

**B.Tech. 2nd Semester (F. Scheme) Examination,
May-2012**

BASIC OF ELECTRONICS

Paper - ECE-101-F

Time allowed : 3 hours]

[Maximum marks : 100

Note : Attempt any five questions. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) What is feedback in amplifier? Why feedback is required? 03
- (b) Give truth table AND gate. 03
- (c) Define drift and diffusion current. 03
- (d) Define SMPS. 02
- (e) Write down the characteristics of an ideal op-amp. 03
- (f) Convert $(A2B6)_{16} = (?)_8$ 03
- (g) What is Barkhausen criteria for sustained oscillators? 03
2. (a) Discuss the terminal characteristics of P-N Junction diode with help of diode equation. 10
- (b) Differentiate between N-type and P-type semiconductor. Also explain the term "ideal" diode. 10

3. (a) Explain the concept of cascaded amplifier. Why cascading is required? 10
- (b) Discuss with help of diagram, frequency response of RC coupled amplifier at different frequency ranges. 10
4. (a) Explain the working of a phase shift oscillator with diagram. Give its advantages and disadvantages. 12
- (b) Explain how Zener act as voltage regulator. 8
5. (a) Explain the block diagram of op-amp. 10
- (b) What is UPS? Explain in brief UPS ONLINE and OFF LINE mode. 10
6. (a) Convert the following: 10
- (i) $(2715)_8 = (?)_{16}$
- (ii) $(1245)_{10} = (?)_8$
- (iii) $(0.625)_{10} = (?)_2$
- (iv) $(11010111)_2 = (?)_8$
- (b) Differentiate between combinational and sequential circuits. 10

7. (a) Realize AND and OR gates using NOR and NAND gates. 10
- (b) Explain the block diagram of CRO. 10
8. (a) Enumerate the applications of LED in electronic display. 08
- (b) Which is better between LCD and LED? Why? Discuss the different types of LCD in detail. 12
9. Write a short note on:
- (a) J.K. flip flop
- (b) Extrinsic semiconductor. 20