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C09–EC–303

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BOARD DIPLOMA EXAMINATION, (C–09)

MARCH/APRIL—2014

DECE—THIRD SEMESTER EXAMINATION

ELECTRONIC CIRCUITS—I

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

PART—A 3×10=30

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. State the need for DC power supply for electronic circuits.

2. Compare between half-wave and centre tapped full-wave rectifiers.

3. List the advantages of IC regulators.

4. Why is CE mode commonly used in amplifier circuits?

5. Define h-parameters of a transistor.

6. Explain the need for stabilization.

7. Mention the advantages of FET over BJT.

8. Mention the applications of varactor diode.

9. Classify the ICs.

10. Define *(a)* CMRR, *(b)* input offset voltage and *(c)* input offset current.

PART—B

10×5=50

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. *(a)* Describe the working of CLC filter. 5

(b) Explain the operation of online UPS with the help of diagram. 5

12. Draw the diagram of bridge rectifier and explain its working with waveforms. 10

13. Draw the circuit of self-bias and explain how it provides stabilization and derive the expression for stability factor. 10

14. Draw the circuit of two-stage transformer coupled amplifier and explain its working and draw its frequency response. 10

15. Draw the circuit of n-channel FET and explain its working and draw its drain characteristics. 10

16. *(a)* What are the differences between JFET and MOSFET? 5

(b) List any five applications of UJT. 5

17. *(a)* Compare between discrete and integrated circuits. 5

(b) Explain the fabrication of resistors. 5

18. *(a)* Explain how op-amps work as inverting amplifier. 5

(b) Mention any five ideal op-amps characteristics. 5

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