

# University of Mumbai

Program: Cyber Security

Curriculum Scheme: Rev2019

Examination: SE Semester :III

Course Code: CSC304

Course Name: Digital Logic & Computer Architecture

Time: 2 hour 30 minutes

Max. Marks: 80

<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	Which of the following is a universal logic gate?
Option A:	OR
Option B:	AND
Option C:	XOR
Option D:	NAND
2.	Number 85 in BCD code is :
Option A:	1101 1010
Option B:	1000 1100
Option C:	1000 0101
Option D:	1101 1001
3.	Vector Processor are which type of systems :
Option A:	SISD
Option B:	SIMD
Option C:	MIMD
Option D:	MISD
4.	Pipelining increases _____ of the processor.
Option A:	Throughput
Option B:	Storage
Option C:	Latency
Option D:	Efficiency
5.	The ISA standard Buses are used to connect
Option A:	RAM and processor
Option B:	GPU and processor
Option C:	Harddisk and Processor
Option D:	CD/DVD drives and Processor
6.	If A and B are the inputs of a half adder, the carry is given by
Option A:	A AND B
Option B:	A OR B

Option C:	A XOR B
Option D:	A EX-NOR B
7.	During Fetch Sequence address of next instruction is stored in
Option A:	MDR
Option B:	MAR
Option C:	IR
Option D:	PC
8.	Which of the following memory of the computer is used to speed up the computer processing?
Option A:	Cache memory
Option B:	RAM
Option C:	ROM
Option D:	DRAM
9.	2's complement of 11001011 is?
Option A:	01010111
Option B:	11010100
Option C:	00110101
Option D:	11100010
10.	Convert the following binary number to octal. 010111100 <sub>2</sub>
Option A:	172 <sub>8</sub>
Option B:	272 <sub>8</sub>
Option C:	174 <sub>8</sub>
Option D:	274 <sub>8</sub>

<b>Q2</b>	<b>Solve any Two Questions out of Three</b>	<b>10 marks each</b>
A	Write short note on Flynn's classification.	
B	Explain Booths multiplication algorithm with an example.	
C	Differentiate between Hardwired control unit and Micro programmed control unit along with the advantages and disadvantages of each.	

<b>Q3.</b>	<b>Solve any Four Questions out of Six</b>	<b>5 marks each</b>
A	Write Short Note on SR Flip Flop	
B	Explain any five addressing Modes with examples	
C	Write a short note on types of RAM and ROM	
D	Write a Short Note on Encoder	
E	Explain in detail memory interleaving.	
F	Explain in detail 4:1 Multiplexer	

<b>Q4.</b>	
<b>A</b>	<b>Solve any Two</b> <span style="float: right;"><b>5 marks each</b></span>
i.	Describe the detailed Von-Neumann Model with a neat block diagram.
ii.	Explain various pipeline hazards with example.
iii.	Write about IEEE 754 floating point format.
<b>B</b>	<b>Solve any One</b> <span style="float: right;"><b>10 marks each</b></span>
i.	Calculate the following to binary and then to gray code. a) $1001_{16}$ b) $7623_8$ c) $1234_8$ d) $1257_{10}$ e) $2239_{10}$
ii.	Explain PCI bus in detail.

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