

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)

CLASS: B. PHARM  
BRANCH: PHARMACY

SEMESTER : VIII  
SESSION : SP/19

SUBJECT: PS8413 PHARMACEUTICAL & BIOMEDICAL POLYMER

TIME: 3.00 Hrs.

FULL MARKS: 60

**INSTRUCTIONS:**

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
  2. Candidates may attempt any 5 questions maximum of 60 marks.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Define biocompatibility. [2]  
Q.1(b) Enlist different tests to evaluate hemocompatibility? [4]  
Q.1(c) How biocompatibility of polymers/ biomaterials is assessed *in-vitro*? [6]
- Q.2(a) What are the minimal requirements of soft tissue implant materials? [2]  
Q.2(b) Illustrate the principles of 3 categories of tests for assessing cytotoxicity [4]  
Q.2(c) Illustrate the importance of blood interfacing soft tissue implants. [6]
- Q.3(a) With the help of a neat diagram show applications polymers? [2]  
Q.3(b) Summarize the uses four natural polymers and synthetic polymers each? [4]  
Q.3(c) Explain the various components of natural proteins which effect their quality? [6]
- Q.4(a) Distinguish a Transplant from Implant? Write the limitations of a transplant? [2]  
Q.4(b) Explain the impact on polymer properties of the different average molecular weights and usual methods of determination [4]  
Q.4(c) Write in detail applications of various polymers in drug delivery systems? [6]
- Q.5(a) Classify biomaterial and give examples of each category [2]  
Q.5(b) Analyze different class of materials used in the body and point out their advantages, disadvantages and uses? [4]  
Q.5(c) Compute the various natural polysaccharides and explain the various components in each which effect their quality? [6]
- Q.6(a) Enlist the properties of Polymers for coating applications? [2]  
Q.6(b) Explain how sterilization effects various polymers with examples? [4]  
Q.6(c) Discuss the various mechanisms involved in deterioration of polymers? [6]
- Q.7(a) Enlist the three major factors on the success of a biomaterial or an implant is highly dependent on and enlist the requirements for an implant with an example? [2]  
Q.7(b) Summarize the different methods of preparing polymers with examples and graph? [4]  
Q.7(c) Describe the different methods for estimation of polymers? [6]

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