TED (10) – 4035

(REVISION — 2010)

Reg. No.....

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

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. State the use of condenser in Thermal Power Station.
2. Define diversity factor.
3. Define voltage regulation of a transmission line system.
4. Write any two disadvantages of DC transmission.
5. State the use of arcing horn. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Draw the Labelled schematic diagram of a Diesel power plant.
2. Explain the usage of surge tank in a hydro electric power plant with a neat sketch.
3. A generating station has a connected load of 43 MW and a maximum demand of 20 MW. The units generated being 61.5×10^6 per annum. Calculate the demand factor and load factor.
4. Describe the desirable characteristic of a Tariff.
5. Explain the construction of a 3 core UG cable with neat sketch.
6. Compare Over head line and Under ground transmission system.
7. Mention the advantages and disadvantages of Under Ground System. (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 (a) Draw a labelled schematic diagram of a nuclear power plant and explain the function of moderator in Nuclear reactor. 8

(b) Explain the factors to be considered for the site selection of hydro electric power station. 7

OR

IV (a) Draw a labelled schematic diagram of a steam power plant. 8

(b) Mention the factors to be considered for the sight selection of a nuclear Power station. 7

UNIT — II

V (a) Define the following :

(i) Connected load (iii) Average Load

(ii) Demand factor (iv) Load factor 8

(b) Explain the difference between fixed cost and running cost in generating station. 7

OR

VI (a) Define a tariff. Explain different types of tariff used in electrical power system. 8

(b) Draw daily load curve of a power station and mention its importance. 7

UNIT — III

VII (a) Explain the construction of 3 core SL type and 3 core H type under ground cable with sectional views. 8

(b) Explain factors effecting corona. 7

OR

VIII (a) Explain about methods of Laying of under ground cables. 8

(b) List out important characteristics of insulating material used in under ground cable. 7

UNIT — IV

IX (a) A 110KV transmission line has the following data :
Weight of conductor = 680kg/km; Length of Span = 260m.
Working tension = 1550kg.
Calculate the height above ground at which the conductor should be supported. Ground clearance required is 10 meters. 8

(b) Explain with necessary sketches about the types of insulators used in overhead transmission and distribution lines. 7

OR

X (a) A transmission line has a span of 150m between supports. The conductor has a cross sectional area of $2cm^2$. If the tension in conductor is 2000kg, specific gravity of conductor is 9.9gm per cm^3 and wind pressure is 1.5 kg/m. Calculate the sag. 8

(b) State the advantages of high voltage AC transmission system. 7