

24004

B.Tech. 1st Semester (F-Scheme) Examination,

December-2011

BASIC OF ELECTRONICS

Paper-ECE-101-F

Time allowed : 3 hours]

[Maximum marks : 100

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

1. (a) What is an ideal diode ? Write down diode equation. 3
- (b) What is an amplifier and why cascading is required in amplifier ? 3
- (c) What is Barkhausen criteria for oscillations ? 3
- (d) What is slew rate and CMRR ? 3
- (e) What is flip flop ? 2
- (f) What is Aquadag ? Why it is used ? 3
- (g) Why LED's emit light of different colours ? 3

2. (a) What is PN Junction ? How it is formed ?
Also explain the V-I characteristics of junction diode. 10
- (b) Differentiate between Intrinsic and Extrinsic semiconductors. 5
- (c) State and explain drift and diffusion current. 5
3. (a) Discuss the working of R-C coupled Amplifier.
Also explain why gain of Amplifier decreases at low frequency and high frequency. 10
- (b) Discuss the effect of negative feedback on gain and Bandwidth of an Amplifier. 10
4. (a) Explain, with diagram, working of Wein Bridge oscillator. Give its advantages and disadvantages. 12
- (b) Discuss the characteristics of an Ideal (op-Amp). 8

5. (a) Explain how op-Amp act as Integrator and differentor. 10
- (b) Explain the working of crystal oscillator. Give its advantages and disadvantages. 10
6. (a) Convert the following :
- (i) $(0.0625)_{10} = (?)_2$
- (ii) $(279)_{10} = (?)_8$
- (iii) $(453.75)_{10} = (?)_{16}$
- (iv) $(IE7B)_{16} = (?)_8$ 10
- (b) What is CRO ? Explain with block diagram. 10
7. (a) What are Universal gates ? Why they so called ? 10
- (b) Explain the block of function generator. 10

8. (a) Explain different types of segment display. 8
- (b) What is LED ? Discuss its construction and working. Give its advantages and disadvantages. 12
9. (a) What is LCD ? Explain different types of LCD with diagram. Give its advantages and disadvantages. 12
- (b) Write a short note on : S.R. flip flop. 8