

**GOVERNMENT COLLEGE OF ENGINEERING, JALGAON**

(An Autonomous Institute of Government of Maharashtra)

National Highway No.6, JALGAON – 425 002

Phone No.: 0257-2281522

Fax No.: 0257-2281319

Website : www.gcoej.ac.in

E-mail : princoej@redifmail.com

Name of Examination : **Summer 2021** - (Preview)Course Code & Course Name : **EE352U - Power Electronics**Generated At : **19-04-2022 13:09:13**Maximum Marks : **60**Duration : **3 Hrs**[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

**1) Solve any two sub-questions**

- a) Explain the UJT trigger method for controlling firing angle of an SCR. [6]
- b) Draw & explain the characteristics of SCR. [6]
- c) Explain the working of a  $1 - \Phi$  full bridge voltage source inverter with R load. [6]

**2) Solve any two sub-questions**

- a) Explain the working of 1-phase full wave controlled rectifier using 'RL' load [6]
- b) Explain the working of 3-phase half wave controlled rectifier using 'R' load. [6]
- c) Explain comparison between controlled and uncontrolled rectifiers. [6]

**3) Solve any two sub-questions**

- a) Explain the step-up DC-DC converter with neat circuit diagram & waveforms [6]
- b) Explain basic chopper operation with the duty cycle control strategy. [6]
- c) What are commutation methods of SCR. Explain natural commutation. [6]

**4) Solve all sub-questions**

- a) Discuss the PWM switching scheme for the inverter. [6]
- b) What is the necessity of an UPS? Draw & explain the block diagram of UPS. [6]

**5) Solve all sub-questions**

- a) Explain DIAC and TRIAC with symbols and characteristics. [6]
- b) Explain Series inverter. [6]

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