

**University of Mumbai**  
**Examination 2020 under cluster \_\_ (Lead College: \_\_\_\_\_)**

Examinations Commencing from 7<sup>th</sup> January 2021 to 20<sup>th</sup> January 2021

Program: **Computer Engg**

Curriculum Scheme: Rev2019

Examination: SE Semester III

Course Code: CSC304

Course Name: Digital Logic and Computer Organization and Architecture

Time: 2 hour

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.	The binary number (10101) is equivalent to decimal number_____
Option A:	19
Option B:	12
Option C:	27
Option D:	21
2.	The decimal number (11.75) is equivalent to binary number_____
Option A:	(1011.11) <sub>2</sub>
Option B:	(1000.011) <sub>2</sub>
Option C:	(1010.11) <sub>2</sub>
Option D:	(1011.10) <sub>2</sub>
3.	The input devices use _____ to store the data
Option A:	Primary Memory
Option B:	Secondary Memory
Option C:	Buffer
Option D:	External Memory
4.	The I/O devices are connected to the CPU via _____.
Option A:	SDRAM's
Option B:	Control circuits
Option C:	Signals
Option D:	BUS
5.	Which of the following is used to choose between incrementing the PC or performing ALU operations?
Option A:	Conditional Units
Option B:	Multiplexer
Option C:	Control Codes
Option D:	Memory bus
6.	Which of the following information holds the information before going to the decoder ?

Option A:	Control register
Option B:	Data register
Option C:	Accumulator
Option D:	Address register
7.	If the control signals are generated by combinational logic, then they are generated by a type of _____ controlled unit.
Option A:	Micro programmed
Option B:	Software
Option C:	Logic
Option D:	Hardwired
8.	Which is the simplest method of implementing hardwired control unit?
Option A:	State Table Method
Option B:	Delay Element Method
Option C:	Sequence Counter Method
Option D:	Using Circuits
9.	When the data at a location in cache is different from the data located in the main memory, the cache is called _____
Option A:	Unique
Option B:	Inconsistent
Option C:	Variable
Option D:	Fault
10.	According to boolean law: $A + 1 = ?$
Option A:	A
Option B:	1
Option C:	0
Option D:	(A')
11.	The logic gate that will have HIGH or "1" at its output when any one of its inputs is HIGH is a(n): _____
Option A:	NOT Operation
Option B:	AND gate
Option C:	OR gate
Option D:	EX-OR gate
12.	DeMorgan's theorem states that
Option A:	$(AB)' = A' + B'$
Option B:	$(A + B)' = A' * B'$
Option C:	$A' + B' = A'B'$
Option D:	$(AB)' = A' + B$
13.	Which of the following equations would accurately describe a 4-input OR gate when $A = 1, B = 1, C = 0$ and $D = 0$ ?
Option A:	$1 + 1 + 0 + 0 = 0$
Option B:	$1 + 1 + 0 + 0 = 01$

Option C:	$1 + 1 + 0 + 0 = 1$
Option D:	$1 + 1 + 0 + 0 = 00$
14.	Which of the following is not the form of registers?
Option A:	Accumulator
Option B:	Instruction Register
Option C:	Stack Pointer
Option D:	Base Register
15.	A shared communication path consisting of one or more connection lines between registers is known as
Option A:	Integrated Circuits
Option B:	Transistor
Option C:	Bus
Option D:	Register Transfer
16.	The adder which performs the addition of two binary numbers serially bit by bit starting with lsb is
Option A:	Serial Adder
Option B:	Ripple Carry Adder
Option C:	Carry Look-ahead Adder
Option D:	Parallel Adder
17.	The memory that communicates directly with CPU is
Option A:	Secondary memory
Option B:	Main Memory
Option C:	Internal Memory
Option D:	Cache Memory
18.	BCD counter is also called as _____
Option A:	Ripple counter
Option B:	Decade counter
Option C:	Ring counter
Option D:	Johnson counter
19.	Bistablemultivibrator can be normally seen as _____ in all state.
Option A:	Stable
Option B:	Unstable
Option C:	Saturated
Option D:	Independent
20.	How many 3-line-to-8-line decoders are required for a 1-of-32 decoder?
Option A:	1
Option B:	2
Option C:	4
Option D:	8

<b>Q2.</b> <b>(20 Marks )</b>	<b>Solve any Two Questions out of Three 10 marks each</b>
A	Explain Hardwired Control Unit and Microprogrammed Control Unit.
B	Explain Flynn's Classification in detail.
C	State and Explain Memory Hierarchy.

<b>Q3.</b> <b>(20 Marks)</b>	
A	<b>Solve any Two 5 marks each</b>
i.	What are different types of memory?
ii.	What is Locality of Reference?
iii.	State and explain different types of buses?
B	<b>Solve any One 10 marks each</b>
i.	Explain different types of Hazards?
ii.	Explain Interleaved and associative memory?