TED (15) – 4034 Reg. No. .....

(REVISION — 2015) Signature .....

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

ELECTRICAL POWER GENERATION, TRANSMISSION AND DISTRIBUTION

[*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. List the main components of a Nuclear power station.
2. Define :
   (a) Load factor (b) Demand factor
3. State the difference between base load and peak load.
4. Define Transmission Efficiency.
5. Define :
   (a) Feeders (b) Distributors (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain low, medium and high head Hydroelectric power station.
2. Draw the layout of a thermal power station.
3. The annual peak load on a 30 MW power station is 25 MW. The power station supplies loads having M.D's of 10 MW, 8.5 MW, 5 MW and 4.5 MW. The annual load factor is 45%. Find (a) average load (b) energy supplied per year (c) demand factor.
4. Write the advantages of combined working of power plants.
5. Explain :
   (a) Short transmission
   (b) Medium transmission
   (c) Long transmission
6. Draw and explain Radial system and Ring system of distribution.
7. Explain the general construction of cable with a suitable diagram. (5×6 = 30)

[75] [P.T.O.

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) Explain the layout and working of a Hydroelectric Power station with suitable diagram. 10

(b) List the points to be considered for the selection of site for a Hydroelectric Power station. 5

OR

IV (a) Explain the working of nuclear power station with the help of a neat layout. 9

(b) Explain the following.

(i) Moderator (ii) Reactor Coolant (3 + 3)

UNIT — II

V (a) Explain the different types of tariff. 9

(b) Write down the factors influencing tariff design. 6

OR

VI (a) A factory has a maximum load of 300 kW at 0.72 power factor with an annual consumption of 40,000 kWh, the tariff is ₹ 4.50 per KVA of MD plus 2 paisa/kWh. Find out the average price per kWh. What will be the annual saving, if the p.f be improved to unity. 9

(b) Explain fixed cost, running cost and per unit cost. 6

UNIT — III

VII (a) Write the advantages of a DC transmission system. 8

(b) Define sag. What are the factors causing sag ? 7

OR

VIII (a) Explain corona, Ferranti and skin effect. 9

(b) Derive an expression for sag when supports are at equal levels. 6

UNIT — IV

IX (a) Explain different methods in which a cable can be laid. 9

(b) Draw the layout of distribution system showing the major part. 6

OR

X (a) State String efficiency. Generate the causes of failure of insulators. 8

(b) Write down the requirement of a good insulator. 7
