MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

FOURTH SEMESTER (E&C) B.Tech. DEGREE END SEMESTER EXAMINATION - APRIL- 2018
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 permanent magnet loud speaker. Give its specifications, merits and demerits.

1B. What are the limitations of crystal microphones? A microphone has an output of -60dB and is connected to a 0.5MΩ 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. Give the physical details of compact disc with its size and capacity. Compare it with blue ray technology.

(5+3+2)

2A. With a neat block diagram explain the working of colour Television receiver.

2B. Discuss linear scanning, Sequential Scanning and interlaced scanning in television systems.

2C. Differentiate between LED and LCD TV screen.

(5+3+2)

3A. Discuss network architecture of GSM with necessary diagram. Give a brief description about the different generations of GSM.

3B. Explain the need of Cell splitting and cell sectoring.

3C. Explain dual tone multi frequency system in telephone system.

(5+3+2)

4A. With necessary block diagram explain the internal organization of the calculator.

4B. Discuss in detail the working of Digital clock with necessary diagram.

4C. With an example discuss barcode scanning and decoding.

(5+3+2)

5A. With neat diagram explain the arrangement of basic component of an all air heating and cooling system in air conditioners.

5B. Discuss the hardware and software development of washing machine control with its dataflow chart and program flow chart.

5C. Give the features of the dish washer with its three roles of functioning.

(5+3+2)