



C09-EC-303

3235

**BOARD DIPLOMA EXAMINATION, (C-09)
SEPTEMBER/OCTOBER - 2020
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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is the ripple factor and efficiency of a bridge rectifier?
2. What is UPS? List the types of UPS available.
3. Draw the circuit diagram of +5 V regulator using IC 7805.
4. What are the advantages of Darlington amplifier?
5. Define gain and bandwidth of an amplifier.
6. Define stability factor. What is the general expression for stability factor in CE mode?
7. What are the applications of varactor diode?
8. What are the advantages of JFET over BJT?
9. Draw the pin diagram of IC 741.
10. What are the limitations of ICs?

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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 the circuit diagram of half-wave rectifier with capacitor filter and explain its working.
- 12.** (a) Explain the working of transistor series voltage regulator. 7
(b) Define voltage regulation of a power supply. 3
- 13.** (a) Draw the circuit diagram of RC-coupled amplifier and explain its working. 6
(b) Explain the frequency response of RC-coupled amplifier. 4
- 14.** (a) Explain the principle of operation of direct coupled amplifier with circuit diagram. 7
(b) What are the advantages of self-bias circuit? 3
- 15.** (a) Explain the principle of operation of CMOSFET. 6
(b) Draw the circuit diagram of common source FET amplifier. 4
- 16.** Explain the working of UJT with its equivalent circuit.
- 17.** Describe the fabrication of diode and capacitor on monolithic IC. 5+5=10

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- 18.** Draw the basic differential amplifier and explain its working.
