



C09-EC-303

3235

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2017

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. Draw the block diagram of OFF-line UPS.
2. List different types of filters.
3. Draw the circuit diagram of a half-wave rectifier.
4. Define h parameters of a transistor.
5. State the need for multistage amplifiers.
6. Classify the amplifiers based on period of conduction of collector current.
7. Compare JFET and MOSFET.
8. List the applications of FETs.

- * 9. List the advantages of surface-mount technology (SMT) over pin through hole (PTH) mounting.
10. Classify ICs based on manufacturing process.

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. Draw and explain the working of bridge rectifier with waveforms. 3+5+2
12. (a) Explain the operation of transistor series voltage regulator. 7
 (b) List the types of IC regulators. 3
13. Explain collector to base resistor method of biasing and list its advantages and disadvantages. 6+2+2
14. Explain the principle of operation of two-stage transformer coupled amplifier with circuit diagram and draw its frequency response. 3+5+2
15. Explain the construction and principle of operation of enhancement-type *n*-channel MOSFET. 4+6
16. Explain the construction and principle of operation of *n*-channel JFET, and also draw its drain characteristics. 4+4+2
17. Draw the block diagram of IC 741 and explain each block. 3+7
- * 18. Explain the fabrication of resistor and capacitor on monolithic IC. 5+5
