**MSPS01**

**MTEE16B1/MTETE16F1**

**MODEL QUE PAPERS**

**M.TECH**

**IV Semester**

**SPE: (POWER SYSTEM CONTROL)**

**ELECTRICAL POWER SYSTEM DESIGN**

Time: 3 Hours Max. Marks: 75

 ***INSTRUCTIONS:***

* *Question paper is divided into three groups.*
* *Each group is of 25 marks.*
* *Figure to the right in bracket indicates mark.*
* *Assume suitable data if necessary.*

**GROUP A : Answer any three questions. (Question No. 1 is compulsory)**

Q.1 Find the inductance of a single phase overhead –transmission line 10 km long. The line has conductor each of diameter 1.5 cm and spaced 2m apart. Find the reactance of the loop of both the conductors at 50Hz.(05)

Q.2 Explain the principle of vacuum switches for power systems. State their Properties and Applications. (10)

Q.3 Explain the various methods of various regulation of transmission and distribution systems. Compare them. (10)

Q.4 Explain the method of citer connector control for transfer of KW and reactive power. (10)

Q.5 Discuss in detail the steps in planning & designing electrical distribution schemes. (10)

**GROUP B : Answer any three questions. (Question No. 6 is compulsory)**

Q.6 State the principle of control HVDC transmission and state at least 5 applications. (05)

Q.7 What is the consideration in locating the distribution transformer centers? In an overloaded system, how is the new location of distribution transformer center determined by suitable shifting? (10)

Q.8 Explain general relations for the analysis of a transmission line. (10)

Q.9 Derive relation to Develop the Sending-End Power Circle Diagram of a Transmission Line. Explain its constructions and applications. (10)

Q.10 Explain the methods of transmission system planning indicate flow diagram for computer program. (10)

**GROUP C: All Questions are Compulsory.**

**Q.11 Fill in the blanks (Each question carries 2 marks)**

(i) High – voltage circuit breakers used on \_\_\_\_\_\_\_\_\_ and au tested in short circuit test lab.

(ii) The positive and negative sequence components are equal for the \_\_\_\_\_\_ circuit.

(iii) In large power system the main problem of control are \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_.

(iv) Short circuit studies are help in finding \_\_\_\_\_\_\_\_\_\_.

(v) Pin type insulator can be with stand up to \_\_\_\_\_\_\_\_\_ voltage.

**Q.12 Multiple choice question. (Each question carries 2 marks)**

(i) For low voltage cables; the insulating material used are \_\_\_\_\_\_\_\_\_.

(a) Impregnated paper

(b) Varnished cambric

 (c) Both (a) and (b)

 (d) None of the above

(ii) The inductance of a transmission line depends on the conductor’s \_\_\_\_\_\_\_\_\_.

 (a) Weight

 (b) Size

 (c) Dimensions

 (d) None of these

 (iii) The resistance f transmission line increase with increase in \_\_\_\_\_\_\_\_.

 (a) Pressure

 (b) Temperature

(c) Tension

(d) Cross sections area.

(iv) The \_\_\_\_\_\_\_\_\_\_\_ current of the line depends on the capacity of the line.

 (a) Charging

 (b) Discharging

(c) Both a & c

(d) None.

(v) Steam-turbo generators have) \_\_\_\_\_\_\_\_\_\_\_ rotor construction

 (a) Squirrel cage

 (b) Salient

(c) Cylindrical

(d) Wound.

**Q.13 True or false (Each question carries 1 marks)**

(i) Transmission lines are classified into 9 types.

(ii) The national grid will enable hydro-thermal optimization on a national basis.

(iii) HVDC transmission switching transient is main problem.

(iv) Location of substation is closer to load centre.

(v) The rating of distributed transformer is not exceeding than-15kVA.

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