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Roll No .

EC-112

B.E. I & II Semester

Examination, June 2017

Choice Based Credit System (CBCS)

Electronics - I

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, causal and non causal signals.

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

2. a) Write the Dirichlet's conditions for Fourier series. Explain the concept of negative frequencies.

   b) Write the trigonometric form of the Fourier series representation of a periodic signals.

3. 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.

4. a) Draw and explain full wave rectifier circuit. What are the advantages of bridge rectifier?

   b) Convert $(FF)_{16}$ to

      i) Binary

      ii) Octal

      iii) Decimal

5. a) What do you mean by 9's and 10's complement of decimal numbers? Take suitable examples and explain.

   b) Draw logic symbols and truth tables of AND, OR, NOT, NOR gates. http://www.rgpvonline.com

6. 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.

7. a) Find the complement of the functions:

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

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

   b) What is a Clipper circuit? Take a suitable example and explain its application.

8. Write short notes on any two of the followings:

   a) Intrinsic and extrinsic semiconductors

   b) Principle of Duality

   c) Clamper circuit

   d) Even and odd functions

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