



C14-EC-302

4238

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**MARCH/APRIL—2017**  
**DECE—THIRD SEMESTER EXAMINATION**  
**ELECTRONIC DEVICES AND CIRCUITS**

Time : 3 hours ]

[ Total Marks : 80

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**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 any three important applications of transistor.
2. List the factors affecting the  $Q$ -point.
3. Define gain, frequency response and bandwidth of an amplifier.
4. Compare different types of coupling.
5. What are positive feedback and negative feedback?
6. What are the performance measures of power amplifier?
7. Classify oscillator circuits.
8. List the applications of varactor diode.

\* 9. List the applications of photodiode.

10. State the disadvantages of series 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 drain characteristics of *n*-channel JFET.

12. Explain the principle of operation of two-stage RC coupled amplifier with circuit diagram.

13. Classify amplifiers based on frequency, period of conduction and coupling.

14. Compare voltage amplifier and power amplifier. Draw the block diagram of a power amplifier.

15. Explain the working of RC phase-shift oscillator with a circuit diagram.

16. Explain the construction, operation and characteristics of photodiode.

\* 17. Explain the working of optocoupler and its applications.

18. Explain the operation of transistor astable multivibrator circuit to generate square wave.

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