process transfer moulding.

(5 × 2 = 10 weightage)

IV. Answer any *two* questions :

- 29 What is meant by :
 - (i) Molecular weight distribution of a polymer :
 - (ii) Poly dispersity index.
 - (iii) Viscoelasticity of polymers.
- 30 (a) Give an account of Butadiene rubbers.
(b) Distinguish between LDPE and HDPE.
- 31 Discuss briefly about Rubber processing.

(2 × 4 = 8 weightage)