Seat No.

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MAR_APR 2026 SUMMER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Power Electronics

Sub. Code: 81648/81858

Day and Date: Monday ,25-05-2026 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:
1. **All questions are compulsory**
2. **Draw neat labelled diagrams wherever necessary**
3. **Figures to the right indicate full marks**
4. **Use of Scientific calculator is allowed**

Q1) Solve following MCQ. **[14]**

i. A single phase bridge rectifier.
- A. Can not operate without an isolating transformer.
- B. Can not operate with an isolating transformer.
- C. Can operate without an isolating transformer.
- D. None of the above.

ii. A power MOSFET has three terminal called
- A. Drain,Source,Base
- B. Drain,Source,Gate
- C. Collector,Emitter and Gate
- D. Collector,Emitter and Base

iii. In Thyristor,anode current is made up of
- A. Electrons Only
- B. Holes Only
- C. Electrons OR holes
- D. Electrons And Holes

iv. For an SCR,di/dt protection is achieved through the use of
- A. Resistor in series with SCR
- B. Inductor and Resistor in series with SCR
- C. Inductor in series with SCR
- D. Inductor in Parallel with SCR

v. An SCR is considerd to be Semi-Controlled device because
- A. It Can be turned OFF but not ON with gate pulse.
- B. It condut only during Positive half cycle.
- C. It Can be turned ON but not OFF with gate pulse.
- D. It Can be turned ON and OFF with gate pulse.

vi. A freewheeling diode is connected across inductive load will provide

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A. Quick turn On
B. Slow turn Off
C. Reduce Utilization factor
D. Improve Power factor

vii. A chopper can be operated with
A. Pulse width modulation only
B. Amplitude modulation only
C. Frequency modulation only
D. Both PWM and FM

Q2) Solve Any Two Questions below. **[14]**

a. List the turn on method of SCR and Explain any one of it. **[7]**

b. Draw and explain V-I characteristics Of GTO. **[7]**

c. With Neat sketch explain V-I Characteristics of SCR. **[7]**

Q3) Solve Any two Questions below. **[14]**

a. Explain Full controlled rectifier with R-L load along with wave form. **[7]**

b. Explain the triggering of TRIAC using DIAC. **[7]**

c. If the half wave controlled rectifire has purely resistive load of R and delay angle is $\alpha=\pi/3$. Determine A -Rectification efficiency, B-Form Factor, C-Ripple factor, D-TUF. **[7]**

Q4) Solve any Two Question below. **[14]**

a. Explain Performance parameter of Inverter. **[7]**

b. List the controlled technique of chopper and explain any one of it. **[7]**

c. Explain Switched Mode Power Supply with circuit diagram. **[7]**

Q5) Solve Any two Question below. **[14]**

a. How choppers are classified. Explain the classification in detail. **[7]**

b. Explain Uninterrupted Power supply with circuit diagram. **[7]**

c. Explain the single phase full bridge inverter with R-L load. **[7]**

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End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (101) Bachelor of Engineering (81858) Power Electronics Part 3 SEM 6
2] (1154) B.Tech. CBCS (81648) Power Electronics Part 3 SEM 6

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