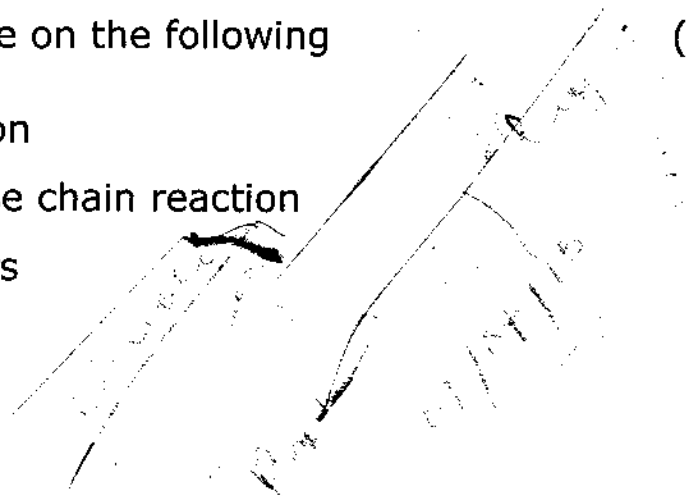


FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF HEALTH TECHNOLOGY
DEPARTMENT OF BIOMEDICAL TECHNOLOGY
2014/2015 HARMATTAN SEMESTER EXAMINATION
BMT 551 (GENETIC AND TISSUE ENGINEERING) 2 UNITS
TIME: 2HRS **8TH APRIL 2015**

INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS

- 1a. Explain the term "Genetic engineering" (4mks)
- (b) Give a historic account of the emergence of the field of genetic engineering (7mks)
- (c) Discuss the application of genetic engineering in Medical Science (7mks)
- 2a. Discuss monoclonal antibodies under the following headings
- i. Definition
 - ii. Production
 - iii. uses (9mks)
- (b) Discuss the application of Genetic Engineering in Agricultural Science (9mks)
- 3a. Write short note on the following (8mks)
- i. Gene action
 - ii. Polymerase chain reaction
 - iii. Bioreactors



iv. Scaffolds

- (b) Discuss dual Phase Technique and any other technique for Fabrication of Scaffolds. (10mks)
- 4a. Explain what is meant by Tissue Engineering (6mks)
- (b) Discuss two challenges facing Tissue Engineering (6mks)
- (c) Briefly explain how these challenges are being Overcomed (6mks)
- 5a. Mention any four types of Cells employed in Tissue Engineering (4mks)
- (b) Discuss the advantages properties of each of the cell types mentioned in 'a' above (10mks)
- (c) Distinguish between Tissue Engineering and Regenerative Medicine (4mks)
- 6a. Mention two good sources of Stem cells (3mks)
- (b) With the help of a labeled diagram only, show how Regenerative Medicine is classified (5mks)
- (c) Discuss four requirements that a material must satisfy in order to function effectively as Scaffold in Tissue Engineering (10mks)