(Pages : 3) **D – 4669**

Reg. No. : .....

Name : .....

Fifth Semester B.Tech. Degree Examination, January 2018
(2013 Scheme)
13.503 : INDUSTRIAL ELECTRONICS (MP)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **2** marks.

1. Represent $(-17)_{10}$ in 2' s compliment representation.
2. Convert $(0.BF85)_{16}$ to its octal equivalent.
3. Write the transition table of T flip flop.
4. Define butt welding.
5. Explain how moving objects are counted in industries.
6. Draw the schematic diagram of a sequence timer.
7. Explain the various timers used in 8051.
8. How does a mode 2 generate a time delay in 8051 ?
9. Compare open loop and closed loop system.
10. What is gain cross over frequency ? **(10×2=20 Marks)**

PART – B

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

Module – I

11. Explain a 3 bit parallel in serial out shift register using D flip flops. **20**
12. Explain the working and V-I Characteristics of SCR with neat diagrams. **20**

P.T.O.

Module – II

13. i) Explain the different types of resistance welding schemes. **10**

ii) Explain how pH measurement is done in industries. **10**

14. i) How is a sequence timer implemented ? Explain with neat diagrams. **10**

ii) Explain the role of variable area meter and mass flow measurement technique in industries. **10**

Module – III

15. a) Explain the following instructions.

i) MUL

ii) DIV

iii) DJNZ

iv) CJNE

v) RRC **10**

b) Find the content of register A after the following code in each case

i) MOV A, #37H

ANL A, #0CAH

ii) CLR A

ORL A, 99H

CPL A **4**

c) Find the CY and AC flag for each of the following cases.

i) MOV A, #3FH

ADD A, #45H

ii) MOV A, #0FFH

SETB C

ADDC A, #00 **6**

16. i) Write an 8051 assembly language program to find largest of an array of 8 bit numbers. **10**

ii) Write a program to add an array of 8 bit BCD numbers. **10**

Module – IV

17. Draw the bode plot for the transfer function

$G(s) = 50/\{s(1+0.25s)(1+0.1s)\}$

From the graph determine

i) gain cross over frequency

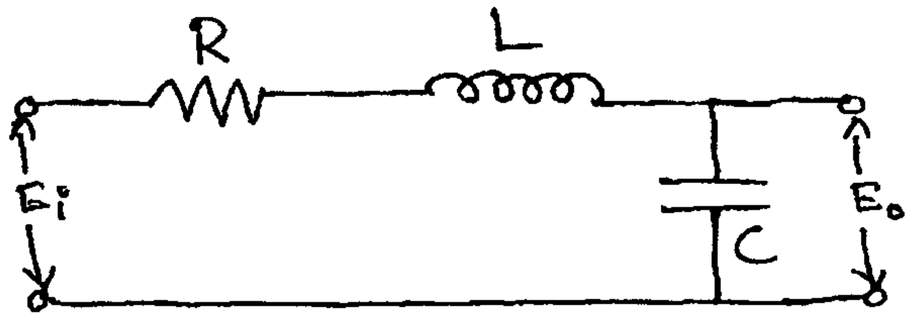
ii) Phase cross over frequency

iii) GM and PM

iv) Stability of system. **20**

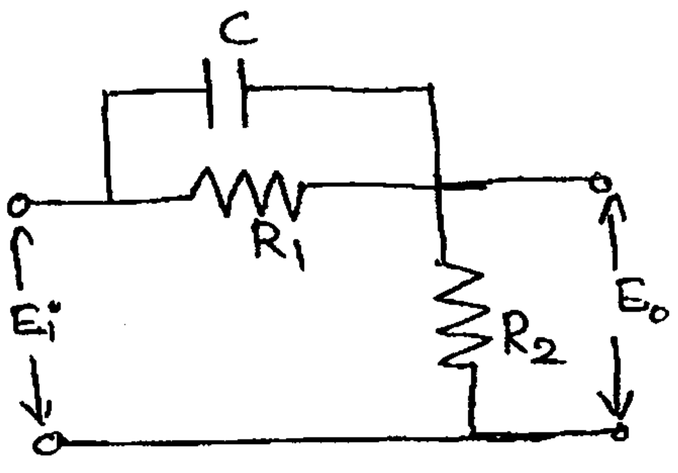
18. Determine the transfer function of the following electrical system.

i)



10

ii)



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