

Federal University of Technology, Owerri
Department of Biomedical Technology

2012/2013 Harmattan Semester Examination

BMT 551: Genetic and Tissue Engineering

Instruction: Answer any four (4) Questions

1. Write short notes on the following

- i. Polymerase chain Reaction 5 mks
- ii. Germplasm 5 mks
- iii. Monoclonal Antibodies 5 mks
- iv. Gene action 5 mks
- v. Codon 5 mks

2. Discuss the application of Genetic Engineering in Medicine and Biotechnology. 12 mks

b(i) Define the term *stem cell* 6 mks

(ii) Mention two good sources of stem cells. 7 mks

3(a) Define Tissue Engineering 9 mks

(b) Discuss the advantageous properties of any three types of cells employed in tissue Engineering.

4(a) Distinguish between Tissue Engineering and Regenerative Medicine.

(b) Discuss two major challenges now facing tissue engineering and explain how these challenges could be overcome

5(a). Write short notes on the following

(i). Tissue culture (ii) Bioreactors.

(b) Discuss any two (2) techniques for fabrication of scaffolds

6(a) Give four examples of materials that have been investigated and found satisfactory for use as scaffolds in tissue Engineering.

(b) Discuss four requirements that a material must satisfy in order to function effectively as scaffold in tissue engineering.