Exam No._____

GANPAT UNIVERSITY

B. Tech Semester – III Information Technology
Regular Examination Nov - Dec 2012
2IT302: COMPUTER SYSTEM ORGANIZATION

Time: 3 Hours] **[Total Marks: 70**

Instructions:

1. Attempt all questions.
2. Figures to the right indicate full marks
3. Each section should be written in a separate answer book

SECTION-I

1. **(A)** Answer the following **[5]**
   (1) Define term: Instruction.
   (2) What is the difference between EEPROM and flash memory?
   (3) Which function carried out by accumulator register?
   (4) Define term: Microprocessor.
   (5) Why microprocessor 8085 refer as 8-bit Microprocessor.
   (B) Explain 8085 microprocessor bus organization in brief. **[4]**
   (C) Explain flag register in brief **[3]**

OR

1. **(A)** Answer the following **[5]**
   (1) How many bits are used to represent memory address in 8085
   (2) Which function is carried out by data bus?
   (3) Which control signal is used to De-multiplex $AD_0 - AD_7$.
   (4) When SIGN flag is set in 8085 microprocessor
   (5) Which instruction is used to stop program execution?
   (B) Discuss 8085 registers in brief. **[4]**
   (C) Write an ALP to store 57H in register D and 1FH in register B. Perform addition on content of register D and B. Store result at memory location A001H. **[3]**

2. **(A)** Explain different type of memory in brief. **[5]**
   (B) Explain Following Instruction **[6]**
   (i) ADI (ii) LXI (iii) MVI

OR

2. **(A)** Draw and Discuss pin diagram of 8085 microprocessor. **[5]**
   (B) Explain Following Instruction. **[6]**
   (i) CMP (ii) XRI (iii) LDA

3. Answer the following (Any Three) **[12]**

   (1) Explain Arithmetic Micro-operation in brief.
   (2) Discuss John Van Neumann model in detail
   (3) Write a short note on "Five Generation of Computers"
   (4) Write a short not on "Addressing modes"

[P.T.O]

SECTION-II

4. **(A)** Answer the following **[5]**
   (1) Convert $(9756.2)_{10}$ to binary number.
   (2) Define term : Maxterm
   (3) $(14D2)_{16}$ = (_____)$_8$
   (4) How many flip- flops are used to design 6-bit register?
   (5) Find gray code of $(101011)_2$.

   (B) Prove (A+B)' = A'. B' and (A.B)' = A'+ B' **[4]**

   (C) Implement Boolean function F = XY+XY'Z+X'Y'+X' using basic logic gates. **[3]**

OR

4. **(A)** Answer the following **[5]**
   (1) Convert $(1011110.11)_2$ to decimal number
   (2) $(167)_8$ = (_____) 16
   (3) Define term : Minterm
   (4) Perform 100001 – 10011 using 1's complement method
   (5) find 9's complement of $(234.25)_{10}$

   (B) Minimize the following Boolean function **[4]**
   F (W, X, Y, Z) = Σ (0, 1, 2, 3, 7, 8, 9, 11, 14, 15) using Karnaugh map method.

   (C) Explain full adder in detail. **[3]**

5. **(A)** Explain combinational circuit which performs subtraction on two bits. **[3]**

   (B) Write the difference between combinational and sequential circuit **[4]**

   (C) Write a short note on "De- Multiplexer". **[4]**

OR

5. **(A)** Explain 3 X 8 decoder and also construct 4 X 16 decoder using 3 X 8 decoder **[4]**

   (B) Discuss Tabulation method for to minimize Boolean function with an example **[4]**

   (C) Explain 8 X 1 Multiplexer in detail **[3]**

6. Answer the following (Any Three) **[12]**

   (1) Explain Master- Slave JK Flip- Flop in brief.
   (2) Write a short not on "BCD Adder".
   (3) Explain RS Flip – Flop in brief
   (4) Discuss serial adder in detail.

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