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MANIPAL INSTITUTE OF TECHNOLOGY Manipal University FOURTH SEMESTER B.TECH (E& C) DEGREE END SEMESTER EXAMINATION - APRIL / MAY 2017 SUBJECT: CONSUMER ELECTRONICS (ECE - 3281)

TIME: 3 HOURS

MAX. MARKS: 50

- Instructions to candidates
 - Answer **ALL** questions.
 - Missing data may be suitably assumed.
- 1A. With neat diagram, explain the working of Electrodynamic loud speaker. Give its characteristics, merits and demerits.
- 1B. A microphone has an output of -60dB and is connected to a $0.5M\Omega$ input of a preamplifier. The preamplifier has a gain of +40dB. The signal then passes through an equaliser with an insertion loss of -15dB through a main amplifier with a gain of +65dB. If the output of the speaker is 6W find the total power gain and the input voltage to the preamplifier.
- 1C. Discuss blue ray disc technology. Compare its features with compact disc.

(5+3+2)

- 2A. Discuss with neat block diagram, working of Television receiver. Give the active and blanking periods in horizontal and vertical scanning.
- 2B. How is the illusion of continuity created in television pictures? With neat diagram, discuss the basic principle of working of a television picture tube.
- 2C. Differentiate between edge lit and full array lit in LED TV screen.

(5+3+2)

- 3A. Give a brief description about the different generations of GSM. Discuss network architecture of GSM with necessary diagram.
- 3B. Give a brief description on how to improve the coverage and capacity of cellular systems.
- 3C. Give the digital protocol and receiver block for paging systems.

(5+3+2)

- 4A. Discuss basic fax machine operations with necessary diagram. Explain its hand shake process.
- 4B. Give the Register structure of a calculator and explain its working.
- 4C. With an example, discuss barcode scanning and decoding.

(5+3+2)

- 5A. Give the functional block diagram of a microwave oven with digital timer system and explain its working.
- 5B. Discuss the basic components of heating and cooling systems in a refrigerator.
- 5C. Give the program flow chart for washing machine control.

(5+3+2)

ECE -- 3281