3031

BOARD DIPLOMA EXAMINATION, (C-09)

JUNE—2019

DECE—FIRST YEAR EXAMINATION

BASIC ELECTRONICS

Time : 3 Hours]   [*Total Marks* : 80

PART—A   3×10=30

Instruction **:** (1) Answer **all** questions.

(2) Each question carries **Three** marks.

1. Define the following :

(a) Absolute permittivity

(b) Relative permittivity

2. Define Ohm's law.

3. Define mutual inductance and coefficient of coupling.

4. Draw the ISI symbols of *(a)* SPDT *(b)* DPDT *(c)* DPST switches.

5. Distinguish between intrinsic and extrinsic semiconductors.

6. Draw the energy band diagrams of

(a) Insulator

(b) Semiconductor

(c) Conductor

7. Define alpha and beta of a transistor.

8. Write any three applications of transformers.

9. What are the various losses in a DC machine?

10. State the necessity of Baffle for a loud speaker.

PART—B   10×5=50

Instruction :   (1)   Answer any **five** questions.

(2)   Each question carries **Ten** marks.

(3)   Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

11.   Explain colour coding of resistors with an example.   10

12.   *(a)*   Derive an expression for the equivalent capacitance when two capacitors are connected in series.   6

(b)   What are the factors affecting the capacitance of a capacitor?   4

13.   *(a)*   List the various steps involved in PCB preparation.   6

(b)   List any four types of laminates used in PCBs.   4

14.   Explain the construction and working of carbon microphone with a neat sketch.   10

15.   *(a)*   Distinguish between Zener breakdown and Avalanche breakdown.   4

(b)   Draw and V-I characteristics of PN junction diode.   6

16.   *(a)*   Explain the working of NPN transistor.   6

(b)   Draw the input and output characteristics of transistor in CB configuraiton.   4

17.   Explain the working priciple of DC generator.   10

18.   Explain the working principle of transformer and derive its emf equation.   10

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