

Code No. : 5436/N

FACULTY OF ENGINEERING
B.E. 2/4 (M/P) II Semester (New) (Main) Examination, May/June 2012
BASIC ELECTRONICS

Time : 3 Hours]

[Max. Marks : 75

Note : Answer *all* questions from Part A. Answer *any five* questions from Part B.

PART - A

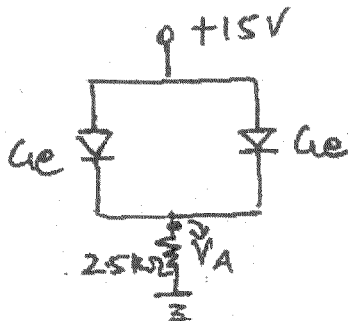
(25 Marks)

1. Draw the energy band diagram of a semiconductor. 2½
2. What is PIV ? Compare PIVs of bridge and center tapped rectifiers. 2½
3. With a neat sketch, explain the h-parameter model of a CE BJT. 2½
4. Explain zener and avalanche breakdown. 2½
5. List out the advantages of negative feedback. 2½
6. Draw the equivalent electrical circuit of a crystal oscillator and discuss its significance. 2½
7. Differentiate between a combinational and a sequential circuit. 2½
8. What is an instrumentation amplifier ? 2½
9. Sketch the characteristics of an SCR and list out its applications. 2½
10. Explain the limitations of an LVDT. 2½

PART - B

(50 Marks)

11. a) Derive an expansion for current in a diode. 4
b) Determine V_A for : 3



- c) Compare drift and diffusion currents. 3

(This paper contains 2 pages)



- 12. a) Draw the various blocks of a voltage regulation circuit. 3
- b) What is ripple ? Derive an expression for ripple of a center tapped full wave rectifier. 4
- c) Draw a neat sketch of an LC filter and explain. 3
- 13. a) How are amplifiers classified ? What are the four h-parameters ? Show with an example ? 5
- b) How does zener diode act as a regulator ? Explain. 5
- 14. a) Explain the effect of negative feedback on input and output impedances of an amplifier. 5
- b) Draw a neat diagram of an RC phase shift oscillator. What are its advantages and disadvantages ? Explain. 5
- 15. a) Describe the basic principle of operation of a differentiator. 5
- b) What are the universal gates ? Why ? Explain the operation of a full adder circuit. 5
- 16. a) Describe the construction of a UJT. What is its principle of operation ? 5
- b) What are the salient features in the V.I characteristics of a TRIAC ? 5
- 17. Write short notes on :
 - a) Transistorised IC regulators 5
 - b) LCD and LED. 5