



C09-EC-303

3235

BOARD DIPLOMA EXAMINATION, (C-09)

OCT / NOV-2015

DECE - THIRD SEMESTER EXAMINATION

ELECTRONIC CIRCUITS – I

Time : 3 hours]

[Total Marks : 80

PART - A

3 X 10 = 30

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

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

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

1. Draw the circuit of full-wave centre-tapped rectifier.
2. Draw the block diagram of on-line UPS.
3. Define voltage regulation.
4. Define gain, frequency response and bandwidth of an amplifier.
5. Explain the need for proper biasing in amplifier circuits.
6. Draw the hybrid equivalent of a transistor in CE mode.
7. Define the parameters of JFET.
8. Draw the equivalent circuit of UJT.
9. List different IC packages.
10. State the advantages of ICs over discrete assembly.

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PART - B

10 × 5 = 50

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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) Compare half-wave, centre-tapped, full-wave and bridge rectifier.
(b) Explain the need for a filter in power supplies and list different types of filters.
12. Derive expressions for RMS value, average value, Ripple factor and efficiency of a half-wave rectifier.
13. Draw the circuit diagram of Darlington pair and explain its working briefly. List any four applications.
14. Explain the selection of operating point on the DC load line with wave forms.
15. Explain the construction and principle of operation of enhancement type of n -channel MOSFET.
16. (a) Explain the principle of operation of CMOSFET.
(b) Explain the principle of working of Varactor Diode and draw its characteristic.
17. Draw the block diagram and the pin out diagram of IC 741 and explain each block and each pin briefly.
18. (a) Draw and explain the differential amplifier circuit.
(b) Draw and explain the Op-Amp Summing Amplifier.

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