R15

Code No: 821AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MCA I Semester Examinations, January - 2020
COMPUTER ORGANIZATION

Time: 3hrs **Max.Marks:75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

5 × 5 Marks = 25

1.a)	Convert the decimal number 5647 to i) BCD ii)Excess-3 code.	[5]
b)	What is locality of reference?	[5]
c)	Discuss the function of instruction queue in 8086.	[5]
d)	What is the need for DMA transfer?	[5]
e)	What are instruction hazards?	[5]

PART - B

5 × 10 Marks = 50

2. Simplify the Boolean expression using K-MAP
$F(A,B,C,D) = \sum m(1,2,3,8,9,10,11,14) + d(7,15)$. [10]

OR

3. Design the combinational circuit of Binary to Excess-3 code convertor. [10]

4. Discuss about direct and set-associative mapping with examples. [10]

OR

5. A two way set associative cache memory uses blocks of four words. The cache can accommodate a total of 2048 words from the main memory. The main memory size is 128 K*32.
a) Formulate all pertinent information required to construct the cache memory.
b) What is the size of the cache memory? [10]

6. Explain in detail the register organization of 8086. [10]

OR

7. Write an assembly language program to concatenate two strings. [10]

8. Describe in detail about IOP Organization. [10]

OR

9.a) Discuss the differences between subroutine and interrupt service routines.
b) Discuss the design of a typical input or output interface. [10]

10.a) Describe in detail about pipeline processing.
b) Explain in detail about data hazards. [10]

OR

11. Describe the architecture of a shared memory multiprocessor. [10]

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