Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

EI/IC-8403 (GS)

B.E. VIII Semester

Examination, May 2018

Grading System (GS)

Advanced Industrial Electronics

(Elective - IV)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt five questions.

ii) All questions carry equal marks.

1. Draw and explain the working of a GTO with suitable diagrams.

2. Draw and explain the static and dynamic characteristics of an 1GBT.

3. Explain the boost regulator and derive the expression for average output voltage in terms of duty ratio.

4. A buck regulator has an input voltage of 110V, the average load voltage is 60V and the average load current is 30A. The switching frequency is 25 kHz. The peak-to-peak ripple inductor current is 1.2A. Calculate the value of the inductor and load current.

5. What do you mean by PWM convertor? Explain the working of a sinusoidal PWM technique.

6. A 1-ϕ full bridge inverter having R = 20 Ω and L = 10 mH load, produces a square wave. It is fed from a 120 V dc input. Find the rms load voltage, first fundamental rms and THD.

7. Explain the working of a off-line Uninterruptable Power Supply (UPS).

8. Answer any four of the following:
   a) Explain the working of an RCT with the help of suitable diagram.
   b) Differentiate between non-resonant and resonant DC converters.
   c) What are the advantages of VSI over CSI?
   d) Explain any three non-drive applications of power electronics.
   e) Write OZ applications of microprocess used in power electronics.
   f) Draw the diagram of slip power controlled induction motor drive.

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