

SARDAR PATEL UNIVERSITY V.V. NAGAR

[A-7]

B.Sc. (VI SEM.) ELECTRONICS4th October-2022,**EXAMINATION****SUB. - INDUSTRIAL ELECTRONICS- II****SUB.CODE-US06CELE05****TIME: -3:30 pm to 5:30 pm****MARKS-****70****Q- Choose correct answer****[10]****1**

1. B2 and B6 is _____ type of configuration.
(A) Bridge (C) Half wave
(B) Full wave (D) None of above
2. Single phase bridge control circuit consists of _____ SCRs.
(A) 2 (C) 6
(B) 4 (D) 1
3. The load voltage of a chopper can be controlled by varying the _____.
(A) Firing angle (C) both A and B
(B) Duty cycle (D) None of above
4. Half control bridge circuit used for _____.
(A) improving power factor (C) increasing controlling efficiency
(B) multiplying power factor (D) All of above
5. For speed reversal for DC motor drives _____ is used.
(A) dual converter (C) Both (A) and (B)
(B) chopper (D) None of above
6. Type A chopper consists of _____ chopping network.
(A) 1 (C) 3
(B) 2 (D) None of above
7. In a single-phase half wave inverter _____ SCR(s) are/is gated at a time.
(A) one (C) three
(B) two (D) four
8. Dual converter consists of _____.
(A) inverter (C) both A and B
(B) rectifier (D) amplifier and rectifier
9. Freewheeling diode used in _____.
(A) Type A chopper (C) Type B chopper
(B) Phase control circuit (D) None of above
10. A large value of inductor in bridge circuit results in _____.
(A) continues current (C) discrete current
(B) very high current (D) None of above

Q- Fill in the blank

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- 1 PLC stands for _____.
- 2 Power controlling done by _____ technique.
- 3 Type B chopper consists of _____ chopping network.
- 4 Chopper converts _____ to _____.

True or False

- 5 Inverter converts AC to AC voltage.
- 6 A chopper is high speed Semiconductor switch.
- 7 PLC used for power controller.
- 8 PLC system is a digital system.

Q- Short answer type question. (Any ten)

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1. Briefly explain chopper.
2. What do you mean by phase control?
3. Why power controlling is needed?
4. Differentiate Type A and Type B chopper.
5. State principle used in speed control of Motor.
6. What do you mean snubber circuit? Briefly explain.
7. Give a principle of step-up chopper.
8. List different section of PLC section.
9. State advantages of full wave bridge control circuit.
10. State application of chopper.
11. Briefly explain dual converter.
12. List the PLC application.

Q- Long answer questions (Attempt any Four)

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- 1 Draw the necessary diagram of dual converter and explain functional mechanism and principle of it.
- 2 Explain the principle of chopper operation with necessary circuit diagram.
- 3 Explain the concept of chopper configuration and explain functional mechanism of type B chopper with diagram.
- 4 Explain step up chopper with its functional mechanism.
- 5 Explain different version of full wave phase control circuit.
- 6 Discuss working of two quadrant type A chopper with necessary diagram.
- 7 Draw block diagram of PLC system and discuss function of all section of it.
- 8 Discuss different terms and terminologies used in operation of PLC.

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