Total No. of Questions :5] *[Total No. of Printed Pages : 2*

Roll No .....

EX - 505

B.E. V Semester

Examination, June 2016

Power System - I

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Write down the name of various types of energy sources.
   b) What is real time pricing?
   c) What are load curves and load duration curves?
   d) What is solar power? Discuss various factors on which the power depends.

OR

What are the major components of Thermal power station and discuss various advantages and disadvantages?

Unit - II

2. a) Explain the meaning of self GMD and mutual GMD.
   b) Why HVAC is used for long transmission line?
   c) What is the transmission efficiency and transmission line voltage regulation?
   d) Explain clearly the 'Skin effect' and proximity effect when referred to overhead lines.

OR

What are bundled conductors? What is the basic difference between a bundle conductor and a composite conductor?

Unit - III

3. a) What is transmission line? Classify the transmission line.
   b) Draw the various type of Networks of medium transmission lines.
   c) What are the power circle diagram? How they are useful?
   d) A single phase line is transmitting 1100kw power to a factory at 11kV and at 0.8 pf lagging. It has a total resistance of 2Ω and a loop reactance of 3Ω. Determine :
      i) Voltage sending end
      ii) % Regulation
      iii) Transmission efficiency.

OR

Derive expression for ABCD constants of a medium transmission line.

Unit - IV

4. a) Write various methods of grading of cables.
   b) What is stringing chart? What is its utility?
   c) What is the effect of Ice and wind on sag?
   d) A string insulator has 5 units. The capacitance from each joint to fower is 10% of the capacitance of each unit. The voltage across each unit should not exceed 11kV. Find the maximum voltage for the string application.

OR

Derive an expression for Sag and tension in a power conductor string between two supports at equal height.

Unit - V

5. a) State Kelvin's law.
   b) Enlist various type of Distribution substation.
   c) Compare a 3-ϕ 4 wire system of distribution with the single phase systems.
   d) What are the different types of Bus bar arrangement. Explain any one of them.

OR

Write a short note on :

i) Ring mains ii) Corona effect

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