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Roll No .....

**MEPS - 205****M.E./M.Tech. II Semester**

Examination, December 2015

**Power System Transients***Time : Three Hours**Maximum Marks : 70*

- Note :** i) Attempt any five questions in all.  
 ii) All questions carry equal marks.

1. a) What are the sources of transients? Explain how transients affect the power systems.  
 b) Distinguish between lumped and distributed circuit transients.
2. a) Distinguish between normal and abnormal switching transients in load switching.  
 b) Derive an expression for the transient currents in a RLC circuit.
3. Explain the following :  
 a) Circuit closing transients  
 b) Double frequency transients and basic transform of the RLC circuit  
 c) Current chopping

4. a) Explain the characteristics of lightning strokes. Derive the mathematical model for lightning.  
 b) Derive Wave equation of travelling waves in transmission lines?
5. a) Explain multi-conductor system of travelling waves in transmission lines?  
 b) Explain Lattice diagram.
6. Write a detailed technical note on the following :  
 a) Principle of digital computation  
 b) Application of z transform methods in power system transient.
7. a) Explain in detail how EMTP is used for the computation of Transients in power system.  
 b) How will you simulate surge diverter for transient analysis?
8. a) What are the applications of insulation co-ordination and explain it?  
 b) Explain the Characteristics of protective devices? How the arresters is located in insulation co-ordination?

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