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BOARD DIPLOMA EXAMINATION, (C-14)  
MARCH/APRIL—2021  
DEEE - THIRD SEMESTER EXAMINATION  
ELECTRONICS - I

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

4×5=20

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **four** marks.  
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. State the properties of resistance.
2. Define (a) self-inductance and (b) mutual inductance.
3. Write two differences between P-type and N-type semiconductors.
4. Explain the need of filter circuit in a regulated power supply.
5. Define (a) ripple factor and (b) regulation.
6. Draw the symbols of (a) photodiode and (b) photo-transistor.
7. List the applications of UJT.
8. List the different Biasing methods of transistor.
9. List the applications of amplifiers.
10. State the necessity of coupling.

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## PART—B

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

- 11.** (a) Describe the different losses in inductors and transformers. 10  
(b) Write a short note on mutual inductance. 5
- 12.** Draw the output characteristics of transistor connected in CE configuration. Mark different regions on the characteristics and explain them. 15
- 13.** Explain the working of full-wave rectifier with circuit diagram and waveforms. 15
- 14.** (a) Compare between FER and BJT. 5  
(b) Explain the construction and working of FET. 10
- 15.** Draw the two transistor analogy of SCR and explain its working. Draw its V-I characteristics. 15
- 16.** Draw a practical transistor amplifier circuit and explain the function of each component. 15
- 17.** Draw the circuit of transformer coupled CE amplifier and explain its working. Draw its frequency response. 15
- 18.** (a) Give the classification of amplifiers. 10  
(b) Compare different types of coupled amplifiers. 5

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