Roll No .....

EC-111

B.E. (All Branches), I Year II Semester Examination, June 2016

Choice Based Credit System (CBCS)

Fundamentals of Electronics Engineering

Time : Three Hours

Maximum Marks: 60

Note: i) Attempt any five questions out of seven questions.
ii) All questions carry equal marks.
iii) Draw the neat diagram, wherever necessary.
iv) Assume data, wherever necessary.

1. a) Define diode. Describe theory of diode operation. What is the application of it?
   b) What are the types of diode? List them and draw their symbol.

2. a) Determine the decimal numbers represented by following binary numbers
      i) 110101
      ii) 101101
      iii) 11111111
      iv) 00000000
   b) Perform the following:
      i) Addition (?) = 1011+1101
      ii) Subtraction (?) = 1011-0110

3. a) Describe the OR, AND, NAND gate with the help of truth table.
   b) Give the logical equation $Y = (A + BC)(B + \bar{C}A)$, Design a circuit using gates to realize this function.

4. a) Define Analog and Digital communications. Draw the basic block diagram of transmitter and receivers.
   b) Draw the various RF bands of IEEE spectrum and write their applications.

5. a) How 'NOT' operation can be performed using transistor? Describe.
   b) Describe various Boolean Identities. Draw the 'AND' circuit using diode logics.

6. a) Compare 'half wave rectifier' with 'full wave rectifier' with neat sketch.
   b) What is signal? Define. Amplitude is important variable parameters of signal. What kind of operations can be performed with amplitude? Describe.

7. a) Describe difference analog and digital signal in detail.
   b) How analog signal can be converted in to a digital one? Describe.

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