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C16–EC–105

6032

BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

DECE—FIRST YEAR EXAMINATION

ELECTRONIC DEVICES AND POWER SUPPLIES

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. Find the color code for the resistance of 2·2 kilo ohms with 5% tolerance.

2. List the applications of capacitors.

3. Classify the types of inductors.

4. Sketch the ISI symbols of SPST, SPDT, DPDT and DPST switches.

5. What are the advantages of PCBS?

6. Distinguish between *N*-type and *P*-type semiconductors.

7. Sketch the *V-I* characters of Zener diode.

8. Draw the circuits for three transistor configurations.

9. Give the symbols for the following :

(a) *P*-channel JFET

(b) *N*-channel JFET

(c) *P*-channel MOSFET

10. Draw the circuit of half-wave rectifier with input and output waveforms.

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.

11. *(a)* Classify the resistors. 4

(b) With neat sketch, describe the working of rheostat, and state its applications. 6

12. *(a)* List the steps involved in screen-printing in making PCBS. 5

(b) Explain surface mount technology (SMT) and list its uses. 5

13. *(a)* Distinguish between intrinsic semiconductor and extrinsic semiconductor. 4

(b) Distinguish among conductors, semiconductors and insulators. 6

14. *(a)* List the applications of diode. 4

(b) Explain potential barrier of *P-N* junction diode using energy band diagram. 6

15. *(a)* List the specifications of *P-N* junction diode and state their importance. 5

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

16. Sketch the input and output characteristics of CE configuration and indicate the active, saturation and cutoff regions. 10

17. With neat sketch, explain the construction and working of depletion type *n*-channel MOSFET. 10

18. *(a)* Draw and describe the working of full-wave bridge rectifier with input and output waveforms. 8

(b) Draw the circuit of simple Zener voltage regulator. 2

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