C09–EC–303

3235

BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2013

DECE—THIRD SEMESTER EXAMINATION

ELECTRONIC CIRCUITS—I

Time : 3 hours] [*Total Marks* : 80

PART—A

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Explain the need for filter in power supplies.

2. List different types of IC regulators.

3. Compare between on-line UPS and off-line UPS.

4. What is the need for biasing in amplifiers?

5. Mention the advantages of potential divider method of biasing.

6. Draw the hybrid equivalent of transistor in CE mode.

7. Write the applications of varactor diode.

8. Define *(a)* internal base resistance and *(b)* intrinsic stand-off ratio.

9. What are the different levels of integration?

10. List the applications of digital ICs.

PART—B

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Draw the circuit diagram of centre tapped full-wave rectifier and explain its working with waveform.

12. *(a)* Explain the operation of transistor series voltage regulator. 5

(b) What are the limitations of Zener regulator? 5

13. Draw the circuit of two-stage RC coupled amplifier, explain its working and draw its frequency response curve.

14. *(a)* Describe the operation of emitter follower with the help of diagram. 5

(b) List the advantages of Darlington amplifier and its applications. 5

15. With the help of circuit, describe the working of enhancement MOSFET and draw its drain characteristics.

16. *(a)* Explain the construction of UJT. 5

(b) Explain the working of UJT. 5

17. Draw the basic differential amplifier and explain its working.

18. Discuss how op-amp is used as differentiator and integrator.

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