313333

12526

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answer with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **10**

a) Name any two hydro-plants in Maharashtra with their capacity.

b) State any two advantages of thermal power plant.

c) Define the following terms :–

i) Cold reserve

ii) Spinning reserve.

d) Define Maximum Demand and Demand Factor.

e) State the skin effect of transmission line. Where this effect occurs?

f) Give the classification of transmission line based on voltage.

g) State four HVDC transmission line route on India with their voltage level.

P.T.O.

Marks

5. Attempt any TWO of the following: **12**

a) Draw a neat labelled layout of thermal power plant and explain the function of coal and ash handling plant.

b) The load generating station charges as recorded in the following table during 24 hours of a day :–

Time (Hours)	0-6	6-10	10-16	16-20	20-24
Load (MW)	40	80	60	70	60

Draw the daily load curve and load duration curve.

c) In medium transmission line, for nominal T method, show the derivation for sending end voltage with the help of neat phasor diagram.

6. Attempt any TWO of the following: **12**

a) Describe the specific safe practices to be followed with respect to hydro power plants.

b) Compare nominal 'T' and nominal "pi" method of medium transmission line. (Any six points)

c) Describe ring main system of distribution with diagram. Also state any two advantages of ring distribution load.

Marks

2. Attempt any THREE of the following: **12**

a) State the factors governing the selection of site for thermal power plant.

b) Draw a neat sketch of Bipolar HVDC transmission system. State any two merits of the same.

c) Explain the phenomenon of Corona. State how Corona effect can be reduced?

d) Classify distribution substation on basis of –

i) Service requirement

ii) Constructional feature.

3. Attempt any THREE of the following: **12**

a) Compare primary transmission and secondary transmission line on the basis of :–

i) Portion of transmission line

ii) Height of tower

iii) Loading point

iv) Installation of PLCC.

b) Explain the features of wireless transmission of electrical power.

c) Draw the single line diagram (layout) of 33/11 kV substation.

d) Explain with diagram radial type distribution system.

4. Attempt any THREE of the following: **12**

a) Draw the layout of a hydro-electric power plant and also state the function of reservoir and surge tank.

b) Draw and explain load duration curve used in power system operation.

c) Draw a neat sketch of pin insulator. State any two causes of failure with its limitations.

d) Explain the Ferranti effect state when it occurs.

e) Draw and explain construction of underground cable.