898

June 2022

<u>Time – Three hours</u>
(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. State the principle of operation of DC motor.

2. Define magnetic flux. State its unit.

3. Mention the types of 3-phase alternator.

4. State the importance of earthing.

5. What is inverter?

6. Name the universal logic gates.

7. State the importance of earth leakage circuit breaker.
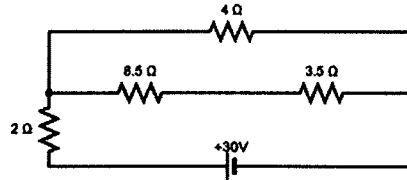
8. What is power factor in AC circuit?

PART – B

9. State Kirchhoff's laws.

10. Explain why starter is necessary for starting a DC motor.

11. Name any three methods of speed control of 3-phase induction motor.

12. What is group drive? State its advantages.

13. List out the precautions made to avoid electric shock.

14. Draw the circuit of half wave rectifier with filter.

15. State the different types of scan in PLC.

16. State the necessity of contactor in control circuit.

[Turn over.....

PART – C

17. (a) Draw the diagram of 4 point starter and explain its working.

(Or)

(b) Calculate the current and power dissipated in the 4Ω resister in the circuit given below.

18. (a) Derive the relationship between line voltage and phase voltage in a three phase star connected system.

(Or)

(b) Explain the working of single phase capacitor start induction motor.

19. (a) Explain the construction and working of brushless servomotor.

(Or)

(b) List out the various causes of accident and their preventive measures.

20. (a) Explain the working of PN junction diode in forward bias and reverse bias.

(Or)

(b) Explain the operation of SMPS with a block diagram. State its advantages.

21. (a) Explain the construction and working of solenoid type contactor.

(Or)

(b) Draw the block diagram of PLC and explain.

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