



C-16S-EC-302

5458

BOARD DIPLOMA SUPPLEMENTARY EXAMINATION, (C-16S)
JUNE / JULY - 2020
DECE - III SEMESTER EXAMINATION
ELECTRONIC DEVICES AND CIRCUITS

Time : 2 Hours]

[Total Marks : 80]

PART - A

$6 \times 5 = 30$

Instructions :

- (1) Answer any SIX questions.
- (2) Each question carries FIVE marks.
- (3) Each answer should not exceed more than ONE page.

- 1 Classify the different types of FETs.
- 2 Define pinch-off voltage of JFET.
- 3 List the factors affecting the operating point (Q).
- 4 State thermal runaway.
- 5 List types of negative feedback amplifiers.
- 6 List any three advantages of negative feedback amplifiers.
- 7 What is the need of power amplifier?
- 8 State the necessity of heat sink for a power transistor
- 9 State the requisites of an oscillator.
- 10 List any three applications of L.T.

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PART - B

$10 \times 5 = 50$

Instructions :

- (1) Answer any FIVE questions.
- (2) Each question carries TEN marks.
- (3) Each answer should not exceed more than TWO pages.

- 11 Explain the construction and operation of n-channel JFET.
- 12 Explain the concept of DC load line.
- 13 Draw the block diagram of negative feedback amplifier and derive the expression for its gain.
- 14 Explain voltage series feedback using emitter follower amplifier circuit.
- 15 Explain and draw the Class A power amplifier (With resistive load) with circuit diagram.
- 16 Explain the choice of Class A, Class B, Class AB and Class C power amplifiers.
- 17 Draw and explain the working of transistor crystal oscillator.
- 18 Explain the working principle of varactor diode.