(Pages : 3)

E – 1653

Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2018

First Degree Programme Under CBCSS and Career Related

Chemistry

Elective Course

Common for CH 1661.3/IC 1661.3

POLYMER CHEMISTRY

(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions. **Each** question carries **one** mark. **(10×1=10 Marks)**

1. Stereo regular polymers are prepared by _____ polymerisation.
2. The principal linkage in polyurethane is
3. Poly vinyl chloride is prepared by _____ polymerisation technique.
4. What is SAN ?
5. Nylon 6 is made by the ring opening polymerisation of
6. Viscosity of a polymer melt _____ with increase in temperature.
7. Fibers possess high tensile strength due to
8. Polymeric films are produced by _____ technique.
9. Weight average molecular weight of polymers are determined by _____ method.
10. Dacron is a polyester of _____ and _____.

P.T.O.

SECTION – B

(Short Answer Type)

Answer **eight** questions. **Each** question carries **2** marks. **(8×2=16 Marks)**

11. Illustrate the term functionality of a polymer.

12. What is meant by polyaddition and polycondensation ?

13. Give any one method of preparation of a epoxy polymer.

14. Write a short note on Carothers equation.

15. Distinguish between HDPE and LDPE.

16. State any superior property of polychloroprene over other polymers. Give any one use of the polymer.

17. What is CMC ? How is it produced ?

18. Distinguish between polydispersity index and degree of polymerisation.

19. State any two factors that affect GTT.

20. What is meant by thermoforming ?

21. What are the two factors which enhance the thermal stability of polymers ?

22. Give an example for oxidative degradation.

SECTION – C

(Short Essay)

Answer **any six** questions. **Each** question carries **4** marks. **(6×4=24 Marks)**

23. Discuss the mechanism of addition polymerisation.

24. Give the method of synthesis and application of an amino resin.

25. What are silicones ? How are they prepared ?

26. Suggest a method for the synthesis of polystyrene and also give the merits and demerits of polystyrene polymer.

27. Write a short note on synthesis and application of Rayon.

28. Explain light scattering method for the determination of molecular weight of polymers.

29. Write a short note on synthetic rubbers.

30. What is vulcanisation ? What happens during vulcanisation ?

31. Write any two techniques for polymer processing.

SECTION – D

(Long Essay)

Answer **any two** questions. **Each** question carries **15** marks. **(2×15=30 Marks)**

32. What is a polymer ? Write an essay on classification of polymers.

33. What is Glass transition temperature ? What are the factors affecting Tg ? Give the relationship between Tg and Molecular mass of the polymer.

34. What is meant by degradation of polymers ? Explain various types polymeric degradations.

35. i) Write briefly on suspension and emulsion polymerisation technique. Discuss their merits, demerits and applications.

    ii) Briefly discuss the synthesis, properties and application of

    a) PVC b) Bakelite.
