

7448

BOARD DIPLOMA EXAMINATION, (C-20)

MAY—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. State different configurations of transistors.
2. Draw the circuit symbols of P-N junction diode, P-N-P, N-P-N transistors.
3. List the different types of filters used in power supplies.
4. List the applications of amplifiers.
- \* 5. Define the terms (a) gain and (b) bandwidth.
6. State the necessity of proper biasing in transistor amplifier.
7. State the conditions required for sustained oscillations.
8. Classify different types of oscillators.
9. What are the advantages of integrated circuits over discrete circuits?
- \* 10. Define integrated circuit.

- 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) Explain the working of PN junction diode with no bias, forward bias and reverse bias. 8

**(OR)**

- (b) (i) Explain formation of PNP and NPN transistors. 5

- (ii) List the applications of LED. 3

- 12.** (a) Explain the working of center-tapped full-wave rectifier with circuit diagram and waveforms.

**(OR)**

- (b) State the need of voltage regulation in regulated power supplies. Explain working of Zener voltage regulator.

- 13.** (a) Explain the operation of transistor as an amplifier.

**(OR)**

- (b) Explain the working and draw the circuit of transformer coupled amplifier and its frequency response curve.

\*

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

**(OR)**

- (b) Explain the working of Colpitts oscillator with a circuit diagram.

- 15.** (a) Explain the working of operational amplifier as (i) integrator and (ii) differentiator.

**(OR)**

- (b) Draw the pin diagram of 741 IC 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.** Explain the working of (i) current series and (ii) current-shunt feedback amplifiers with relevant block diagrams.

★★★

\*

\*