Reg. No. : | | | | | | | | | | |

Question Paper Code: 31433

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

Fourth Semester

Electrical and Electronics Engineering

01UEE403 – TRANSMISSION AND DISTRIBUTION

(Regulation 2013)

Duration: One hour Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. In a three wire system, the area of cross section of neutral is generally _____ of either outer.

   (a) Double (b) Same (c) Half (d) None of these

2. If Power P available from a hydro scheme is given by the formula P = 9.81QH, where Q is the flow rate through the turbine in l/s and H is the head in metres, then P will be in units of

   (a) HP (b) W (c) KJ/s (d) kWh

3. The rated voltage of a three phase power system is given as

   (a) RMS phase voltage (b) RMS line to line voltage
   (c) Peak line to line voltage (d) Peak phase voltage

4. The charging current in a transmission line increases due to corona effect because corona increases

   (a) Line current (b) Effective line voltage
   (c) Power loss in lines (d) Effective conductor diameter

5. If the power factor of the load decreases, the line losses

(a) Increases (b) Decreases
(c) No change (d) Initially increases then decreases

6. The square root of the ratio of line impedance and shunt admittance is called

(a) Surge impedance of the line (b) Conductance of the line
(c) Regulation of the line (d) None of these

7. The power factor of industrial loads is generally

(a) unity (b) Lagging (c) Leading (d) Zero

8. Transmission line insulators are made of

(a) Glass (b) Porcelain (c) iron (d) PVC

9. In a substation the following equipment is not installed

(a) Exciters (b) Series capacitors
(c) shunt reactors (d) Voltage Transformers

10. Most of the substations in the power system change _____of electric supply.

(a) Current level (b) Voltage level
(c) Both (a) and (b) (d) None of these

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Draw the structure of electrical power system and explain in detail. (8)

12. Derive the expression for the capacitance of unsymmetrical and symmetrically spaced three phase overhead line. (8)

13. A 3-phase, 50 *Hz*, 150 *km*, line has a resistance, inductive reactance and capacitive shunt admittance of 0.1Ω, 0.5Ω and 3×10^{-6} *S* per *km* per phase. If the line delivers 50*MW* at 110 *kV* and 0.8 p.f. lagging, determine (i) the sending end voltage and current, (ii) regulation and (iii) transmission efficiency. Assume a nominal π circuit for the line. (8)

14. Obtain the expression for string efficiency of suspension insulator. (8)

15. With a neat sketch, explain double bus with double breaker. State its advantages and disadvantages. (8)