

24004

B. Tech. 1st Semester Examination, December-2012

BASIC OF ELECTRONICS

Paper-ECE-101-F

Time allowed : 3 hours]

[Maximum marks : 100

Note : Attempt five questions in total, at least one question from each section. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) What is Fermi level ? 3
- (b) Define amplifier and classify. 3
- (c) How bandwidth of an Amplifier will be calculated ? 3
- (d) Define flip-flop. 3
- (e) Give the truth table of NAND gate. 3
- (f) Why LED's emit light of different colours ? 3
- (g) Define LCD. 2

Section-A

2. (a) Draw and explain the frequency response curve and working of RC-coupled Amplifier. 10
- (b) What is P-N Junction ? How it is formed ? Also define characteristics of P-N Junction diode. 10

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P.T.O.

3. (a) What do you mean by Cascaded of Amplifier ?  
Discuss the effect of Cascaded Amplifier on the  
bandwidth of Amplifier. 10
- (b) What is feedback ? Discuss the effect of – ve  
feedback on Amplifier on gain and bandwidth. 10

### Section-B

4. (a) Explain, with neat diagram, working of a RC-  
phase shift oscillator. Give its advantages and  
disadvantages. 10
- (b) What is an Op-Amp ? Discuss how Op-Amp acts  
as inverting and non-inverting Amplifier. 10
5. (a) Write a short note on voltage regulator. 10
- (b) Write a short note on SMPS. 10

### Section-C

6. (a) Convert following :
- (i)  $(0.325)_{10} = ( )_2$
- (ii)  $(750)_{10} = ( )_{16}$
- (iii)  $(11011)_2 = ( )_{10}$
- (iv)  $(1E9c)_{16} = ( )_8$  10
- (b) Explain the block diagram of CRO. 10

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7. (a) Simplify and realize the following expression

$$Z = \bar{A}B + B\bar{C} + BC + A\bar{B}\bar{C} \quad 16$$

- (b) Explain working of J.K. flip-flop. 10

### Section-D

8. (a) Write application of LED in Electronic display.

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- (b) Which is better between LCD and LED display and why ? Discuss different types of LCD in detail. 12

9. Write short notes on :

- (a) Intrinsic semiconductor

- (b) Characteristics of Op-Amp. 20

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