Total No. of Printed Pages:2

SUBJECT CODE NO:- P-278
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E. (EEP/EE/EEE) Examination May/June 2017
Electrical Power Transmission & Dist.
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B 1) Question (1) & (6) are compulsory.
2) Attempt any two Questions from (2) to (5) from Section A.
3) Attempt any two Questions from (7) to (10) from Section B.

Section A

Q.1 Attempt any five 10
a) Define string efficiency, will it be equal to 100%
b) If supply frequency increase, then skin effect is ……. Clarify
c) Define following terms
i) Feeder (ii) Distributor
d) What are constants of overhead line
e) What is transposition & why it is adopted
f) Define load factor and demand factor
g) Why sub-stations are required.
h) What are desirable properties of insulator?

Q.2 (1) What is tariff? Explain its types 05
(2) Define terms Load Curve, Load factor, demand factors, diversity factor and load duration curve 05
(3) Explain requirements of distribution systems 05

Q.3 1) What are different types of insulators? Write a note on Pin type insulators with neat sketch 05
2) In a 33Kv overhead line, there are three units in string of insulators. If capacitance between each insulator pin & earth is 11% of self-capacitance of each insulator. 05
3) What are surge arrestors? Where and why do we use these equipment's. 05

Q.4 (1) Derive expression of Inductance of three phase line with its unsymmetrical spacing 05
(2) Explain any one method of improving string efficiency. 05
(3) Write a note on GMR and GMD 05

Q.5 Write short notes on (Any three) 15
a) Ring main and Radial Distribution System
b) Proximity effect
c) Different types of loads in power system
d) Skin effect.

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Section B

Q.6 Attempt any five 10

a) What is mean by short, medium, long transmission line?
b) What is concept of self GMD in case of inductance of transmission line
c) i) Self GMD is depends on ……..
ii) Mutual GMD depends on…….
d) What is meant by transposition of conductor & why
e) Write any four differences between Nominal T and TT method
f) What are effects of lagging & leading power factors of load on voltage regulation
g) What is function of armouring and lead sheathing in cable?
h) State any two assumptions made while drawing equivalent circuit of nominal T network of medium transmission line.

Q.7
1. Find value of ABCD constants of medium transmission line when represented as normal TT circuit and AD – BC = 1 05
2. Derive expression for capacitance of three phase line with unequilateral spacing. 05
3. An Over Head three phase transmission line delivers 5000 Kw at 22 KV at 0.8 Lag power factor. The resistance and reactance of each conductor is 4 Ω and 6 Ω respectively, Determine 05
a) Sending end voltage
b) Percentage regulation
c) Transmission efficiency

Q.8
1 Discuss various types of line supports 05
2. Explain nominal T network with vector diagram. 05
3. An overhead 3Ø 50 Hz 132 Kv transmission line has conductors placed in horizontal plane 4.56m apart conductor diameter is 22.4 mm. If the line length is 100 kms. 05
Calculate charging current per phase assuming complete transporisition

Q.9
1. Draw a neat sketch of underground cable. Explain its construction. 05
2. Explain four factors affecting corona. 05
3. Discuss suitability of various types of overhead lines 05

Q.10 Write short notes on any three 15
(1) Grading of cables
(2) GMR & GMD
(3) ABCD parameters
(4) Capacitance of long transmission line