Code No: R4102A/R10 **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, March - 2017
ELECTRICAL DISTRIBUTION SYSTEMS
(Electrical & Electronics Engineering)

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Assume that a load of 100kW is connected at the riverside substation. The 15min. weekly maximum demand is given as 75kW, and the weekly energy consumption is 4200kWh. Assuming a week is 7 days, fine the demand factor and the 15min. weekly load factor of the substation.
   (b) Classify different types of distribution loads and specify their voltage levels. [7+8]
2. What is meant by primary feeder loading? Give some of the factors which will affect the design loading of a feeder. [15]
3. (a) Explain the various factors to be considered to decide the ideal location of substation.
   (b) Explain how to decide the rating of a distribution substation. [8+7]
4. (a) Derive the expressions for volt drop and power loss in lines.
   (b) Explain the manual method of solution for radial distribution systems. [7+8]
5. (a) What are the objectives of Distribution system protection.
   (b) Explain about the operation of a Fuse. [9+6]
6. (a) Explain:
   (i) What is coordination? (ii) What is a protecting device?
   (b) Explain Recloser -Recloser coordination. [7+8]
7. (a) Explain the effect of shunt compensation on distribution system.
   (b) A 3-phase substation transformer has a name plate rating of 7250KVA and a thermal capability of 120% of the name plate rating. If the connected load is 8816KVA with a 0.85pf lagging p.f., determine the following:
      i. The KVAR rating of the shunt capacitor bank required to decrease the KVA load of the transformer to its capability level.
      ii. The power factor of the corrected level. [6+9]
8. (a) Briefly explain the line drop compensation and voltage control.
   (b) How an AVB can control voltage? With the aid of suitable diagram explain its Function. [7+8]

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