



C14-EC-106

4039

**BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2018
DECE-FIRST YEAR EXAMINATION**

**ELECTRONIC ENGINEERING
MATERIALS & PRACTICES**

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. Sketch the energy band diagrams of conductors, insulators and semiconductors.
2. Define the terms 'toughness' and 'fatigue'.
3. Write any three applications of PVC.
4. Define the Curie point.
5. Define an alloy. Give examples.
6. List out the types of hammers.
7. What are the precautions to be taken in handling and maintenance of files?
8. Define bracing and welding.
9. List out heat treatment processes.
10. State the need of electrical earthing.

PART—B

10×5=50

- * **Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criteria for evaluation is the content but not the length of the answer.

- 11.** (a) Explain the effect of impurities on the resistance of conductors. 6
(b) Classify the conducting materials based on their resistivity. 4
- 12.** Explain the following insulating materials:
(a) Mica
(b) Ceramic 5+5
- 13.** (a) Distinguish between soft and hard magnetic materials. 6
(b) State the factors affecting the hysteresis loss. 4
- 14.** Mention the applications of (a) neodymium magnets, (b) silicone rubber and (c) nanomaterials. 3+3+4
- 15.** Explain the following hand tools used in electronic workshop with neat diagrams:
(a) Hacksaw
(b) Screwdriver 5+5
- 16.** (a) State the different types of soldering joints used for joining electrical conductors. 5
(b) Write a short note on metals and their mix ratios used in producing solder alloys. 5
- * **17.** What is hardening? Explain the process of hardening. 10
- 18.** Explain the method of first aid treatment for the person suffering from electric shock. 10

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