

# University of Mumbai

## Examination 2020

Program: EXTC Engineering

Curriculum Scheme: Rev2016

Examination: Second Year Semester III

Course Code: ECC 303 and Course Name: DSD

Time: 1 hour

Max. Marks: 50

For the students:- All the Questions are compulsory and carry equal marks .

Q1.	The octal number (651.124) <sub>8</sub> is equivalent to _____
Option A:	(1A9.2A) <sub>16</sub>
Option B:	(1B0.10) <sub>16</sub>
Option C:	(1A8.A3) <sub>16</sub>
Option D:	(1B0.B0) <sub>16</sub>
Q2.	The octal equivalent of the decimal number (417) <sub>10</sub> is _____
Option A:	(641) <sub>8</sub>
Option B:	(619) <sub>8</sub>
Option C:	(640) <sub>8</sub>
Option D:	(598) <sub>8</sub>
Q3.	Convert the hexadecimal number (1E2) <sub>16</sub> to decimal:
Option A:	480
Option B:	483
Option C:	482
Option D:	484
Q4.	The number of values applicable in Boolean Algebra.
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q5.	The symbol + in Boolean is also known as the _____ operator.
Option A:	AND
Option B:	OR
Option C:	ADD
Option D:	SUMMATION
Q6.	In the expression $Y + X' \cdot Y$ , which operator will be evaluated first?
Option A:	'
Option B:	+
Option C:	.
Option D:	,
Q7.	Which of the following is false?
Option A:	$x+y=y+x$
Option B:	$x \cdot y=y \cdot x$

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Option C:	$x.x'=1$
Option D:	$x+x'=1$
Q8.	As per idempotent law, $X + X$ will always be equal to _____
Option A:	0
Option B:	1
Option C:	X
Option D:	2X
Q9.	The expression for involution law is _____
Option A:	$x+y=y+x$
Option B:	$x+1=1$
Option C:	$(x')'=x$
Option D:	$x.x=x$
Q10.	Who proposed the use of Boolean algebra in the design of relay switching circuits?
Option A:	George Boole
Option B:	Claude E. Shannon
Option C:	Claude E. Boole
Option D:	George Shannon
Q11.	Truth table is used to represent Boolean _____
Option A:	functions
Option B:	algebra
Option C:	operators
Option D:	addition
Q12.	Boolean Function is of the form of _____
Option A:	Truth values
Option B:	$K=f(X,Y,X)$
Option C:	Algebraic Expression
Option D:	Truth Table
Q13.	The terms in SOP are called _____
Option A:	max terms
Option B:	min terms
Option C:	mid terms
Option D:	sum terms
Q14.	Which of the following is an incorrect SOP expression?
Option A:	$x+x.y$
Option B:	$(x+y)(x+z)$
Option C:	x
Option D:	$x+y$
Q15.	The corresponding min term when $x=0, y=0$ and $z=1$ .
Option A:	$x.y.z'$

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Option B:	$X' + Y' + Z$
Option C:	$X + Y + Z'$
Option D:	$x' \cdot y' \cdot z$
Q16.	Which operation is shown in the following expression: $(X + Y')(X + Z)(Z' + Y')$
Option A:	NOR
Option B:	ExOR
Option C:	SOP
Option D:	POS
Q17.	The number of min terms for an expression comprising of 3 variables?
Option A:	8
Option B:	3
Option C:	0
Option D:	1
Q18.	The output of AND gates in the SOP expression is connected using the _____ gate.
Option A:	XOR
Option B:	NOR
Option C:	AND
Option D:	OR
Q19.	The expression $A + BC$ is the reduced form of _____
Option A:	$AB + BC$
Option B:	$(A + B)(A + C)$
Option C:	$(A + C)B$
Option D:	$(A + B)C$
Q20.	Electronic circuits that operate on one or more input signals to produce standard output _____
Option A:	Series circuits
Option B:	Parallel Circuits
Option C:	Logic Signals
Option D:	Logic Gates
Q21.	A _____ gate gives the output as 1 only if all the inputs signals are 1.
Option A:	AND
Option B:	OR
Option C:	EXOR
Option D:	NOR
Q22.	When logic gates are connected to form a gating/logic network it is called as a _____ logic circuit.
Option A:	combinational
Option B:	sequential
Option C:	systematic
Option D:	hardwired

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Q23.	The universal gate that can be used to implement any Boolean expression is
Option A:	NAND
Option B:	EXOR
Option C:	OR
Option D:	AND
Q24.	Which statement below best describes a Karnaugh map?
Option A:	It is simply a rearranged truth table
Option B:	The Karnaugh map eliminates the need for using NAND and NOR gates
Option C:	Variable complements can be eliminated by using Karnaugh maps
Option D:	A Karnaugh map can be used to replace Boolean rules
Q25.	The Boolean expression $Y = (AB)'$ is logically equivalent to what single gate?
Option A:	NAND
Option B:	NOR
Option C:	AND
Option D:	OR