



C14-EC-302

4238

BOARD DIPLOMA EXAMINATION, (C-14)
OCT/NOV—2017
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. Why is *N-P-N* transistor more popular than *P-N-P* transistor?

2. Define the operating point.

3. What is the need for biasing in amplifiers?

4. Classify the amplifiers based on frequency.

5. Define positive feedback and negative feedback.

6. What is a class B power amplifier?

7. Explain the condition for an amplifier to work as an oscillator.

- * 8. Distinguish between LED and LCD.
- 9. What is meant by CMOS FET?
- 10. Explain the working of transistor switch driving a relay.

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. Explain the construction and working of JFET.
- 12. Explain the self-bias technique. How is stabilization of operating point achieved in this technique?
- 13. Explain the operation of two-stage RC coupled amplifier with neat circuit and draw its frequency response.
- 14. (a) Show that the gain of feedback amplifier is

$A_f = \frac{A}{1 + A\beta}$	6
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- (b) Why voltage amplifier cannot be used as power amplifier? 4
- 15. (a) Draw the circuit diagram of tuned collector oscillator and explain. 6
- (b) Explain the working of harmonic generator. 4
- 16. Explain the principle of working of varactor diode and draw its characteristics.
- * 17. Explain the principle, construction and working of photodiode.
- 18. Explain the working of transistor series voltage regulator and list its disadvantages.
