Reg. No. : ....

Name : ....

Sixth Semester B.Sc. Degree Examination, March 2020

First Degree Programme Under CBCSS

Chemistry

Elective Course

CH 1661.3 – POLYMER CHEMISTRY

(2017 Admission)

Special Examination

Time : 3 Hours   Max. Marks : 80

SECTION – A

Answer **all** questions. **Each** question carries **1** mark.

Answer in one word to maximum of **two** sentences

1.   Give two examples for natural polymers.

2.   Mention the general characteristics of polymers in comparison with the Common organic Compounds

3.   Give the structure of novolac.

4.   Explain the process vulcanization

5.   Monomer of natural rubber is

6.   Explain the preparation of polyolefines by taking an example.

7.   Give the general formula of PVA.

8.   The monomers of Terylene are ————————— and ——————————

9.   What is Glass transition temperature (Tg) in Polymer chemistry?

10.   Explain the term thermo forming.

(10 × 1 = 10 Marks)

SECTION – B

Short answer type (Not to exceed one paragraph)
Answer **any eight** questions. Each question carries **2** marks.

11.   Discuss the term functionality of monomers with an example.

12.   Give the applications of Bakelite.

13.   What are poly silicones?

14.   What do you understand by the term Nylon-6,6?

15.   What is PDI? Give its significance.

16.   Explain the process extrusion.

17.   Discuss thermosetting plastics with an example.

18.   Explain injection moulding in Polymer Processing.

19.   What are the factors affecting GTT of a polymer?

20. Explain graft polymers.

21. What are polycarbonates? Mention its applications.

22. What is PS? Give its applications.

(8 × 2 = 16 Marks)

SECTION – C

Short essay (Not to exceed **120** words)
Answer **any six** questions. Each question carries **4** marks.

23. Differentiate plastics, elastomers and fibers.

24. Write a short note on various methods of degradation of polymers.

25. Give the synthetic methods and applications of SBR and SAN.

26. Write a short note on polyethers and polyesters.

27. Write a short note on vulcanization of rubber.

28. Differentiate weight and viscosity average molecular weight of polymers.

29. Discuss the synthesis and applications of TEFLON.

30. Write short note on Nylons.

31. Discuss the electrical and optical properties of polymers.

(6 × 4 = 24 Marks)

SECTION – D

Long essay

Answer **any two** questions. Each question carries **15** marks.

32. (a) Describe the mechanism of ionic polymerization. **8**

(b) Discuss the kinetics of polymerization process. **7**

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33. Write an essay on synthetic resins.

34. (a) Write short note on cellulosics. **8**

    (b) Differentiate LDPE and HDPE. **7**

35. Write short notes **on** the following.

    (a) Crystallinity in polymers and TGA. **7**

    (b) Methods of determination of molecular weight of a polymer. **8**

    (2 × 15 = 30 Marks)

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