Total No. of Questions : 5] *[Total No. of Printed Pages : 2*

Roll No .....

EX - 304

B.E. III Semester

Examination, June 2015

Electronic Devices and Circuits - I

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Draw the P-N junction diode and explain forward and reverse bias condition.
   b) Draw the practical diode equivalent circuit and explain briefly.
   c) Write six applications of diodes.
   d) Draw and explain full wave rectifier circuit with filter.

   OR

   Discuss the working of tunnel diode and also explain tunnel diode oscillator.

Unit - II

2. a) Write briefly the principle operation of BJT transistor.
   b) Construct and label the VI characteristic of transistor.
   c) Write few applications of transistors.

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   d) Discuss the principle of operation of FET, draw its characteristics and also discuss its limitations.

   OR

   Discuss the principle of operation of MOSFET, draw its characteristics and discuss its applications.

Unit - III

3. a) Write briefly about the types of biasing applied to transistor.
   b) What do you understand by thermal runaway?
   c) Compare BJT and FET.
   d) Analyse a single stage transistor amplifier using h - parameters.

   OR

   Discuss the principle working of Darlington amplifier.

Unit - IV

4. a) What do you understand by negative and positive feedback?
   b) Classify types of feedback amplifiers.
   c) Discuss the merits of negative feedback.
   d) Explain the working of R-C phase shift oscillator.

   OR

   Discuss the working of wein bridge oscillator.

Unit - V

5. a) What are power amplifiers?
   b) Classify types of power amplifiers.
   c) Discuss the concept of push pull amplifier.
   d) Discuss the working of class A amplifier and derive its percentage efficiency.

   OR

   Discuss the working of class AB amplifier and also derive its efficiency.

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