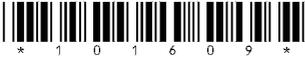


Printed Pages : 2



EBM604

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 101609

Roll No.

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B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15
BIOMATERIALS

Time : 2 Hours]

[Total Marks : 50

Note : Attempt all questions.1 Attempt any three questions of following : **4×3=12**

- (a) Define the term biomaterials. Classify biomaterials with appropriate examples.
- (b) Define the term biocompatibility. Mention different methods for improving blood and tissue compatibility problems.
- (c) Classify polymers and define each group.
- (d) Define composite. What are the important features of composite biomaterials ?
- (e) What are the basic criteria of biomaterials?

2 Attempt any three questions of following : **4×3=12**

- (a) What is stress corrosion cracking ? How can it be prevented ?

- (b) What is bioceramics ? Classify bioceramics with appropriate example.
- (c) Classify different crystal systems. Name different crystal defects.
- (d) Briefly explain about the different methods of prosthesis fixation with bone.
- (e) Describe the mechanics of improving the strength of composites.
- 3** Write short notes on any three : **4×3=12**
- (a) Hemolysis test
- (b) Sensitization and carcinogenicity
- (c) Pyrogenicity test
- (d) PMMA bone cement
- (e) Orthopaedic implant.
- 4** Attempt any one parts of the following : **7×1=7**
- (a) Explain the possible biocompatibility problems of bio materials. Which test are to be performed for newer biomaterials before clinical trials ?
- (b) Describe the ceramic/bone tissue reaction.
- 5** Attempt any one parts of the following : **7×1=7**
- (a) Draw stress-strain curve of a ductile material indicating the salient points and explain each point.
- (b) Briefly discuss about the different sterilization techniques for sterilization of biomaterials.