

Reg. No.



MANIPAL INSTITUTE OF TECHNOLOGY

(A Constituent Institute of MAHE – Deemed University)

Manipal – 576 104



FIFTH SEMESTER B.E. DEGREE MAKE UP EXAMINATIONS – JANUARY 2007

SUBJECT: BIOMATERIAL & ARTIFICIAL ORGANS (BME 311)

(REVISED CREDIT SYSTEM)

Monday January 15, 2007 2 p.m. to 5 p.m.

TIME: 3 HOURS

MAX. MARKS: 100

Instructions to Candidates

1. Answer any FIVE full questions.
2. Draw labeled diagram wherever necessary

1. (a) What is meant by defects in crystals? Discuss how defects can be engineered to alter the properties of materials. 10
(b) Write note on how compositional and structural factors affect the properties of polymers. 10
2. (a) Write note on Bone implant interface. 10
(b) Define Biocompatibility? Discuss the various biocompatibility tests. 10
3. (a) Write short notes on: i) Classification of composites ii) Bioactive ceramics iii) Corrosion of Bioimplants iv) Impact test of Biomaterials 5X4=20
4. (a) With regard to hard tissue replacements discuss: i) Internal fracture fixation device ii) Dental implants 5+5=10
(b) Discuss with the desired illustrations , the gas exchange system. 10
5. (a) Discuss to write in your own words regarding: i) Insulin administration systems ii) Therapeutic options in diabetes. 5+5=10
(b) Discuss the: i) Types of insulin and ii) the mode of their dosage. 5+5=10
6. (a) Discuss at length i) The 'Hepatic Failure' ii) Liver support system 5+5=10
(b) Discuss regarding the following: i) Cardio pulmonary bypass ii) Artificial Lung 5+5=10

