

22419

12425

03 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

-
- Instructions* – (1) All Questions are *Compulsory*.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data, if necessary.
- (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (6) 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) Write the standard transmission voltages in INDIA.
 - b) Define voltage regulation and transmission efficiency.
 - c) State the skin effect and Give advantages of it.
 - d) State four HVDC transmission line route in India with their voltage level.
 - e) Classify distribution system in details.
 - f) Compare feeder and distributor.
 - g) State any four properties of conductor material used for overhead conductor.

P.T.O.

- 2. Attempt any THREE of the following :** **12**
- a) 'Electric power is to be transmitted at high voltages' Justify this statement.
 - b) Explain Ferranti effect and how it can be reduced.
 - c) Draw and explain Bi-polar HVDC transmission line.
 - d) Differentiate between overhead transmission and underground transmission.
- 3. Attempt any THREE of the following :** **12**
- a) Draw the single line diagram of AC transmission and distribution system.
 - b) Explain the features of wireless transmission of electric power.
 - c) Explain ring grid system. State its advantages.
 - d) State the different methods of improving string efficiency. Explain any one method in detail.
- 4. Attempt any THREE of the following :** **12**
- a) Compare primary transmission and secondary transmission.
 - b) State the effects of low power factor on efficiency and voltage regulation of short transmission line.
 - c) Compare between HVDC and EHVAC transmission.
 - d) Draw the single line diagram of 33/11 KV substation.
 - e) A 3 ϕ overhead transmission line is being supported by 3 disc insulators. The potential across top unit and middle units are 8 KV and 11 KV.
Calculate –
 - i) Line voltage
 - ii) String efficiency

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

- a)
 - i) Explain transposition of conductors.
 - ii) Explain end condenser method for medium transmission line.
- b) Explain the features of flexible AC transmission line. State the types of FACTS controller.
- c) Write the information about distribution substation based on following points –
 - i) Site selection criteria
 - ii) Advantages
 - iii) Disadvantages

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

- a) Compare nominal T and nominal π method of transmission line. (Any six points)
 - b) Explain in detail radial system of distribution with its advantages, disadvantages and application.
 - c) Derive the equation for string efficiency with 3-disc insulators of suspension type.
-