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C16-EC-505

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**BOARD DIPLOMA EXAMINATION, (C-16)
OCT/NOV—2018
DECE—FIFTH SEMESTER EXAMINATION**

INDUSTRIAL ELECTRONICS

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State the principle of induction heating.
2. Mention the ratings of SCR.
3. Draw the symbol SCR, LASCR and SCS.
4. Give the classification of control systems.
5. State the need of PLC.
6. Explain Magnetostriction effect.
7. Define the term Ultrasonic.
8. State the need of inverters.
9. List the applications of UPS.
10. List the applications of dielectric heating.

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PART-B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each questions carries **ten** marks.
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

11. Explain construction and working of SCR.
12. Explain construction and working of UJT
13. Draw and explain Volt-Ampere characteristics of TRIAC under forward/reverse bias.
14. Explain PWM voltage control of inverter.
15. Explain the construction and working of pulsed-echo ultrasonic flaw detector.
16. Explain the construction, working principle and application of resistance strain gauge.
17. Give comparison between open loop and close loop control systems with examples.
18. Explain the basic circuit of AC resistance welding and explain its working.

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BOARD DIPLOMA EXAMINATION
MARCH/APRIL - 2019
DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING
INDUSTRIAL ELECTRONICS
FIFTH SEMESTER EXAMINATION

Time: 3 Hours

Total Marks: 80

PART - A (3m x 10 = 30m)

Note 1: Answer all questions and each question carries 3 marks

2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. List the applications of DIAC and TRIAC
2. Draw the equivalent circuit of UJT?
3. What is the need of Uninterrupted Power Supply?
4. What is the need of inverter?
5. Classify transducers on the basis of principle of operation and applications
6. Write any three applications of LVDT
7. What is the meaning of skin effect?
8. Write any three advantages of resistance welding?
9. What is the need for PLC?
10. What is the meaning of actuating signal in control system?

PART - B (10m x 5 = 50m)

**Note 1: Answer any five questions and each carries 10 marks*

2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. Explain the construction and working of Uni Junction Transistor?
12. Explain SCR triggering using UJT
13. Explain the construction and working of GTO SCR?
14. Explain the working of Online UPS and Offline UPS.
15. Explain the construction and working of piezoelectric ultrasonic generator?

16. Explain the working of Accelerometer?
17. Explain about HF power source for induction heating.
18. Explain an open loop control system with any two examples

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BOARD DIPLOMA EXAMINATION
JUNE - 2019
DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING
INDUSTRIAL ELECTRONICS
FIFTH SEMESTER EXAMINATION

Time: 3 Hours

Total Marks: 80

PART - A (3m x 10 = 30m)

Note 1: Answer all questions and each question carries 3 marks

2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. Draw the circuit symbols of GTOSCR, SUS, SCS?
2. Define intrinsic stand-off ratio of UJT.
3. Write any 3 applications of UPS?
4. Draw the output voltage waveforms of Sinusoidal pulse width modulation inverter?
5. Explain magnetostriction effect.
6. Write any three disadvantages of LVDT?
7. What is the principle of induction heating?
8. Draw the block diagram of a resistance welding system that uses sequence timer
9. Write any three features of open loop control system?
10. Define transfer function.

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PART - B (10m x 5 = 50m)

Note 1: Answer any five questions and each carries 10 marks

2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. Explain about construction and working of Uni Junction Transistor?
12. Explain the working of SCR using two transistor analogy?
13. Explain about the speed control of D.C Motor using single Phase half wave SCR rectifier?
14. Explain the working of MOSFET based Inverter circuit?
15. Explain the construction and working of LVDT?

16. Explain the construction and working of magnetostriction oscillator and how ultrasonics are generated?
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17. Explain the basic circuit of AC resistance welding and explain its working?
18. Explain an closed loop control system with any two examples

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BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DECE-FIFTH SEMESTER

INDUSTRIAL ELECTRONICS

Time:3 hours

Max. Marks: 80

PART – A

3 X 10 = 30

- Instructions:*
1. Answer *all* questions.
 2. Each question carries **Three** Marks.
 3. Answer should be brief and straight to the point and should not exceed five simple sentences.

1. Draw the V-I characteristics of DIAC.
2. Compare GTOSCR and SCR.
3. List the applications of inverters.
4. State the advantages of SMPS.
5. Classify electronic transducers based on principle of operation.
6. State the working principle of strain gauge.
7. List the applications of induction heating.
8. Classify Different Types of ELECTRICAL WELDING.
9. Define transfer function.
10. List the applications of PLCs.

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PART – B

10 X 5 = 50

Instructions: 1. Answer any **Five** questions
2. Each question carries **TEN** Marks.
3. Answer should be comprehensive and Criteria for Valuation is the content but not the length of the answer.

11. Explain the construction and working of SCR with a sketch.
12. Draw and explain the V-I characteristics of TRIAC with its constructional details.
13. Explain the triggering of SCR using UJT with a diagram.
14. Explain the working of off-line UPS with a diagram.
15. Explain the construction and working of LVDT.
16. Explain the construction and working of Thermo-Couple Transducer.
17. a) Compare induction heating and dielectric heating. 4M
b) Explain the principle of resistance welding with a sketch. 6M
18. Draw the Block diagram of Closed Loop System and Explain.

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**BOARD DIPLOMA EXAMINATION, (C-16)
NOVEMBER—2020
DECE—FIFTH SEMESTER EXAMINATION
INDUSTRIAL ELECTRONICS**

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define intrinsic stand-off ratio of UJT.
2. List the applications of SCR.
3. List the application of inverters.
4. List the applications of SMPS.
5. Classify electrical transducers on the basis of principle of operation and applications.
6. List applications of resistance strain gauge.
7. Classify industrial heating methods.
8. List the applications of dielectric heating.
9. Define transfer function of control system.
10. State the need for PLC.

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PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

11. Explain the construction and working of GTO SCR.
12. Explain the construction and working of TRIAC with its volt ampere characteristics.
13. Explain the speed control of DC motor using SCR.
14. Explain the working of SMPS with the block diagram.
15. Explain the construction and working of Piezo-electric transducer.
16. Explain construction and working of Pulsed-echo ultrasonic flaw detector.
17. Explain about the electrodes used in dielectric heating and method of coupling to RF generator.
18. Draw and explain the block diagram of a closed loop control system and describe with an example.

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BOARD DIPLOMA EXAMINATION, (C-16)

MARCH/APRIL—2021

DECE - FIFTH SEMESTER EXAMINATION

INDUSTRIAL ELECTRONICS

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List any six different thyristor family devices.
2. Distinguish among SVS, SBS and SCS.
3. List the applications of SMPS.
- * 4. Explain the working principle of inverter.
5. Classify transducers based on principle of operation.
6. Explain piezoelectric effect.
7. List applications of dielectrical heating.
8. Classify industrial heating methods.
9. Define transfer function.
10. Give any three examples of closed loop control system.

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PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain the construction and working of SCR with a neat sketch.
12. Explain construction and working of UJT.
13. Explain different triggering modes of TRIAC with neat diagrams.
14. Explain the working of ON-LINE UPS with neat diagram.
15. Explain the constructional details and working principle of strain gauge.
16. Explain the construction and working of magnetostriction oscillator and explain how ultrasonics are generated.
17. Draw and explain basic circuit for AC resistance welding.
18. Explain PLC system with a block diagram.

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