

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

ELECTRICAL ENGINEERING MATERIALS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Name any two materials used for heavy duty contacts.
2. What are the advantages of ACSR ?
3. What do you mean by photovoltaic cells ?
4. Write any two advantages of SF₆.
5. What do you mean by magnetostriction ?

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. What are the properties of Eureka ?
2. Write the properties of Mercury.
3. What are the advantages of semiconductor materials ?
4. Explain the working of strain gauge.
5. What are the advantages of alloying silicon to steel ?
6. What are the essential properties of transformer oil ?
7. Describe the properties and drawbacks of mica.

(5×6 = 30)

PART — C

Marks

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Briefly describe the mechanical properties of conducting materials. 8
 (b) What are the essential properties of fuse materials ? 7

OR

- IV (a) Briefly describe the properties and use of tungsten. 8
 (b) Give the constructional details and application of wire-wound resistors. 7

UNIT — II

- V (a) Explain p-n junction with forward biasing. 8
 (b) State the properties of Germanium and Silicon diodes. 7

OR

- VI (a) Describe intrinsic and extrinsic semiconductors. 8
 (b) Explain the formation of n-type semi conductors. 7

UNIT — III

- VII (a) Define the terms :
 (i) Permeability (iii) Curie point
 (ii) Flux density (iv) Reluctance 8
 (b) Write brief note on CRGO. 7

OR

- VIII (a) Briefly describe the different types of transformers used in electronic circuits. 8
 (b) List the difference between soft magnetic materials and hard magnetic materials. 7

UNIT — IV

- IX (a) What are the chemical properties of insulating materials ? 8
 (b) Describe the properties and applications of glass. 7

OR

- X (a) Briefly describe the different types of gases used as insulators. 8
 (b) Describe the features and applications of ceramics. 7
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