

S.B. Roll No.....

INDUSTRIAL ELECTRONICS AND CONTROL OF DRIVES
5th Exam/Elect./EEE/2528/May'2017

Duration:3 hrs

M.Marks:75

SECTION-A

Q 1. Fill in the blanks: -

10x1.5=15

- a) SCR stands for.....
- b) The most commonly used method for firing of an SCR is the.....
- c) A triac can be fired.....
- d) Freewheeling diode restricts the flow of inductive current to pass through.....
- e) Dual converter can be used to achieve braking.
- f) Function of an inverter is.....
- g) Cycle of a dc chopper circuit controls the load voltage.
- h) DC drives are not suitable in hazardous are due to
- i) Maintenance cost of electric control system is..... in comparison to the conventional systems.
- j) The major part of a UPS that converts dc. into ac. is called.....

SECTION-B

Q 2.Attempt any five question:-

5x6=30

- i. Explain the working principal of a UJT.
- ii. Explain the function of freewheeling diode.
- iii. What is dual converter? Explain its working principle with the help of a block diagram.
- iv. What do you mean by class C chopper? Explain.
- v. What is cyclo converter? State its applications.
- vi. Explain speed control of single-phase induction motor using cyclo converter.
- vii. What is UPS? Discuss the circuit of an ON-Line UPS.

SECTION-C

Q3.Attempt any Three question:-

3x10=30

- a. Explain the construction and V-I characteristics of an SCR. What is the role of gate terminal?
- b. Explain with circuit diagram and waveform the working of a full wave single-phase half controlled bridge rectifier.
- c. Explain with the help of a circuit diagram the external pulse commutation process and mention its advantages
- d. Explain the methods of triggering of thyristor in details.
- e. Explain with the help of a circuit diagram the scheme for speed control of a universal motor.