FEDERAL UNIVERSITY OF TECHNOLOGY

SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION

FIRST SEMESTER EXAMINATION 2019/2020 SESSION

COURSE TITLE: RADIO AND TELEVISION
UNITS: 2
COURSE CODE: ITE 551
TIME ALLOWED: 2HOURS

INSTRUCTION: ATTEMPT ANY FOUR QUESTIONS.

Q1a. Define the following terms as applied to Frequency Modulation; (i) Carrier swing (ii) Frequency deviation (iii) modulation index (iv) System deviation

b. An FM signal with a center frequency of 105MHz reaches a highest frequency of 105.08 MHz when modulated by a 5KHz sinusoidal tone. Determine: (a) The frequency deviation (b) The carrier swing (c) The modulation index of the F.M. wave (d) The lowest frequency attained by the modulated wave

Q2a. With the aid of a neat diagram, explain the principles of operation of super heterodyne radio receiver

b. state three advantages and three disadvantages of the superhet receiver

Q3a. Draw the block diagram of AM and FM sound transmitters

b. Explain five advantages of modulation

Q4a. Explain three basic functions of a TV receiver and state the difference between chrominance and luminance signals

b. Explain the functions of the following stages in a TV receiver: (i) Antenna (ii) RF Amplifier (iii) local oscillator (iv) Mixer (v) Video detector

Q5a State the advantages and disadvantages of FM over AM Radio

b. In a tabular form, state the difference between NTSC, PAL and SECAM TV systems