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SEAT No. \_\_\_\_\_



No. of Printed Pages: 2

**SARDAR PATEL UNIVERSITY V.V.NAGAR**

**B.Sc.(VI SEM.) ELECTRONICS**

Thursday, 7<sup>th</sup> APRIL-2022 EXAMINATION

**SUB. - INDUSTRIAL ELECTRONICS- II**

**SUB.CODE-US06CELE24**

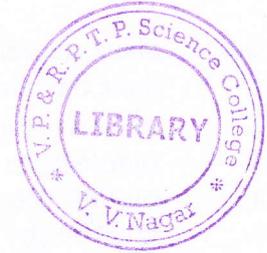
**TIME:-3:00 pm to 5:00 pm**

**MARKS-70**

Q-1 Choose correct answer

[10]

1. Power controlling done by \_\_\_\_\_.  
(A) rectification (C) amplification  
(B) phase control (D) None of above
2. Type A chopper consists of \_\_\_\_ chopping network.  
(A) 2 (C) 3  
(B) 4 (D) 1
3. Dual convertor consists of \_\_\_\_\_.  
(A) amplifier and rectifier (C) thermistor  
(B) inverter and rectifier (D) None of above
4. Half control bridge circuit used for \_\_\_\_\_.  
(A) improving power factor (C) increasing controlling efficiency  
(B) multiplying power factor (D) constant power factor
5. \_\_\_\_\_ is a programmable controller which handles binary inputs and output related by logic statements.  
(A) PLC (C) CNC  
(B) Microprocessor (D) None of above
6. The load voltage of a chopper can be controlled by varying the \_\_\_\_\_.  
(A) Firing angle (C) both A and B  
(B) Duty cycle (D) current
7. In current limit control method when the current \_\_\_\_\_ the upper limit of the chopper is switched off.  
(A) equals (C) less than  
(B) exceeds (D) None of above
8. Single phase bridge control circuit consists of \_\_\_\_\_ SCRs.  
(A) 2 (C) 6  
(B) 4 (D) 1
9. \_\_\_\_\_ on a chip is called microprocessor.  
(A) ALU (C) Control unit  
(B) CPU (D) Register
10. A large value of inductor in bridge circuit results in \_\_\_\_\_.  
(A) continues current (C) discrete current  
(B) very high current (D) Zero current



Q-2 Fill in the blank and True or False

[8]

Fill in the blank

- 1 PLC used for \_\_\_\_\_.
- 2 B2 and B6 is \_\_\_\_\_ type of configuration.
- 3 Freewheeling diode used in \_\_\_\_\_.
- 4 Type B chopper consists of \_\_\_\_\_ chopping network.

True or False

- 5 Half control bridge circuit used for increasing controlling efficiency.
- 6 Inverter converts AC to DC voltage.
- 7 PLC system is an digital system.
- 8 B2 and B6 is full wave type of configuration.



Q-3 Short answer type question. (attempt any ten)

[20]

1. State the principle of chopper.
2. What is bridge configuration?
3. Differentiate between Type A and Type B chopper.
4. Give the comparison of B2 and B6 connection.
5. What do you mean by phase control?
6. Why power controlling is needed?
7. State the principle of step-up chopper.
8. Briefly explain snubber circuit.
9. State function of dual convertor.
10. State application of chopper.
11. What do you mean by program?
12. What do you mean by PLC ?

Q-4 Long answer questions(attempt any four )

[32]

- 1 Describe the principle of chopper operation with necessary diagram and waveform.
- 2 Discuss working of dual converter circuit with diagram.
- 3 Explain functional mechanism of full wave phase control circuit with necessary diagram and waveform.
- 4 Describe the functional mechanism of step up chopper with diagram and waveforms.
- 5 Discuss the function of second quadrant type B chopper and discuss its working.
- 6 Discuss working of first quadrant type A chopper with necessary diagram.
- 7 Draw block diagram of PLC system and explain function of each section of it.
- 8 Discuss different terms and terminology used in operation of PLC.

← X →