

**FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**  
**SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION**  
**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION**  
**1<sup>ST</sup> SEMESTER EXAMINATION 2022/2023 SESSION**

**COURS CODE: ITE 551**

**COURSE TITLE: RADIO AND TELEVISION**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTION: ANSWER A TOTAL OF FOUR (4) QUESTIONS ONLY.**

**QUESTION ONE IS COMPULSORY**

- 1a. Draw a well labelled simplified block diagram of CRT receiver and state the function of each block.
- 1b. With the aid of a well labelled diagram, explain the principles of operation of black and white Cathode Ray Tube.
- 2a. State the basic principles of operation of plasma televisions.
- 2b. Explain the basic principles of operation of LED televisions.
- 3a. With the aid of a diagram, list and explain four layers of the ionosphere
- 3b. With the aid of a well labelled diagram, explain the following terms as related to radio wave propagation.
  - (i) Ground wave (ii) Sky wave (iii) Space wave
- 4a. Explain the term "modulation" and state five importance of modulation.
- 4b. In relation to amplitude modulation, draw well labelled graphical diagrams of the following
  - (i) AF signal (ii) Unmodulated carrier wave (iii) Modulated carrier wave.
- 5a. With the aid of a well labelled diagram, explain the principles of operation of a superheterodyne radio receivers.
- 5b. State three advantages and three disadvantages of the superheterodyne radio receivers.