



C09-EC-303

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**BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2018
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. State the need for a filter in power supplies.
3. Draw the circuit diagram of a bridge rectifier.
4. Define stability factor and write the expression for stability factor of CE configuration.
5. List different types of coupling mechanism.
6. Classify the amplifiers based on period of conduction of collector current.
7. List the applications of varactor diode.

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8. Draw the ^{*}circuit of common source FET amplifier.
9. List the advantages of ICs over discrete assembly.
10. List different IC packages.

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) Draw the block diagram of regulated DC power supply and explain the function of each block. 3+5=8
 (b) List the advantages of IC regulators. 2
12. Draw and explain the working of half-wave rectifier with waveforms. 3+5+2=10
13. Draw the practical transistor CE amplifier and explain the function of each component. 4+6=10
14. Draw the circuit of Darlington pair and explain its working and application. 4+6=10
15. Explain the principle of operation of CMOSFET. 10
16. Draw and explain the working of UJT with its equivalent circuit. 3+7=10
17. Draw the block diagram of IC 741 operational amplifier and explain each block. 3+7=10
18. Explain the uses of operational amplifier as—
 (a) integrator;
 (b) differentiator. 5+5=10
