FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
DEPARTMENT OF BIOMEDICAL TECHNOLOGY
2011/2012 HARMATTAN SEMESTER EXAMINATION
BMT 551: GENETIC AND TISSUE ENGINEERING

Time Allowed: 2hrs

Instruction: Answer Four (4) questions only.

1a. Briefly outline the principles involved in tissue engineering.
b. What is the relationship between Genetic engineering and Modern Biotechnology?
c. Mention three areas or fields in which the principles of tissue engineering is of beneficial application.

2a. Define the term Scaffolds, as it applies to tissue engineering.
b. On the basis of source, list seven (7) types of cells utilized in tissue engineering.
c. Explain the advantageous properties of any 2 types mentioned in 'b' above.

3a. Discuss two major challenges now facing tissue engineering.
b. Write short notes on the following:
i. Genetic engineering
ii. DNA finger printing
iii. Polymerase Chain Reaction
iv. Clonning.

4a. Mention five (5) techniques of fabrication of scaffolds.
b. Briefly explain any two (2) technique mentioned in 'a' above.
c. Mention four (4) examples of materials that have been investigated and found satisfactory for use as scaffolds in tissue engineering.

5a. Discuss two major challenges now facing cloning.
b. Briefly explain the relevance of the following in tissue engineering.
i. Tissue culture
ii. Bioreactors
c. Write short notes on the following:
i. Gene action
ii. Codon
iii. Application of genetic engineering in fighting diseases.