

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRRI
SCHOOL OF HEALTH TECCHNOLOGY

DEPARTMENT OF BIOMEDICAL TECHNOLOGY

2013/2014 RAIN SEMESTER EXAMINATION

BMT 572 CLINICAL MANAGING TECHNOLOGY

Answer Any five (5) questions

Hours: 3:00

- (1a) Outline 10 characteristics of x-rays (15 marks)
- (b). State the basic principle of computed tomography (CT) (2½marks)
- (c). What is the purpose of computed tomography scanning? (2½ marks)
- (2a). Define computed tomography (2 marks)
- (b). Draw a well labeled diagram of the fourth (4th) generation CT (10 marks)
- (c). With the aid of the diagram in (2b), describe the 4th generation (CT) (8 marks).
- (3a) Define Ultrasound (2 marks)
- (b). Discuss the origin of ultrasound (9 marks)
- (c). Explain the use of ultrasound gel (9 marks).
- (4a). Define transducer (2 marks)
- (b). Draw a well labeled diagram of an ultrasound transducer (10 marks)
- (c). with the aid of the diagram in 4b, describe ultrasound transducer. (8 marks)
- (5a). Define piezoelectric effect (2 marks)
- (b). Draw 2 diagrams of the characteristics of piezoelectric crystal in ultrasound transducer (10mks)
- (c). With the aid of the diagrams in (5b), describe the characteristics of piezoelectric crystal in ultrasound transducer (8 marks).
- (6a). Define Nuclear magnetic resonance (NMR) (2 marks)
- (b). List the main six equipment in magnetic resonance imaging system (6 marks)
- (c). Draw a well labeled diagram of MRI (12 marks)
- (7a). Draw two diagrams of hydrogen protons in human body
- (i). In the absence of any magnetic field (7 marks)
- (ii). In the presence of magnetic field (7 marks)
- (b). Write on any one Magnets use in Magnetic Resonance imaging (6 ma
- (i). Permanent magnets
- (ii). Resistive magnets
- (iii). Superconducting magnets