



C09-EC-105

3031

BOARD DIPLOMA EXAMINATION, (C-09)

SEPTEMBER/OCTOBER - 2020

DECE—FIRST YEAR EXAMINATION

BASIC ELECTRONICS

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.
(4) Assume suitable data.

1. State Ohm's law. 3
2. Compare the features of carbon and wire-wound potentiometers. 3
3. Define dielectric strength and dielectric constant of a material. 3
4. List any three advantages of PCB. 1+1+1=3
5. State the necessity of a baffle for a loudspeaker. 3
6. Sketch the characteristics of Zener diode. 3
7. Distinguish between *p*-type and *n*-type semiconductors. 3
8. Define alpha and beta of a transistor. 3

- * 9. List any three applications of transformers. 3
10. What is the necessity of a starter for DC motor? 3

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.
 (4) Assume suitable data.

11. (a) State and explain Coulomb's laws of electrostatics. 6
 (b) Describe the working of rheostat. 4
12. (a) Find the equivalent capacitance of capacitors connected in series. 6
 (b) Define self and mutual inductance. 4
13. What is relay? Explain the performance characteristics of relay. 10
14. Explain the working of carbon microphone with a neat sketch. 10
15. Explain the working of *P-N* junction diode with different biasing voltages and draw its *V-I* characteristics. 10
16. Explain the working of a *P-N-P* transistor. 10
- * 17. Distinguish between lead-acid battery and nickel-iron battery. 10
18. (a) Explain the working principle of DC generator. 6
 (b) List any four applications of stepper motors. 4
