Roll No. .....

24004

B. Tech. 1st Semester

Examination – December, 2013

BASICS OF ELECTRONICS

'F' Scheme

Paper : ECE-101-F

Time : Three hours] *[Maximum Marks : 100*

Before answering the question, 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 ***one*** question from each Section Question No. 1 is ***compulsory***.

1. (a) Explain the necessity of doping. 2

(b) Why is silicon more widely used for semi conductor material ? 2

(c) What is positive feedback ? Where is it used ? 2

(d) What is slew rate ? 2

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(e) What is Race-around condition ? 3

(f) Why is the efficiency of SMPS high ? 3

(g) Convert $(FF3B)_{16}$ to equivalent decimal. 3

(h) What is the function of "delay line" in an oscilloscope ? 3

SECTION – A

2. (a) What is meant by biasing of a p-n junction diode ? Why is it necessary ? Also explain the V-I characteristics of junction diode. 10

(b) Explain R-C coupled amplifier draw its frequency response curve at different frequencies. 10

3. (a) Explain the concept of cascaded amplifier. Why cascading is required ? 10

(b) Discuss the advantages and disadvantages of

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SECTION – B

4. (a) What is crystal oscillator ? Draw its equivalent circuit and derive result for impedance and resonant frequency. 10

(b) Explain the block diagarm of Op-amp. 10

5. (a) Compare the working of Inverter and UPS. 10

(b) Explain voltage regulator with the help of block diagram. 10

SECTION – C

6. (a) What are universal gates ? Realize all the gates using universal gates. 10

(b) Explain the working of J-K flipflop. 10

7. (a) Discuss role,importance and application of test instruments. 10

(b) Explain the working of function generator. 10

SECTION – D

8. (a) Explain the type of liquid crystal cells. 10

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(b) Discuss the advantages and disadvantages of LCD display. 10

9. (a) How fourteen segment display works ? Design a circuit for it. 10

(b) What is LED ? Why LED's emit light of different colours ? Give its advantages and disadvantages. 10

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