GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

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Registration No: | | | | | | | | | | |

Total Number of Pages : 2 **B.TECH**

4th Semester Regular Examination-April-May 2019

BECPC4030 Microprocessor and Microcontroller

(Regulations 2017) AEIE,ECE Branches

Time : 3 Hours Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark

Q.1. Answer *All* Questions.

a What is the highest memory capacity of 8085 microprocessor? [CO1][PO1]
a) 24KB b) 44KB c) 64KB d) 84KB

b Which register pair acts as Memory Pointer? [CO1][PO1]
a) BC b) PC c) DL d) HL

c Which register is used as a default counter in case of string and loop instructions. [CO1][PO2]
a) DX b) CX c) BX d) AX

d The internal RAM memory of the 8051 is [CO2][PO1]
a) 32 bytes b) 64 bytes c) 128 bytes d) 256 bytes

e All the functions of the ports of 8255 are achieved by programming the bits of an internal register called [CO2][PO2]
a) data bus control b) read logic control c) control word register d) none

f The 8279 normally provides a maximum of _____ seven segment display interface with CPU. [CO2][PO2]
a) 8 b) 16 c) 32 d) 18

g Which of the following is not a machine control flag? [CO3][PO1]
a) Direction flag b) Interrupt flag c) Overflow flag d) Trap flag

h The BIU contains instruction queue of size …… bytes [CO3][PO2]
a) 8 b) 6 c) 4 d) 12

i The 8051 can handle _____ interrupt sources. [CO4][PO1]
a) 4 b) 5 c) 6 d) 7

j Identify the non-maskable interrupt from the following. [CO4][PO2]
a) RST 7.5 b) RST 6.5 c) RST 5.5 d) RST 4.5

PART – B: (Short Answer Questions) 10x2=20 Marks

Q.2. Answer *ALL* questions

a Explain with an example, how a 20 bit physical address is generated in 8086? [CO1][PO1]

b Give the different types of command words used in 8259A. [CO1][PO2]

c What is the use of ALE? [CO2][PO1]

d List the operation modes of 8255. [CO2][PO2]

e State the function of RS1 and RS0 bits in the flag register of Intel 8051 microcontroller. [CO3][PO1]

f What are the modes of operation of DMA controller? [CO3][PO2]

g Define pipelining. [CO3][PO3]

h Explain the 16-bit registers DPTR and SP of 8051. [CO4][PO1]

i What are 8086 interrupt types? [CO4][PO2]

j What are the functions performed by 8251? [CO4][PO2]

PART – C: (Long Answer Questions) 4x15=60 Marks

Answer *ALL* questions

Q.3			
a	Briefly discuss the instruction sets of 8085 with examples.	7	[CO1] [PO1]
b	Let at the program memory location 4080, the instruction MOV B, A (opcode 47H) is stored while the accumulator content is FFH. Illustrate the execution of this instruction by timing diagram.	8	[CO1] [PO2]
	OR		
c	Briefly explain the interrupts for 8085 with neat circuit diagram and also discuss the SIM and RIM instruction format.	10	[CO1] [PO1]
d	Write an assembly language program to calculate the sum of series of data using 8085 microprocessor.	5	[CO1] [PO2]
Q.4			
a	With neat diagram describe the working of 8086 in minimum mode bus cycle.	8	[CO2] [PO1]
b	Explain the following instruction with examples i) CMP ii) XLAT iii) XCHG iv) DIV v) DAA vi) LDS vii) SHR	7	[CO2] [PO2]
	OR		
c	Explain the various string manipulation instructions with example.	8	[CO2] [PO1]
d	Interface two 4K X 8 EPROMS and two 4K X 8 RAM chips with 8086, microprocessor and draw the suitable circuit showing their interfacing ?	7	[CO2] [PO2]
Q.5			
a	Explain the working of different blocks of 8254 PIT with a neat figure.	7	[CO3] [PO1]
b	With block diagram, explain working principle of 8255 PPI.	8	[CO3] [PO2]
	OR		
c	Draw and discuss internal block diagram of 8251 USART.	8	[CO3] [PO2]
d	Draw and explain block diagram of 8259 PIC.	7	[CO3] [PO3]
Q.6			
a	Explain briefly the addressing modes of 8051 with example.	7	[CO4] [PO1]
b	Explain briefly the interrupts of 8051, indicate their vector address.	8	[CO4] [PO2]
	OR		
c	List all the registers used in 8051 microcontroller in brief.	6	[CO4] [PO1]
d	Write an assembly language program for 8051 to generate square ware of 1 KHZ on port pin P1.1. User timer 1 and assume crystal frequency to be 12 MHZ. Clearly show the necessary calculation.	9	[CO4] [PO2]

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