



C20-EE-405

**7448**

**BOARD DIPLOMA EXAMINATION, (C-20)  
OCTOBER/NOVEMBER—2023  
DEEE – FOURTH SEMESTER EXAMINATION  
ELECTRONICS ENGINEERING**

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. Draw the circuit symbols of (a) LED, (b) LDR and (c) photo diode.
2. Draw the VI characteristics of Zener diode.
3. State the need of filters in power supplies.
4. Define rectifier.
5. Define the terms (a) feedback and (b) feedback factor.
6. Classify the amplifiers according to the (a) function and (b) type of load.
7. State the need of AF oscillator.
8. List the applications of oscillators.
9. State the concept of virtual ground.
10. List the characteristics of an ideal operational amplifier.

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **eight** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** (a) Draw the input and output characteristics of a transistor in CB, CE and CC configurations and compare their performance characteristics.

**(OR)**

- (b) Explain the working and VI characteristics of photo transistor.

- 12.** (a) Explain the working of bridge rectifier with circuit diagram and waveforms.

**(OR)**

- (b) Explain the working of Zener diode as a voltage regulator in a power supply.

- 13.** (a) Draw the block diagram and explain the working of voltage series, voltage shunt, current series and current shunt feedback amplifiers.

**(OR)**

- (b) Draw and explain the circuit of RC coupled amplifier and draw its frequency response.

- 14.** (a) Explain the working of Hartley oscillator with the help of a circuit diagram.

**(OR)**

- (b) Explain the working of transistor based astable multivibrator circuit.

- 15.** (a) Explain the working of op-amp inverting amplifier with a circuit diagram.

**(OR)**

- (b) Draw the pin diagram of IC 555 timer and state its specifications and function of each pin.

**PART—C**

10×1=10

- Instructions :** (1) Answer the following question.  
(2) The question carries **ten** marks.  
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 16.** List different biasing methods of a transistor and explain the potential divider bias circuit.

★★★