C16–EC–**105**

# 6032

**BOARD DIPLOMA EXAMINATION, (C–16)**

**OCT/NOV—2018**

**DECE—FIRST YEAR EXAMINATION**

ELECTRONIC DEVICES AND POWER SUPPLIES

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

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**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.** Define the term resistance.

**2.** List the specifications of inductor.

**3.** Define the terms dielectric strength and dielectric constant.

**4.** List different types of fuse.

**5.** List the materials used in screen printing for making PCB.

**6.** Sketch the energy band diagrams for conductor, semiconductor and insulator materials.

**7.** Sketch the *V-I* characteristics of a *P-N* diode.

8. Sketch the input characteristics of CB configuration.

9. Draw the drain characteristics of MOSFET (*n*-channel).

10. Define voltage regulation.

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**PART—B** 10×5=50

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***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.

11. *(a)* Define temperature coefficient of resistance. 3

*(b)* Describe the working of thermistor and sensitor and state their applications. 7

12. Describe the methods of etching, cleaning and drilling of PCB.

13. *(a)* Compare among conductor, semiconductor and insulators. 5

*(b)* Explain valance, conduction and forbidden bands. 5

14. *(a)* Explain the formation of *p-n* junction diode. 5

*(b)* Describe the working of *p-n* junction diode with forward and reverse bias. 5

15. *(a)* Write the collector current expression in CE and CB mode of a transistor in terms of , $, I_B, I_E, I_C, I_{CBO}$ and $I_{CEO}$. 5

*(b)* Compare the performance characteristics of CB, CE and CC configurations. 5

16. *(a)* Distinguish between avalanche and Zener breakdown. 5

*(b)* Define and . Give the relationship between them. 5

17. Explain the construction and working principle of depletion type of *n*-channel MOSFET. 5+5=10

18. *(a)* Describe the working of bridge rectifier circuit with input and output waveforms. 8

*(b)* Explain the need for a filter circuit in power supplies. 2

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