



C14-EC-302

4238

BOARD DIPLOMA EXAMINATION, (C-14)
SEPTEMBER/OCTOBER - 2020
DECE—THIRD SEMESTER EXAMINATION
ELECTRONIC DEVICES AND CIRCUITS

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. List the merits of JFET over BJT.
2. What is thermal runaway?
3. Classify the amplifiers based on period of conduction.
4. Define frequency response and bandwidth of an amplifier.
5. Classify different types of oscillators.
6. List the advantages of crystal oscillators over other types.
7. List important merits of negative feedback amplifiers.
8. List the applications of varactor diode.

- * 9. Draw the symbols of (a) varactor diode, (b) photo transistor and (c) enhancement type *n*-channel MOSFET.
10. Draw the circuit of transistor shunt voltage regulator.

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. Compare the performance characteristics of CB, CE and CC configurations.
12. Explain the principle of operation of two-stage RC coupled amplifier with circuit diagram and draw its frequency response.
13. Define stability factor and derive an expression for stability factor of CE configuration.
14. Explain the working of an RC phase-shift oscillator with a circuit diagram.
15. Draw the block diagrams of voltage series and current shunt feedback amplifiers.
16. Explain the construction and principle of operation of depletion type *n*-channel MOSFET.
- * 17. Explain the operation and characteristics of photo diode.
18. Explain the operation of transistor astable multivibrator circuit to generate square wave.
