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

## Question Paper Code: 44303

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

Fourth Semester

Electrical and Electronics Engineering

14UEE403 - TRANSMISSION AND DISTRIBUTION

(Regulation 2014)

Duration: One hour Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

**(Answer any six of the following questions)**

1. In transmission system a feeder feeds power to

   (a) Service mains (b) Generating stations
   (c) Distributors (d) All the above

2. Which of the following distribution system is more reliable?

   (a) Radial (b) Ring main
   (c) Tree (d) All are equally reliable

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. If the tension in the overhead line is doubled, then the sag is

(a) Doubled (b) Halved
(c) Increased three times (d) Load None of these

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. Illustrate the structure of power system indicating the different voltage level. (8)

12. Derive an expression for the inductance of a single phase overhead line. (8)

13. Show how regulation and efficiency are determined for medium lines using nominal Pi method. (8)

14. Discuss any two methods to increase the value of string efficiency with suitable sketches. (8)

15. A transmission line conductor having a diameter of 19.5 *mm* weights 0.85 *Kg/m*. The span is 275 *meters*. The wind pressure is 39 $kg/m^2$ of projected area with ice coating of 13 *mm*. The ultimate strength of the conductor is 8000 *kg*. Calculate the maximum sag if the safety factor is 2 and the ice weighs 910 $kg/m^3$. (8)