

October 2016

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Answer any fifteen questions in PART – A and division (A) or division (B) of each question in PART – B.

(2) Each question carries 1 (one) mark in PART – A and 12 (twelve) marks in PART – B.]

PART – A

1. What is sub-station?
2. State the requirements of distribution system.
3. What are the advantages of interconnected distribution system?
4. What is the effect of disconnection of neutral in a balanced three phase, four wire system?
5. List the types of electric drives.
6. What is multi motor drive?
7. Name the motors suitable for cranes.
8. What are the advantages of group drive?
9. What are the methods of supplying power to electric traction?
10. Write the advantages of single phase low frequency AC system.
11. Define schedule speed.
12. List the motors suitable for traction purposes.
13. Define solid angle.
14. What is glare?
15. Write the expansion of CFL.
16. What is indirect lighting scheme?
17. Write the applications of dielectric heating.
18. What is the advantage of laser beam welding?
19. Give the commonly used heating element materials.

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20. Write the reasons for employing low voltage and high current supply for arc furnace.

PART - B

21. (A) Differentiate between feeder, distributor and service mains in distribution system.

(Or)

- (B) What is indoor sub-station? Write the advantages and disadvantages of outdoor sub-station.

22. (A) Choose the most suitable electric motor for the following applications. Give reasons for your choice.

(i) Air compressor (ii) Lift and hoists (iii) Paper mill (iv) Belt conveyer (v) Ship and (vi) Punching machine.

(Or)

- (B) Explain dynamic braking applied to DC series motor and three phase induction motor.

23. (A) Show that series-parallel control of traction motor results in a saving of energy than plain rheostatic control.

(Or)

- (B) Explain different methods of connecting booster transformer.

24. (A) Explain with neat sketch, the working of sodium vapour lamp.

(Or)

- (B) It is required to provide an illumination of 100 lux in a factory hall 30m x 15m. Assume that the depreciation factor is 0.8, coefficient of utilisation is 0.4 and efficiency of lamp is 14 lumens/watt. Suggest the number of lamps and their ratings. The sizes of lamps available are 100, 250, 400 and 500 watts.

25. (A) With neat sketch, explain electron beam welding.

(Or)

- (B) Explain the following methods of controlling welding current in transformer type welding machine.

(i) Moving coil method (ii) Magnetic shunt method and (iii) Saturable reactor method.