2585

Reg. No. : ....

Name : ....

Combined First and Second Semester B.Tech. Degree Examination, May 2009
BASIC ELECTRONICS ENGINEERING
(2003 Scheme)

Time : 3 Hours
Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Describe the different types of cores used in transformers of electronic circuits.

2. Explain the origin of Barrier potential.

3. Calculate the collector current (I_C) and emitter current (I_E) levels for a transistor with $\alpha_{DC} = 0.99$ and $I_{CBO} = 1\,\mu A$ when I_B is $20\,\mu A$

4. Explain why a bridge rectifier is preferred over a centre-tap rectifier.

5. What are conditions for an oscillator to oscillate ?

6. Differentiate between digital ICs and Linear ICs.

7. What is the principle of operation of strain gauge ?

8. Sketch the waveform of AM and define the modulation index of AM.

9. What are the advantages of satellite communication ?

10. What is frequency reusage in mobile communication.

PART – B

Answer **any two** questions from **each** module. **Each** question carries **10** marks.

Module – I

11. a) Explain the construction features of wire wound resistors.

    b) What is the significance of voltage rating of capacitor ?

12. a) Differentiate between diffusion current and drift current.

    b) Define acceptor doping and explain how it is effected using illustration.

13. a) Compare the features of common emitter, common base and common collector configuration.

    b) Using illustrations, explain the operation of all N-channel JFET.

Module – II

14. a) Describe regulated DC power supply with a block diagram.

    b) Explain the working principle of a voltage regulator circuit using a zener diode.

15. a) Draw the circuit of a common emitter amplifier and explain the function of each component in the circuit.

    b) How are power amplifiers classified according to the operating points ?

16. Explain the principle of operation of digital multimeter with block diagram.

Module – III

17. a) Compare amplitude modulation and frequency modulation.

    b) What is meant by interplaced scanning in TV ?

18. With a functional block schematic, explain the principle of pulsed RADAR and Radar range equation.

19. Sketch the block diagram of a microwave link communication. Describe the function of each block.

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