N-23/2111 22177/N

Computer Organization and Architecture-104

Sem-I

Syll-Dec/2017

Time:-3hrs M.M.-70

Note: Candidates are required to attempt five questions in all, selecting two questions each from sections A and B and entire section C.

Section - A

Q1. (a)	Draw and explain Half Adder.	5
(b)	Explain the operation of JK flip-flop using NAND gate.	5.5
Q2.	Simplify the given K-map and draw logic circuit using gates. $F(A,B,C,D)= \sum m (0,3,6,7,9,13,14,15)$	10.5
Q3.	Draw and explain 4-bit Asynchronous counter.	10.5
Q4.	Define addressing mode and explain the basic addressing modes with an example for each.	10.5

Section - B

Q5.	What is a control unit? What are the basic functions of control unit? What is the general model of a control unit? Illustrate a CPU indicating all its functional units and corresponding control signals.	10.5
Q6.	Draw and explain the block diagram of 8085 microprocessor.	10.5
Q7. (a)	Is it mandatory to use DMA in every computer system? Give your views and support your answer.	5
(b)	Explain Set-Associative Mapping with an example.	5.5
Q8.	Explain memory hierarchy. What is cache memory? Why is it used?	10.5

Section - C

Q9. (a)	How interrupt requests from multiple devices can be handled?	3
(b)	Why asynchronous counter is called ripple counter?	3
(c)	Why clock is used in flip flop?	3
(d)	What is relative addressing mode? When is it used?	3
(e)	What do you understand by the effective address of an operand?	3
(f)	What do you mean by programmed I/ O?	3
(g)	What is the use of microprocessor 8085?	3
(h)	What is advantage of interrupt initiated i/o?	3
(i)	What are the basic computer instruction formats?	2
(j)	How many laws are in Boolean algebra?	2