



2018 III 08

1000

Seat No. :

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Time : 2 Hours

**ELECTRONICS MATERIALS AND WORKSHOP PRACTICE**  
**(New Pattern)**

**Subject Code**

V	3	3	2
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**Total No. of Questions : 5**

**(Printed Pages : 3)**

**Maximum Marks : 50**

- INSTRUCTIONS:**
- Answer **each** question on a **fresh** page.
  - Write the number of the question and sub-question **clearly**.
  - All** questions are **compulsory**.
  - Figures to the **right** indicate **full** marks.
  - Draw neat labelled diagrams **wherever** necessary.

1. A) Fill in the blanks : [2]

- The residual flux density on the hysteresis loop is called as \_\_\_\_\_
- The type of varnish used to prepare laminations of mica and glass is \_\_\_\_\_

B) Answer the following : [6]

- State **any two** applications of the following conducting materials :
  - Nichrome
  - Copper
  - Carbon
- Draw neat labelled Energy Band Diagrams for conductors, semiconductors and insulators.

C) Answer the following : [2]

Draw a neat labelled diagram of mechanically biased Dry Reed Relay and state its two applications.

2. A) Define the following terms : [2]

- Breakdown voltage
- Dielectric strength.



B) Answer the following : [6]

- i) Draw a neat diagram of hysteresis loop and explain the terms hysteresis loss and magnetostriction.
- ii) State **any one** application of each of the following tools :
  - a) Standard Screw Driver
  - b) Firmer Chisel
  - c) Adjustable Wrench
  - d) Long Nose Plier
  - e) Tennon Saw
  - f) Ball Peen Hammer.

C) Answer the following : [2]

Draw a neat labelled diagram of General Purpose Relay.

3. A) Fill in the blanks : [2]

- i) The cutting tool used for filing corners having angles less than  $90^\circ$  is \_\_\_\_\_
- ii) The magnetic material used for manufacturing current transformers is \_\_\_\_\_

B) Answer the following : [3]

State **any three** applications of the following semiconductor materials :

- a) Silicon
- b) Germanium.

C) Answer **any one** of the following in detail : [5]

- i) With the help of a neat labelled diagram explain the Horizontal Bridgman method of semiconductor crystal growth and purification.

OR

- ii) With the help of a neat labelled diagram explain the Liquid Phase Epitaxy method of crystal growth and purification of semiconductor crystal.

4. A) Answer the following in brief : [2]

- i) Name the high resistivity material that is used to manufacture photoelectric cells, safety devices and light meters.
- ii) What is a lubricant ?



B) Answer the following : [3]

With the help of neat labelled diagrams explain any two types of Mass Soldering Techniques.

C) Answer **any one** of the following in detail : [5]

i) State any ten points of necessary arrangement for upkeeping of Assembly Shop.

OR

ii) State any ten points of personal safety precautions of Assembly Shop.

5. Answer the following : (5×2=10)

i) State any two advantages and disadvantages of Phenolic Laminates.

ii) State any four applications of PVC.

iii) Explain the construction of Bimetallic Relay.

iv) State any four advantages of PCB.

v) Write any four steps of overhauling of an appliance or a motor.

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