*Total No. of Questions :8]* *[Total No. of Printed Pages : 2*

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# EC-111

## B.E. I & II Semester

Examination, June 2017

## Choice Based Credit System (CBCS)

## Fundamentals of Electronics Engineering

***Time : Three Hours***

***Maximum Marks: 60***

***Note:*** i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Define periodic and non periodic signals, Energy and power signals.

   b) Draw and explain unit step and unit ramp functions.

2. a) Draw and explain the construction, working and applications of the zener diode.

   b) Draw and explain V-I characteristics of pn junction diode. Define Knee and Breakdown voltages.

3. a) Draw and explain full wave rectifier circuit. What are the advantages of Bridge Rectifier?

   b) Convert $(255)_{10}$ to

   i) Binary

   ii) Octal

   iii) Hexadecimal









4. a) What do you mean by 1's and 2's complement of binary numbers? Take suitable examples and explain.

   b) Draw logic symbols and truth tables of AND, OR, NOT, NOR gates.

5. a) Draw and explain Ex-OR gate. Why Ex-OR gate is called an ODD gate?

   b) What is Universal gate? Implement AND, OR and NOT gates using NAND gates and NOR gates.

6. a) Find the complement of the functions

   $F1 = x'yz' + x'y'z$ and

   $F2 = x(y'z'+yz)$

   b) Draw and explain the IEEE frequency spectrum used for Electronic Communication.



7. a) Draw a block diagram of communication system and explain all the elements in detail.

   b) What is Modulation? Explain the need of Modulation.

8. Write short notes on any two of the following:
   a) Guided and unguided propagation
   b) Principle of Duality
   c) Clipper and Clamper circuits

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