Roll No. ....

24004

B. Tech 1st Semester

(Common for All Branches)

Examination – December, 2017

BASICS OF ELECTRONICS

Paper : ECE-101-F

Time : Three Hours]   [Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting at least *one* question from each Section. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) What is barkhausen criteria for oscillations?

                                             $5 \times 4 = 20$

   (b) Why LED's emit light of different colours ?

   (c) What is ideal diode ? Write down diode equation.

   (d) What is flip-flop ?

   (e) Give truth table of OR gate.

SECTION – A

2. What is semiconductor ? Explain with its types. Why we prefer Si instead of Ge ? 20

3. Explain the terminal characteristics of PN Junction diode and compare it with ideal diode characteristics. 20

SECTION – B

4. (a) Write short note on SMPS. 10

   (b) Explain working of Wein Bridge oscillators. 10

5. (a) Discuss characteristics of an ideal op-amp. 10

   (b) Explain block diagram of op-amp. 10

SECTION – C

6. Explain function Generator with the help of block diagram. 20

7. (a) Differentiate combinational and sequential circuit. 10

   (b) What are Universal Gates ? Explain. 10

SECTION – D

8. (a) Explain different types of segment displays. 10

   (b) What is LED ? Discuss its construction and working. Give its advantages and disadvantages. 10

9. Write short notes on : 10 × 2 = 20

   (a) SR flip-flop

   (b) Voltage Regulator

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