2014-2015
M.Sc. (Polymer Science & Technology)
IV Semester Examination
Polymer Materials-II (AC – 811)

Maximum Marks: 70  Credits: 04  Duration: Two Hours

Answer all the questions.
Assume suitable data if missing.
Notations used have their usual meaning.

Q.No.  Question  M.M.
1 (a)  Discuss the properties of polymer blends and give their important applications with the help of suitable examples.  [6.5]
1 (b)  Describe the methods determining the miscibility and compatibility with special reference to polymer blends.  [6.5]
1 (c)  Write short notes on any two of the followings:
(i) Plastic-Rubber Blends
(ii) Solution Cast Polymer Blends
(iii) Mechanical Polymer Blends  [5]
2 (a)  What are reinforcing fibers? How are they classified? Discuss their role in polymer composites.  [7]

OR

(a')  What are boron fibers? Why are these fibers preferred over carbon fibers in high performance polymer composites?
2 (b)  What are coupling agents used for the surface treatment of glass fibers? Describe the particulate reinforcement of polymer composites.  [7]
2 (c)  Discuss the advantages of polymer composites.  [3]
3 (a)  Discuss the manufacturing process of nitrile butadiene rubber. Explain, how does the compounding improve its quality?  [6]
3 (b) What are the raw materials to get the polyurethanes? Give the procedure used for the manufacturing of rigid polyurethane foam.

OR

(b') Describe the tapping and processing of rubber from the latex. Discuss the methods for the production of various conventional grade rubbers.

3 (c) How polymers are classified? Discuss various molding techniques employed in fabrication of polymers.

4 (a) Explain the filament winding technique for producing reinforced plastic articles.

4 (b) Discuss the minimum and critical fiber content in polymer composite materials.

4 (c) Explain resin transfer moulding and discuss its advantages.