

Seat No: _____

GANPAT UNIVERSITY
B.TECH SEM. V. BIOMEDICAL & INSTRUMENTATION ENGINEERING
CBCS REGULAREXAMINATION NOVEMBER 2014
2BM503 - MICROPROCESSOR ARCHITECTURE & INTERFACING
TIME: - 3 HOURS **TOTAL MARKS: - 70**
INSTRUCTION: - 1. Write the answer of each section in separate answer sheet.
2. Figure to the right indicates full marks.
3. Assume suitable data if necessary.

SECTION-I

Que-1 **12**

- (a) Classify different memories with brief description of each.
- (b) Explain Instruction Fetch Operation with suitable figure.

OR

Que-1 **12**

- (a) What is timing diagram? Explain timing diagram of byte transfer from memory
- (b) Explain Pin diagram of 8085 MPU.

Que-2 **11**

- (a) Draw interfacing diagram of 8085 with R/W with decoder circuit and also explain its address decoding scheme.
- (b) Explain all Branching Instructions

OR

Que-2 **11**

- (a) Explain Peripheral mapped and memory mapped I/O with suitable diagram.
- (b) Draw and explain functional block diagram of 8085

Que-3 **12**

- (a)
 1. How many address lines are necessary on the chip of 2K (2048) byte memory?
 2. How many memory locations can be addressed by microprocessor with 15 address lines?
- (b) Explain Machine cycle, status and Control Signals.
- (c) Machine Control Instructions

SECTION-II

Que-4 **12**

- (a) Briefly explain operation of STACK.
- (b) Draw and explain timing diagram for STA Instruction for Memory Mapped I/O.

OR

- Que-4 (a) Explain conditional loop and counter with generalize flow chart. 12
 (b) Write a program and flow chart to generate square waveform for 2Hz frequency with 30% duty cycle. (Hint: use 24T states, Crystal freq. 1MHz)
- Que-5 (a) Write a program and flow chart for Division of Two no. 11
 (b) Write a program and flow chart to convert Binary-To-BCD No. 11
 OR
- Que-5 (a) Write a program and flow chart to convert HEX-To-ASCII No. 11
 (b) Write a program and flow chart for BCD subtraction. 12
- Que-6 (a) Calculate delay in the following loop, assuming the system clock period is 0.33 μ s.

```

    LXI B,12FF H
  Delay: DCX B
        XTHL
        XTHL
        NOP
        NOP
        MOV A,C
        ORA B
        JNZ: Delay
  
```

(XTHL-16 T-states, DCX- 6 T-states)

- (b) What is an Interrupt? Explain its various applications.
 (c) Describe Conditional Call and Return Instructions.

Best of Luck