

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013

Subject code: 1721607

Date: 05-06-2013

Subject Name: Polymer Materials and Testing

Time: 10.30 am – 01.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What do you mean by Synthetic fibre? Discuss its properties. (07)
(b) Why Spinning is important for fibre? List the different methods for spinning a fibre. Give the difference between all the methods. (07)
- Q.2** (a) Discuss in detail about the chemistry, compounding, vulcanisate properties & applications of Poly Butadiene Rubber (PBR). (07)
(b) Write about the chemistry and vulcanisate properties of Acrylonitrile Butadiene Rubber (NBR). (07)
- OR
- (b) Explain the chemistry and compounding of EPM & EPDM Rubber. (07)
- Q.3** (a) Discuss about the properties, characteristics and uses of Nylons. (07)
(b) Cellulose derivatives used as Plastics. Justify the statement. (07)
- OR
- Q.3** (a) What do you mean by Kevlar? Discuss its properties & uses. (07)
(b) Write in detail about Polytetrafluoroethylene (Teflon). (07)
- Q.4** (a) Justify the difference between Quality control & Quality assurance. (07)
(b) Explain the theoretical relationship between Stress & Deformation. (07)
- OR
- Q.4** (a) Variability due to testing is reduced by improving the accuracy or precision of the apparatus & procedures used. Justify the statement. (07)
(b) Write the importance of Standards & Test methods. (07)
- Q.5** (a) Define the Term Hardness. Write in detail about its methods for measuring (07)
(b) Write the importance of Tear Strength properties for vulcanized rubber. (07)
Discuss the procedure, calculations & principle of the method.
- OR
- Q.5** (a) Write the importance of abrasion test for polymer products. Also discuss about the abrasive cloth & procedure & test methods for carried out the abrasion test. (07)
(b) Explain the influence of storage, its period & condition on the properties of polymer product. (07)
