4657

Reg. No. : ....

Name : ....

Fifth Semester B.Tech. Degree Examination, September 2014
(2008 Scheme)
(Special Supplementary)
08.504 : INDUSTRIAL ELECTRONICS (MP)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Describe the principle of Dielectric heating.

2. What is TRIAC ? Draw its V-I characteristic.

3. Explain the principle of photo voltaic cell.

4. Describe two applications of induction heating.

5. Write an assembly language program to multiply two, eight bit numbers in 8051.

6. Explain the operations in stack.

7. Describe the arithmetic instructions of 8051.

8. Derive transfer function of a mechanical system.

9. Explain principle of PID controller.

10. Define rise time and peak time for a second order system.   **(4×10=40 Marks)**

PART – B

Answer **any one** question from **each** Module. **Each** question carries **20** marks.

Module – I

11. a) With the help of a neat diagram explain the working and V-I characteristic of phototransistor.   **10**

    b) With the help of diagrams explain working of bridge converter using SCR.   **10**

12. Explain the principle of induction heating and dielectric heating. Explain their important applications.   **20**

Module – II

13. a) Explain addressing modes used in 8051. Give example for each. 10

    b) Explain data transfer instructions used in 8051. 10

14. With the help of neat diagram explain internal architecture of 8051. 20

Module – III

15. a) State Routh Hurwitz criterion for stability. 5

    b) Investigate stability of a closed loop system by Routh Hurwitz criterion whose characteristic equation is given by $s^5 + 3s^4 + 7s^3 + 20s^2 + 6s + 15 = 0$. 15

16. a) Define gain margin and phase margin. 6

    b) Draw the Bode plot for the following transfer function $\dfrac{100}{s(1 + 0.1s)(1 + 0.001s)}$.

    Find gain margin and phase margin. 14

    (3×20=60 Marks)