(Pages : 2) **3347**

Reg. No. : .....

Name : .....

Combined First and Second Semester B.Tech. Degree Examination, May 2015
(2013 Scheme)
13.109 : BASIC ELECTRONICS ENGINEERING (BCEHMNPSU)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **2** marks.

1. Differentiate Zener diode from normal diode.
2. Explain the working of solar cell.
3. Realize $Y = AB^1 + A^1B$ using NAND gates.
4. Explain the terms ripple factor and PIV with reference to diode rectifiers.
5. What are the characteristics of an ideal OPAMP ?
6. Define gauge factor.
7. Write down the equation of an AM wave and explain how it can be demodulated.
8. Explain the function of satellite transponder.
9. What is GPRS ? Where it is used ?
10. What is WLL ? **(10×2=20 Marks)**

PART – B

Answer **any one full** question from **each** Module. **Each** question carries **20** marks.

Module – I

11. a) Compare the characteristics of the three transistor configurations. Which one you prefer as a current amplifier ? Why ?

    b) Differentiate between Photo diode and Light emitting diode and explain their operation. List out a few applications of both.

OR

12. a) Draw the structure of an N-Channel JFET and plot its drain characteristics. What is pinch off region ?

    b) Draw the JK flip flop and explain its truth table. **(1×20=20 Marks)**

P.T.O.

Module – II

13. a) With help of circuit diagram and wave forms explain full wave rectifier using center-tap transformer with and without filter. Write down the equations for V_{dc} and ripple factor in both cases.

    b) What is meant by bandwidth of an Amplifier ? With a neat circuit diagram explain the operation of a RC coupled CE amplifier.

OR

14. a) Describe the functional block diagram of an Operational Amplifier. Show the circuit of an inverting amplifier.

    b) What are lissajous patterns ? Explain the working of a DSO.

(1×20=20 Marks)

Module – III

15. a) Explain the working of a super heterodyne AM receiver with block diagram.

    b) Write down the Radar range equation. Explain the operation of a Pulsed Radar.

OR

16. a) Explain the concept of geostationary satellites. With a block diagram explain the operation of satellite earth station.

    b) Explain the process of digitization of waveforms by PCM technique.

(1×20=20 Marks)

Module – IV

17. a) What is meant by frequency reuse in cellular communication ? Explain the principle of GSM.

    b) What are advantages of optical communication ? Describe the principle of light propagation through optical fibers.

OR

18. a) How colour information is transmitted in TV ? Explain working principle of colour television receiver.

    b) Write short notes on i) Semiconductor laser ii) APD.

(1×20=20 M