

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
TELANGANA
DIPLOMA EXAMINATION (C-18) , C-18-REGULAR-FEB-2021
SEMESTER V , SEMESTER END EXAM
18EC-502C/EE-503E(A)
Industrial Electronics



6550

Exam Date: 23-02-2021

Session: AN

Duration: 3 Hours [02:00 PM To 05:00 PM]

[Total Marks: 60]

PART-A

Instructions: 1. Answer any **TWELVE** questions 12 X 1 = 12
2. Each question carries **ONE** mark

1. List any two advantages of Servo-Stabilizers.
2. Mention any two applications of SMPS
3. Draw the voltage waveform of three phase supply.
4. How many thyristors are required to design 3-phase full wave controlled rectifier?
5. State the function of RTD
6. List two uses of MEMs in smartphones
7. Define the principle of dielectric heating
8. Define welding?
9. State the function of inverter in UPS
10. Mention any two applications of dielectric heating
11. Define Transfer function.
12. List any two thyristor devices.
13. Draw ladder diagram for AND logic
14. Draw ladder diagram for OR logic.
15. Give 2 examples for Closed loop system
16. Define closed loop control system.

PART-B

Instructions:

1. Answer any **SIX** questions
2. Each question carries **THREE** marks

6 X 3 = 18

17(a). Draw the Volt ampere characteristics of DIAC and label its points

----- OR -----

17(b). Mention any three limitations of series voltage regulated power supply

18(a). What is the need for a controlled rectifier?

----- OR -----

~~18(b).~~ Draw the circuit diagram of 3- phase half wave controlled rectifier

19(a). Explain the principle of operation of inductive transducer

----- OR -----

19(b). List the applications of Thermocouple

~~20(a).~~ List six applications of resistive welding

----- OR -----

20(b). Mention any six applications of induction heating.

21(a). Classify the choppers based on principle of operation?

----- OR -----

~~21(b).~~ List out the disadvantages of PLCs.

~~22(a).~~ Draw the circuit of HF power source for induction heating and explain

----- OR -----

22(b). State the limitations of transfer function.

~~23(a).~~ Draw ladder diagram for AND logic and write PLC code?

----- OR -----

23(b). Draw ladder diagram for OR logic and write the PLC code?

24(a). Give examples of closed loop control systems.

----- OR -----

~~24(b).~~ Write the advantages of closed loop system.

Instructions:

1. Answer any **SIX** questions
2. Each question carries **FIVE** marks

6 X 5 = 30

25(a). Explain the working of Servo stabilizer? 1.20

----- OR -----

25(b). Explain the limitations of series voltage regulated power supplies.

26(a). Explain the working of parallel inverter with a circuit diagram

----- OR -----

26(b). Explain the principle of operation of 3-phase full wave controlled rectifier with a circuit diagram 2.9

27(a). Explain the working principle of RTD

----- OR -----

27(b). Draw and Explain Pulsed Ultrasonic flaw detector

28(a). Explain the basic circuit of AC resistive welding.

----- OR -----

28(b). Explain the principle of induction heating

29(a). Explain the principle of operation of 3-phase half wave controlled rectifier with a circuit diagram 2.8

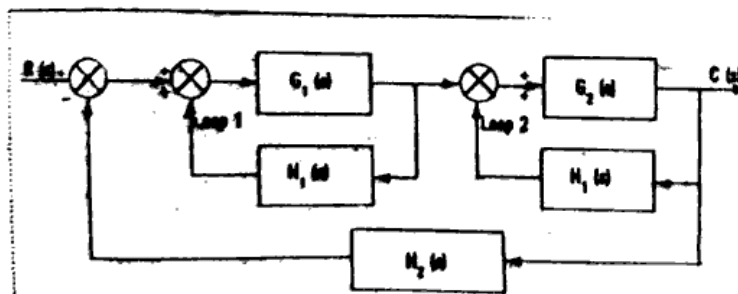
----- OR -----

29(b). Explain the retentive ON delay timer instruction with timing diagram?

30(a). Draw the circuit of HF power source for induction heating and explain its working.

----- OR -----

30(b). Reduce the given block diagram into open loop form.



31(a). Explain the importance of PLC counters..

----- OR -----

31(b). List out any five advantages of PLCs.

32(a). Compare Open loop and Closed loop control systems.

----- OR -----

32(b). Give the properties of transfer function.