

III B.Tech I Semester Regular Examinations, November 2005**BASIC ELECTRONICS****(Common to Mechanical Engineering and Production Engineering)****Time: 3 hours****Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Draw the V- I characteristics of a zener diode. Explain the operation of regulator circuit using zener diode
(b) Explain the operation of full wave rectifier with resistance load and calculate the value of ripple factor of it. [8+8]
2. (a) Draw the output characteristics of junction transistor in C B configuration and indicate the active, cut off and saturation regions and explain the shape of the these curves.
(b) What are the different methods of triggering SCR. Explain one of these methods. [8+8]
3. (a) Distinguish between class A, class B, Class C operations of an amplifier.
(b) Compare the various types of feedback amplifiers in respect of input and output impedances. [8+8]
4. (a) Compare transistor timer with relay load control and SCR delay timer.
(b) Draw the circuit diagram of asynchronous welding control system and explain. [8+8]
5. (a) Give the principle of Induction heating. What are the merits of Induction heating.
(b) Explain the application of Induction heating for
 - i. surface hardening of steel.
 - ii. Annealing of brass and iron. [8+8]
6. (a) What is the necessity of time base in cathode ray oscilloscope? Draw any one type of time base circuits employed in CRO and explain how it produces the saw-tooth wave
(b) List the applications of C R O. [8+8]
7. Classify 8085 instruction in various groups. Give examples of instructions for each group. [16]
8. (a) Which is the fastest ADC and why?
(b) What do you mean by quantization error in A-to-D converters?
(c) Define the terms

- i. Stability
- ii. Accuracy
- iii. Conversion time
- iv. Settling time.

[5+5+6]

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