# Code : 031611

## B.Tech. 6th Semester Exam., 2016

## MICROPROCESSOR AND ITS APPLICATION

*Time* : 3 hours *Full Marks* : 70

*Instructions* :

*(i) The marks are indicated in the right-hand margin.*

*(ii) There are* ***NINE*** *questions in this paper.*

*(iii) Attempt* ***FIVE*** *questions in all.*

*(iv) Question No.* ***1*** *is compulsory.*



**1.** Choose the correct alternative (any *seven*) : 2×7=14

*(a)* Intel 8085 microprocessor has

*(i)* 8 address bus

*(ii)* 16 address bus

*(iii)* 32 address bus

*(iv)* 64 address bus

*(b)* Intel 8085 can address

*(i)* 1k memory location

*(ii)* 2k memory locations

*(iii)* 16k memory locations

*(iv)* 64k memory locations







*(c)* Intel 8085 has

*(i)* 10 status flags

*(ii)* 5 status flags

*(iii)* 2 status flags

*(iv)* 6 status flags



*(d)* Program counter is a/an

*(i)* 8-bit register

*(ii)* 16-bit register

*(iii)* 32-bit register

*(iv)* 10-bit register

*(e)* STA 8050 is having

*(i)* 4 machine cycles

*(ii)* 3 machine cycles

*(iii)* 2 machine cycles

*(iv)* 1 machine cycle

*(f)* 8255 is a

*(i)* 24 pin IC

*(ii)* 32 pin IC

*(iii)* 40 pin IC

*(iv)* 16 pin IC

(g) 8257 is a

(i) programmable peripheral interface

(ii) programmable DNA controller

(iii) programmable communication interface

(iv) programmable interval timer

(h) 8253 is a

(i) 24 pin IC

(ii) 40 pin IC

(iii) 16 pin IC

(iv) 32 pin IC



(i) 8255 has

(i) one mode of operation

(ii) two modes of operation

(iii) three modes of operation

(iv) four modes of operation

(j) Intel 8086 is a/an

(i) 8-bit microprocessor

(ii) 16-bit microprocessor

(iii) 32-bit microprocessor

(iv) 64-bit microprocessor









**2.** (a) Discuss the functions of the following pins of 8085 microprocessor : 7

HLDA, $\overline{\text{INTA}}$, RESET IN, $(x_1, x_2)$, SOD

(b) Discuss the register organization of 8085 microprocessor. 7

**3.** (a) Describe the operations performed by the following instructions of 8085 microprocessor : 8

ANAM, INX B, RAR, RNC, PUSH B, XTHL

(b) Draw and explain the timing diagram of MVI B 07H. 6



**4.** (a) Write an ALP to add two 8-bit numbers and sum is 16-bit in 8085. 6

(b) Write an ALP to find 2's complement of a 16-bit number of 8085 microprocessor. 8

**5.** Write an ALP to largest number in a data array. 14

**6.** (a) Discuss the operating modes of 8255. 7

(b) Write a control word for the following configuration : 7

Port A-output; Mode of port A-Mode 1
Port B-output; Mode of Port B-Mode 0
PC lower-output; Cupper-output

7. *(a)* Discuss the operating principle of 8253. 7

*(b)* Discuss the pin description of 8251. 7

8. *(a)* Explain the functions of the following pins of 8086 microprocessor : 7

A18/S5, TEST, READY, RESET, QSI (INTA)

*(b)* Discuss the different segments and segment registers of 8086 microprocessor. 7



9. *(a)* Write the operations performed by the following instructions : 7

IMUL CX, 8 TOBSB, DAA, CMPAL, 58H, ANDCL, 06H

*(b)* Discuss the addressing modes of 8086 microprocessor. 7

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