



C14-EC-302

4238

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2016

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. Define stability factor, *S*.
3. Classify amplifiers based on frequency.
4. List any three applications of Darlington pair.
5. List the four types of negative feedback amplifiers.
6. List the distortions occur in power amplifiers.
7. Give reasons for instability in oscillator circuits.
8. List the applications of photo transistor.

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9. List the three important specifications of photovoltaic cells.
10. Draw the transistor shunt voltage regulator circuit.

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 and explain the output characteristics of transistor in CE configuration. Indicate the three regions of operation on the characteristics.
12. Explain the principle of operation of two-stage transformer coupled amplifier with circuit diagram. Draw its frequency response curve.
13. Explain the potential divider method of biasing and state its advantages.
14. Explain the effect of negative feedback on gain, bandwidth, input and output resistances.
15. Explain the working of transistor crystal oscillator with a circuit diagram.
16. Explain the construction and working of enhancement type *n*-channel MOSFET.
17. Explain the construction, operation and characteristics of photo transistor.
18. Explain the use of JFET as current source.

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