

TED (15) – 5091
(REVISION — 2015)

Reg. No.

Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

FIBRES AND COMPOSITES

[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. Jute, linen and other related fibres are called Bast fibres. Give reason.
2. State two raw materials for carbon fibre.
3. List two advantages of composites.
4. Define pultrusion.
5. Define Sericulture.

(5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Describe the chemical composition and properties of Cotton fibre.
2. Distinguish Dacron and terylene of polyester fibre. Mention their raw materials.
3. Classify the composites based on polymer matrix and explain them.
4. Explain Filament winding and list its four applications.
5. Explain the properties and applications of Asbestos fibre.
6. List the properties and uses of Cellulose acetate fibre.
7. Describe the different steps in the curing of polyester resin.

(5 × 6 = 30)

PART — C

(Maximum marks : 60)

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

UNIT — I

- III (a) Explain the source, processing, properties and applications of Linen fibre. 8
(b) Explain the sequence of processes for the manufacture of Wool fibre. 7

OR

- IV (a) Classify fibres into vegetable, animal, mineral fibres and man made fibres with examples. 8
(b) Describe the filature operations in the manufacture of silk fibre. 7

UNIT — II

- V (a) Explain the melt spinning process with reference to manufacture of Nylon-6 fibre. 8
(b) Explain the manufacture, properties and applications of Aramid fibre. 7

OR

- VI (a) Explain the manufacture, properties and applications of carbon fiber. 7
(b) Explain the manufacture, properties and applications of Viscose rayon. 8

UNIT — III

- VII (a) Describe the manufacture and curing of epoxy resin. 7
(b) List the components of UP resin and explain their functions with examples. 8

OR

- VIII (a) Explain the function and performance characteristics of various additives used in composites. 8
(b) Describe the manufacturing and curing of Novolak resin. 7

UNIT — IV

- IX (a) Explain the resin selection, reinforcement and manufacturing process of Helmet. 8
(b) Explain the materials used for mould making with their advantages and disadvantages. 7

OR

- X (a) Explain the Spray up process with its advantages and disadvantages. 8
(b) Explain the principle and procedure of Reinforced reaction injection moulding. 7