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Question Paper Code: 54304

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fourth Semester

Electrical and Electronics Engineering

15UEE404- TRANSMISSION AND DISTRIBUTION

(Regulation 2015)

Duration: 1.15 hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Which of the following voltage is the usually not secondary distribution voltage in Tamilnadu? CO1- R
(a) 400 V (b) 440 V (c) 115 V (d) 230 V
2. Which of the following system is one way power transfer system CO1- R
(a) Radial system (b) Ring main system
(c) Interconnected system (d) None of the above
3. GMR of a conductor is CO2- R
(a) $GMR = 0.7788 r$ (b) $GMR = 0.7677 r$ (c) $GMR = 0.7766 d$ (d) $GMR = 0.7788 d$
4. Skin effect is not associated with the following one CO2- R
(a) Frequency (b) Diameter of the wire (c) Shape of the wire (d) Size of the wire
5. What is the distance covered for short transmission line CO3- R
(a) Less than 50 km (b) More than 50 km (c) 50 km to 150 km (d) Less than 60 km
6. Surge impedance of the transmission line is ? CO3- R
(a) Root of L / C (b) Root of R / C (c) Root of L / R (d) root of $L / C * R$
7. What is the forbidden level of Insulator ? CO4- R
(a) Less than 3 eV (b) 0.7 eV (c) 0.3 eV (d) More than 4 eV

8. What is the maximum voltage per insulator is? CO4- R
 (a) 22 KV (b) 33 KV (c) 11 KV (d) 66 KV
9. Sag the conductor takes the following form CO5- R
 (a) $S = WL^2 / 2T$ (b) $WL / 8D$ (c) $WL^2 / 8T$ (d) $WL^2 / 8D$
10. Outdoor substation is preferred for CO5- R
 (a) Less than 66 KV (b) Beyond 110 KV (c) Less than 110 KV (d) Beyond 66 KV

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Example with a neat layout of the modern EHV system ? What is the highest voltage level available in Tamilnadu and India for EHV transmission system? CO1- U (8)
12. A single phase 10 km line is 8 m above the ground. The diameter of the conductor is 2 cm and is separated by 4 km horizontally. Find CO2- U (8)
 (i) Capacitance between conductors
 (ii) Capacitance between phase and neutral plane
13. A single phase 11 KV line with a length of 15 km is to transmit a power of 500 KVA. The inductance reactance of the line is 0.5 ohm / km and the resistance is 0.3 ohm / km. Calculate the CO3- U (8)
 (i) Efficiency and
 (ii) Regulation of the line for 0.8 lagging power factor.
14. A suspension string has 3 units. Each unit can withstand a maximum voltage of 11 KV. The capacitance of each joint and metal work is 20 percent of the capacitance of each disc. Find CO4- U (8)
 (i) Maximum line voltage for which the string can be used and
 (ii) String efficiency
15. Make a short note on the following topics: CO5- U (8)
 (i) Indoor substation