

Total No. of printed pages = 3

CAI-405/EC&M/4th Sem/2017/M

**ELECTRONIC COMPONENTS
AND MATERIALS**

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks
for the questions.

Answer any *five* questions.

1. (a) What are the extrinsic factors affecting the resistivity of a material ? 5
- (b) Write the properties and applications of the alloys and metals - 9
Nichrome, Constantan, Nickel, Copper.
2. (a) Explain the construction of a paper capacitor. 6
- (b) Write the general comparison of carbon film, metal / alloy film and metal oxide resistors. 8

[Turn over

3. (a) What is self inductance and mutual inductance ? 4
- (b) How a transformer can be constructed using inductors ? 4
- (c) What are the different types of core losses ? Explain each. 6
4. (a) How an integrated circuit can be classified ? 8
- (b) Explain different packaging techniques of an integrated circuit. 6
5. (a) What is dielectric strength and dielectric constant ? 4
- (b) Write any four insulating materials. Also write their applications. 6
- (c) Why "dielectric" term is used for an insulator ? 4
6. (a) What are ceramic materials ? Write the name of any two ceramic materials. 3
- (b) Differentiate between hard magnet and soft magnet. 4

(c) What is electromagnetic shielding? Explain any one method of electromagnetic shielding. 7

7. Write short notes on : 7×2=14

(a) Thermistor

(b) LDR