609 Register No.:

October 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B

(2) Answer division (a) or division (b) of each question in PART – C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1. Give a brief note on gas insulated substation.
2. What is meant by feeder in distribution system?
3. Mention the advantages of electric braking.
4. Draw the typical speed - time curve.
5. Define average speed.
6. Define illumination.
7. Mention any three advantages of electric heating.
8. Mention the types of arc welding.

PART – B

9. Classify substations based on service requirement.
10. Draw the single line diagram of sectionalised single bus bar system.
11. Give a brief account on parts of electric drive.
12. Define continuous rating and intermittent rating.
13. What is the necessity for using booster transformer in AC traction system?
14. What are the factors to be considered while designing lighting scheme?
15. Write a note on infrared heating.
16. Compare LED, CFL and incandescent lamps based on lumen output.

[Turn over.....

PART – C

17. (a) Explain ring main system and interconnected system with line diagram.

(Or)

(b) A single phase AC distributor AB 300 m long is fed from end A and is loaded as follows.
(i) 150 A at 0.8 pf lag, 200 m from A.
(ii) 100 A at 0.6 pf lag, 300 m from A. The total resistance and reactance of the distributor is 0.2 and 0.1 Ω/km respectively. Calculate the voltage drop in the distributor.

18. (a) Explain the various types of electric drives.

(Or)

(b) How do you select motors for the following applications?
(i) Mines
(ii) Air compressor.

19. (a) Discuss in brief about different systems of track electrification.

(Or)

(b) Explain magnetic levitation system used in traction with simple sketch.

20. (a) Determine the effective illumination of a room 12mX15m illuminated by 15 lamps of 200 Watts each. The luminous efficiency of each lamp is given as 12 lumens/Watt. Given coefficient of utilisation as 0.4 and depreciation factor as 0.8.

(Or)

(b) Explain the working of mercury vapour lamp with a neat diagram.

21. (a) With a neat diagram, explain the working of indirect core type induction furnace.

(Or)

(b) Explain the methods of temperature control of resistance furnace.
