**MSPS02**

**MTEE16B2/MTETE16F2**

**MODEL QUE PAPERS**

**M.TECH**

**IV Semester**

**SPE: (POWER SYSTEM CONTROL)**

**POWER SYSTEM ANALYSIS AND DYNAMICS**

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 Write a note on ‘graph theory’. (05)

Q.2 Explain digital protection of synchronous generator. (10)

Q.3 Explain Direct Short Circuit i.e. Bolted Fault. (10)

Q.4 Explain how to protect EHV/UHV transmission lines using traveling wave phenomena. (10)

Q.5 Explain and derive iterative Techniques. (10)

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

Q.6 State the types of faults. (05)

Q.7 Explain Gaussian elimination method for load flow studies. (10)

Q.8 Explain power system representation in detail. (10)

Q.9 Explain Analysis of Multiphase Power System Networks. (10)

Q.10 Explain short circuit studies using bus admittance matrix by phase coordinates method. (10)

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

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

(i) The reflection coefficient of short – circuited line is \_\_\_\_\_\_.

(ii) Bus admittance matrix is \_\_\_\_\_\_.

(iii) With increasing supply frequency corona loss \_\_\_\_\_\_.

(iv) The protection scheme which is designed to protect the component parts of the power system is known as \_\_\_\_\_\_\_\_\_\_ Protection.

(v) Solving equation gives the \_\_\_\_\_\_\_\_\_\_.

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

(i) Insulation co-ordination for UHV lines is done based on \_\_\_\_\_\_\_\_.

 (a) Lighting surges

 (b) Switching surges

 (c) Both

 (d) None of above

(ii) The real power & reactive power are specified at \_\_\_\_\_\_\_\_\_\_\_.

 (a) Generation bus

 (b) Load bus

 (c) Slack bus

 (d) Swing bus

(iii) The values of ABCD constant for a short transmission line are \_\_\_\_\_\_\_.

 (a) , 0, l, & 1

 (b) 1, 1, 1 & 1

 (c) 1, , 0, % 1

 (d) 1, 1, , 0

(iv) Bundled conductor is used for EHV transmission lines primarily for reducing \_\_\_\_\_\_\_\_.

 (a) Corona loss

 (b) Surge impedance

 (c) Voltage drop across the line

 (d) I2R losses

(v) The critical clearing time of a fault in power system is related to \_\_\_\_\_\_\_\_.

 (a) Reactive power limit

 (b) Short circuit limit

 (c) Steady state stability limit

 (d) Transient stability limit

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

(i) Slack bus is not PQ bus.

(ii) When the voltage & current in the system after fault become balanced then the fault is called symmetrical fault.

(iii) Corona loss is much lower in HVDC transmission line.

(iv) Hollow conductors are used in transmission line to reduce corona.

(v) The power transmission capability of bipolar line is almost same as that of single circuit line.

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