



Name :

Roll No. :

Invigilator's Signature :

CS/B.TECH(CT)/SEM-7/CT-703A/2012-13

2012

BIO-CERAMICS

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

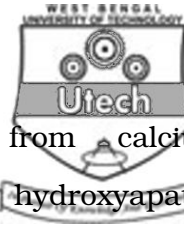
Answer any five questions

1. Define Biological and bioceramic materials with suitable examples. Why there is a increasing need of Bio-ceramics ? What are the different causes of Osteoporosis ? Discuss physiology of human bone. 2 + 4 + 3 + 5
2. State different types of Bioceramics-Tissue interfaces. Discuss different types of implant issue response. Explain various types of bioceramic-tissue attachments. 4 + 5 + 5
3. Discuss importance of alumina ceramics as bioceramics. Explain uses of bioceramics as hip prostheses. State other uses of alumina bioceramics. What are the advantages of zirconia bioceramics in respect to alumina ceramics. State different uses of zirconia bioceramics. 2 + 4 + 2 + 3 + 3

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4. What way biological apatite differs from calcium hydroxyapatite. Explain preparation of hydroxyapatite powder via precipitation method. State composition of dense hydroxyapatite. Mention events in the formation of bone-bonded interface. $3 + 5 + 3 + 3$
5. State desirable properties of bioceramics and their limitations. Mention different types of biocomposites along with at least two examples of each of them. Discuss fabrication method of biocomposites. Explain threefold reinforcement of the glass caused by the fibers. $3 + 4 + 4 + 3$
6. What are radioactive glass and its desirable properties? State its composition and manufacturing process along with its properties. Mention different hydroxyapatite coating techniques. $3 + 7 + 4$

