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SUBJECT CODE NO:- H-1717
FACULTY OF SCIENCE AND TECHNOLOGY
M.E. (Electrical Power Systems)
Elective-II: Power System Design
(REVISED)

[Time: Three Hours]

[Max.Marks: 80]

Please check whether you have got the right question paper.

- N.B
1. Solve any two questions from each section.
 2. Use suitable data when required.

Section A

- Q.1 It is proposed to transmit 100mw at 0.9PF lagging over a distance of 200km. the line efficiency and regulation at full load should be better than 96% and 14% respectively. Work out following details of transmission line. Make suitable assumption. 20
- a) Select line voltage and number of circuit
 - b) Conductor and span
 - c) Find line parameters
 - d) Estimate line efficiency & regulation for full load
 - e) Corona loss
- Q.2
- a) Explain selection of size & location for generating station. 10
 - b) Explain in details power system components and their role in power system. 10
- Q.3
- a) Derive expression for sag calculation considering 10
 - a) Ice and wind pressure &
 - b) When level are unequal
 - b) Elaborate points considered for power system design of transmission line for voltage, conductor size, number of circuits and span. 10

Section B

- Q.4
- a) Write down points considers while selecting cable for high voltage & EHV application. 10
 - b) Write cable laying methods write advantages & disadvantages of methods. 10
- Q.5
- a) Derive expression for A, B, C, D equivalent T & Π network for long transmission line. 10
 - b) Derive expression for power flow through transmission line. 10

- Q.6 a) Describe following tolerable and actual step & touch voltage. 10
- b) Earthing electrodes and grounding mat design for 400 kv substation. 10