3769

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL - 2019

DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING

POWER SYSTEMS - II

SIXTH SEMESTER EXAMINATION

Time: 3 Hours **Total Marks: 80**

PART - A (10 x 3 = 30 Marks)

Note 1:Answer all questions and each question carries 3 marks

2:Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. Define short, medium and long transmission lines.
2. State Ferranti effect.
3. State any three places of HVDC projects located in India.
4. State any three advantages of steel poles over wooden poles.
5. State the factors that affecting the conductor spacing and ground clearance in Over Head lines.
6. Compare outdoor and indoor substations in three aspects.
7. State the function of batteries in substations.
8. Define primary and secondary distribution systems.
9. State the principle of operation of impedance relay.
10. State the advantages of neutral grounding.

PART - B (5 x 10 = 50 Marks)

Note 1:Answer any five questions and each question carries 10 marks

2:The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. a) Compare A.C. and D.C. transmission in any five aspects.
    b) Write the effect of voltage on line efficiency and line losses.
12. What is CORONA in transmission lines and state its effects.
13. a) Explain the effect of wind and ice load on sag.
    b) Calculate the sag in an OH line under the following conditions.
    Length of span = 150 m
    Cross – sectional area of conductor = 125 mm^2
    Breaking strength = 42 kg/mm^2
    Factor of safety = 5
    Weight of the conductor = 0.859 kg/m.
14. An insulator string consists of 3 units eaach having a safe working voltage of 15 kV. The ratio of self capacitance to shunt capacitance of each unit is 8:1. Find the maximum safe working voltage of the string and string efficiency.

15. (a) Compare radial and ring main system in any five aspects.
    (b) Explain about (i) Feeder (ii) Distributor.

16. Explain with a neat sketch about the differntial protection of bus bars.

17. Explain construction and working principle of thyrite type lightning arrestor.

18. (a) State the merits and demerits of stranded conductors.
    (b) A single core cable has a conductor diameter of 2.5 cm and insulator thickness of 1.25 cm. If the specific resistance of insulation is 1.5×10^{14} Ω cm, Calculate the insulation resistance per km length of cable.

- xxx -