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12223

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
- (2) Illustrate your answer with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data, if necessary.
- (5) 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) Enlist various types of support used for transmission and distribution.
- b) State advantages of using high voltage for transmission system.
- c) State the effect of inductance on performance of transmission line.
- d) State the necessity and importance of EHV transmission.
- e) State the highest EHVAC line in India.
- f) List out the components of distribution system.
- g) Draw a general layout key diagram of primary distribution system.

P.T.O.





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

12

- a) Draw block diagram of power system. State the function of each block.
- b) Draw figure for transposition of conductor. List out advantages of transposition.
- c) Explain the phenomenon of Corona. State how Corona effect can be reduced?
- d) Define a sag in overhead line and state any four significance of sag.

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

12

- a) Give the comparison between primary transmission and secondary transmission line.
- b) State the condition under which Ferranti effect occurs. Describe Ferranti effect.
- c) List out the components of distribution system, also state function of each.
- d) State any eight requirements of line supports used in transmission and distribution

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

12

- a) Give the classification of transmission line according to
  - i) Voltage level
  - ii) Length of transmission line
  - iii) Type of supply voltage
  - iv) Method of construction
- b) Draw the circuit diagram and phasor diagram of T method.
- c) Give the classification of HVDC transmission system. Draw layout of monopolar HVDC transmission system.
- d) Draw layout of homopolar HVDC transmission line mention polarity of overhead conductor.
- e) Distinguish between a feeder and a distributor.



5. Attempt any TWO of the following: 12

- a) State and explain skin effect. How it can be reduced?
- b) State any eight criteria for selection of site for substation.
- c) Define string efficiency. List methods of improving string efficiency. Describe any one method.

6. Attempt any TWO of the following: 12

- a) Explain the proximity effect? How it can be reduced? List out factors affecting proximity effect.
  - b) Draw a single line diagram for typical 11 kV/400 V distribution transformer and 33 kV / 11 kV substation.
  - c) State any four desirable properties of cable and give classification of cable, with their voltage level and according to number of core.
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