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.

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9. List the advantages of surface-mount technology (SMT) over pin through hole (PTH) mounting.

10. Classify ICs based on manufacturing process.

<center>**PART—B**   10×5=50</center>

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

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