

**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 x 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 ?**Turn over**

- 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 x 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 calendaring ?
- 28 Explain the process transfer moulding.

(5 x 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 x 4 = 8 weightage)