

- Q.27 Explain the constructional detail of surface mounted devices.
- Q.28 What is switch? Name the different types of switches.
- Q.29 Write an expression for energy stored in a capacitor.
- Q.30 Explain carbon film and wire wound resistor.
- Q.31 Write any 5 applications of Bimetals.
- Q.32 Explain about superconductivity materials.
- Q.33 Describe the testing method of transistors.
- Q.34 Explain the various Processes in IC manufacturing.
- Q.35 Classify the types of capacitors with their constructional detail.

#### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain the classification of conducting materials as low resistivity and high resistivity materials.
- Q.37 Explain the difference between Diamagnetic, Paramagnetic and Ferromagnetic materials in detail.
- Q.38 Write the characteristics and applications of the following materials:
- Silver
  - Glass

No. of Printed Pages : 4

121532/031032

Roll No. ....

**3rd Sem / Eltx, EI, IC, Med. Eltx, Comp, Power Eltx, Elect& Eltx. Engg.**

**Subject:- Electrical and Electronics Materials and Components / ECM**

Time : 3Hrs.

M.M. : 100

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Why the copper material is choice for electrical wires?
- Copper is an excellent electrical conductor
  - Poor electrical conductors
  - Insulators
  - Superconductors
- Q.2 The energy gap is largest in \_\_\_\_\_
- Conductors
  - Semi-conductors
  - Insulator
  - Superconductor
- Q.3 Example of high resistivity material is \_\_\_\_\_
- Copper
  - Gold
  - Aluminum
  - Carbon
- Q.4 Which material is used for the manufacture of ground wire?
- Aluminum
  - Galvanised steel
  - Cast iron
  - Stainless steel

- Q.5 How should the properties of strength and dielectric strength in insulating materials?
- High strength, high Dielectric strength
  - Low strength, low Dielectric strength
  - High strength, low Dielectric strength
  - Low strength, high dielectric strength
- Q6 Wire Wound Resistors are used for Applications \_\_\_\_\_.
- High Current
  - Low Resistance
  - Desired (Appreciable) Power
  - All of the above
- Q.7 The simplest kind of capacitor is \_\_\_\_\_
- Ceramic capacitor
  - Electrolyte capacitor
  - Tuning capacitor
  - Paper capacitor
- Q8 The inductors are used in \_\_\_\_\_
- Motors
  - Transformers
  - High power applications
  - All of the above
- Q.9 An step-up transformer increases \_\_\_\_\_
- Current
  - Frequency
  - Voltage
  - Power
- Q.10 What is the main component of a relay?
- contacts
  - coil
  - diode
  - capacitor

(2)

121532/031032

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Aluminum has high conductivity than Copper. (True/False)
- Q.12 What is the unit of Resistance?
- Q.13 Transformer works on the principle of \_\_\_\_\_.
- Q.14 Define Relay.
- Q.15 Expand SMD
- Q.16 Draw the symbol of inductor.
- Q.17 Write the full form of SCR
- Q.18 List two examples of conductors.
- Q.19 A device that breaks the circuit is called \_\_\_\_\_.
- Q.20 The main constituent of paper is \_\_\_\_\_.

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Differentiate between conductor, semiconductor, and insulator.
- Q.22 What are the factors affecting resistance of a conducting material.
- Q.23 Write any 5 applications of copper material.
- Q.24 Write a short note on soft magnetic materials.
- Q.25 Write a short note on thermocouple.
- Q.26 Explain the working of transformer.

(3)

121532/031032