TED (15) – 1252

(REVISION — 2015)

Reg. No.....

Signature .....

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

FOUNDATIONS IN SCIENCE AND TECHNOLOGY

[*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. What is persistent pollutant ?
2. What is meant by hypothesis ?
3. Explain the terms Law and Model.
4. Explain fundamental and derived units.
5. Distinguish between nuclear fission and nuclear fusion. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. What is pollution ? Explain acid rain and it's consequences.
2. Explain inductive and deductive logic.
3. Explain individuals in an ecosystem.
4. Define S.I units. What are the advantages of S.I units over other systems ?
5. Explain radiation hazards and it's consequences.
6. Explain isotopes and isobars with examples.
7. (a) State equation of motion for uniformily accelerated bodies.

   (b) A particle start from rest and moves 400 m with acceleration 2 m/s^2. Find out time taken by it ? (5×6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III Explain the nature of scientific knowledge. 15

OR

IV Explain the steps in scientific method. 15

UNIT — II

V (a) Explain Nitrogen cycle. 10

(b) Explain the steps to control pollution. 5

OR

VI (a) Explain Bhopal and Chernobyl disasters. 10

(b) Explain photochemical smog and it's consequences. 5

UNIT — III

VII (a) Explain motion under gravity and 'g'. 6

(b) A body is projected vertically up with a velocity 30 m/s. After 3 seconds, another body is projected up from the same place with velocity 23 m/s. When and where they will meet ? 6

(c) Define speed, velocity and acceleration. 3

OR

VIII (a) State Newton's laws of motion. 3

(b) Explain law of conservation of momentum. 6

(c) Explain recoil of gun with law of conservation of momentum. 6

UNIT — IV

IX (a) Define radioactivity. 3

(b) Explain characteristics of α, β and γ particles. 6

(c) Explain structure of nucleus. 6

OR

X (a) Explain nuclear energy. 3

(b) Explain the principle behind atom bomb and hydrogen bomb. 6

(c) Explain nuclear holocaust. 6