



C14-EC-302

4238

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**MARCH/APRIL—2018**  
**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. Distinguish between BJT and FET.
2. Define stability factor in transistor.
3. Explain the working of Darlington amplifier.
4. Define *h*-parameters of BJT in CE configuration.
5. Distinguish between positive feedback and negative feedback.
6. Compare among different power amplifiers.
7. State the requisites of an oscillator.
8. What is meant by an Opto coupler?

- \* 9. Draw the circuit symbols of (a) photodiode, (b) phototransistor and (c) *n*-channel enhancement MOSFET.
10. Draw the circuit diagram of twilight switch using photodiode or LDR.

**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 input and output characteristics of transistor in CB mode.
12. Draw the practical transistor CE amplifier and explain the function of each component.
13. Explain the working of transformer coupled amplifier. Also draw and explain the frequency response of transformer coupled amplifier.
14. Draw the circuit diagram of complementary symmetry push-pull amplifier and explain its operation. Also list its advantages and disadvantages.
15. (a) Draw the circuit diagram of Hartley oscillator and explain. 5  
(b) Draw the circuit diagram of Colpitts oscillator and explain. 5
16. Explain the principle of working of LED along with its characteristics.
- \* 17. Explain the working of depletion-type MOSFET along with characteristics.
18. Explain the working of transistor astable multivibrator.

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