6012

BOARD DIPLOMA EXAMINATION, (C-16)

AUGUST/SEPTEMBER—2021

DAEI - FIRST YEAR EXAMINATION

ELECTRONIC COMPONENTS AND DEVICES

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 the factors affecting the resistance value of resistors.

2. Define dielectric constant of a material.

3. Draw the symbols of iron core, air core and ferrite core inductors.

4. Define switch.

5. List the different types of microphones.

6. Distinguish between intrinsic and extrinsic semiconductors.

7. List any three specifications of diode.

8. Draw the symbol of NPN transistor.

9. List any three specifications of PCBs.

10. Define voltage regulation.

PART—B

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

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

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

11. *(a)* Find the equivalent resistance when two resistors are connected in parallel. 6

(b) Mention the need for tapering in potentiometers. 4

12. *(a)* State the properties and applications of paper capacitors. 5

(b) List the various types of capacitors and mention their applications. 5

13. Find the equivalent inductance when two inductors are connected in series aiding connection. 10

14. Explain the working of toggle switch and write its application. 10

15. *(a)* Explain the principle of operation of PMMC loudspeakers. 5

(b) List the steps involved in making of double sided PCBs. 5

16. Describe the formation of P-type semiconductor with energy band diagram. 10

17. *(a)* Write collector current (I_C) in CB and CE mode of transistors in terms of α, β, I_B, I_C, I_{CBO}, I_{CEO}. 6

(b) Draw the circuit diagram of CE configuration. 4

18. Describe bridge rectifier circuit with waveform. 10

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