University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev 2016
Examination: Third Year Semester VI
Course Code: ECC602 and Course Name: Computer Communication Network (CCN)
Time: 1 hour Max. Marks: 50

==========

==========

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

Q1.	A device that is used to connect a number of LANs is –
Option A:	Router
Option B:	Repeater
Option C:	Bridge
Option D:	Switch
Q2.	What is the function of Network Interface Cards?
Option A:	connects the clients, servers and peripherals to the network through a port
Option B:	allows you to segment a large network into smaller, efficient networks
Option C:	connects networks with different protocols like TCP/IP
Option D:	boost the signal between two cable segments or wireless access points
Q3.	Which transmission media provides the highest transmission speed in a network?
Option A:	coaxial cable
Option B:	twisted pair cable
Option C:	optical fibre
Option D:	electrical cable
Q4.	Bits can be sent over guided and unguided media as analog signal by _____
Option A:	digital modulation
Option B:	amplitude modulation
Option C:	frequency modulation
Option D:	phase modulation
Q5.	The physical layer translates logical communication requests from the _____ into hardware specific operations.
Option A:	data link layer
Option B:	network layer
Option C:	transport layer
Option D:	application layer
Q6.	If link transmits 4000 frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is _____
Option A:	32kbps
Option B:	500bps
Option C:	500kbps
Option D:	32bps

Q7.	Both Go-Back-N and Selective-Repeat Protocols use a _____.
Option A:	sliding frame
Option B:	sliding window
Option C:	sliding packet
Option D:	sliding bits
Q8.	High-level Data Link Control (HDLC) is a _____ protocol for communication over point-to-point and multipoint links.
Option A:	bit-oriented
Option B:	Byte-oriented
Option C:	Character-oriented
Option D:	Frame-oriented
Q9.	Which sublayer of the data link layer performs data link functions that depend upon the type of medium?
Option A:	logical link control sublayer
Option B:	media access control sublayer
Option C:	network interface control sublayer
Option D:	error control sublayer
Q10.	When 2 or more bits in a data unit has been changed during the transmission, the error is called _____
Option A:	random error
Option B:	burst error
Option C:	inverted error
Option D:	double error
Q11.	Which of the following is the multiple access protocol for channel access control?
Option A:	CSMA/CD
Option B:	CSMA/CA
Option C:	CSMA/CD and CSMA/CA both
Option D:	HDLC
Q12.	MAC address is of _____
Option A:	24 bits
Option B:	36 bits
Option C:	42 bits
Option D:	48 bits
Q13.	In _____ each station sends a frame whenever it has a frame to send.
Option A:	pure ALOHA
Option B:	slotted ALOHA
Option C:	CSMA
Option D:	CSMA/CD
Q14.	After performing bit stuffing on the following stream: 01101111111111111110010, the output is-
Option A:	011011111011111101111100010

Option B:	01101111111111111110010111
Option C:	10010000000000000000001101
Option D:	01101111111111111111110010
Q15.	In virtual circuit network each packet contains _____
Option A:	full source and destination address
Option B:	a short VC number
Option C:	only source address
Option D:	only destination address
Q16.	ICMP is primarily used for _____
Option A:	error and diagnostic functions
Option B:	Addressing
Option C:	Forwarding
Option D:	Routing
Q17.	The computation of the shortest path in OSPF is usually done by _____
Option A:	Bellman-ford algorithm
Option B:	Routing information protocol
Option C:	Dijkstra's algorithm
Option D:	Distance vector routing
Q18.	_____ command is used to manipulate TCP/IP routing table
Option A:	Route
Option B:	Ipconfig
Option C:	Ifconfig
Option D:	Traceroute
Q19.	If the value in protocol field is 17, the transport layer protocol used is _____
Option A:	TCP
Option B:	UDP
Option C:	ICMP
Option D:	IGMP
Q20.	Connection establishment in TCP is done by which mechanism?
Option A:	Flow control
Option B:	Three-Way Handshaking
Option C:	Forwarding
Option D:	Synchronization
Q21.	A client that wishes to connect to an open server tells its TCP that it needs to be connected to that particular server. The process is called _____
Option A:	Active open
Option B:	Active close
Option C:	Passive close
Option D:	Passive open

Q22.	In segment header, sequence number and acknowledgement number fields refer to
Option A:	Byte number
Option B:	Buffer number
Option C:	Segment number
Option D:	Acknowledgment
Q23.	The _____ field is used to detect errors over the entire user datagram.
Option A:	udp header
Option B:	Checksum
Option C:	source port
Option D:	destination port
Q24.	The port number is “ephemeral port number”, if the source host is _____
Option A:	NTP
Option B:	Echo
Option C:	Server
Option D:	Client
Q25.	The probability of the error in a transmitted block _____ with the length of the block
Option A:	Remains same
Option B:	Decreases
Option C:	Increases
Option D:	Is not proportional

University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: Third Year Semester VI
Course Code: ECC 602 and Course Name: Computer Communication Network (CCN)
Time: 1 hour Max. Marks: 50

==========

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	A
Q3.	C
Q4	A
Q5	A
Q6	A
Q7	B
Q8.	A
Q9.	B
Q10.	B
Q11.	C
Q12.	D
Q13.	A
Q14.	A
Q15.	B
Q16.	A
Q17.	C
Q18.	A
Q19.	B
Q20.	B
Q21.	A
Q22.	A
Q23.	B
Q24.	D
Q25.	C

University of Mumbai

Examination 2020

Program: BE Electronics & Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: **ECC603** and Course Name: **Antenna and Radio Wave Propagation**

Time: 1 hour Max. Marks: 50

==========

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

Q1.	The solid area through which all the power radiated by the antenna is:
Option A:	beam area
Option B:	effective area
Option C:	aperture area
Option D:	beam efficiency
Q2.	Which of the following is not the wire antenna ?
Option A:	loop antenna
Option B:	helical antenna
Option C:	dipole antenna
Option D:	horn antenna
Q3.	In circular polarization the electric field
Option A:	is confined to single plane
Option B:	has two linear components with equal amplitudes and a phase difference of $\pi/2$
Option C:	has two linear components with differing amplitudes and a phase difference of $\pi/2$
Option D:	has two linear components with equal amplitudes and a phase difference of π
Q4.	What is the minimum distance required to measure the field pattern of an antenna of diameter 2m at a frequency of 3 GHz?
Option A:	80 m
Option B:	40 m
Option C:	20 m
Option D:	10 m
Q5.	Alternating current element is given by
Option A:	Idl
Option B:	I dl cosωt
Option C:	I dl sinωt
Option D:	I
Q6.	The HΦ Component will consists of _____ field :

Option A:	Radiation
Option B:	Induction
Option C:	Radiation & Induction
Option D:	Electrostatic
Q7.	A helical antenna is used for satellite tracking because of its :
Option A:	Circular polarization
Option B:	Maneuverability
Option C:	Broad bandwidth
Option D:	Good front-to-back ratio
Q8.	The radiation resistance of a circular loop of a turn is 0.01 Ω. The radiation resistance of five turns of such a loop will be :
Option A:	0.002 Ω
Option B:	0.01 Ω
Option C:	0.05 Ω
Option D:	0.25 Ω
Q9.	Significance of Array antenna is to
Option A:	reduce the physical size of antenna
Option B:	reduce the weight of antenna
Option C:	enhance the gain of antenna
Option D:	increase the beamwidth of radiation pattern of antenna
Q10.	If an array of identical elements and excited with identical magnitude and each with a progressive phase is referred to as a
Option A:	non-uniform array
Option B:	Uniform array
Option C:	resistor array
Option D:	Unequal spaced non identical magnitude array
Q11.	In an uniform broadside array to ensure that there are no *grating lobes*, the maximum separation (dmax) between the elements should be
Option A:	dmax >2 λ
Option B:	dmax < λ
Option C:	dmax > λ
Option D:	dmax < 2 λ
Q12.	If the individual antennas of the array are spaced equally along a straight line. Then It is ----------array.
Option A:	Circular
Option B:	Non-Linear.
Option C:	Linear.
Option D:	Rectangular

Q13.	In horn antenna, to radiate the energy in the forward direction, the waveguide should be provided with an extended aperture to make the abrupt discontinuity of the wave into a gradual transformation. This is called as _____
Option A:	flaring
Option B:	fading
Option C:	truncating
Option D:	terminating
Q14.	Antenna that does not belong to the horn antenna family among the following are:
Option A:	Pyramidal
Option B:	Conical
Option C:	bi-conical
Option D:	linear wire
Q15.	A parabola in receiving mode, the radiation will converge at a spot which is known as the
Option A:	Ground point.
Option B:	Crest
Option C:	Vertex point
Option D:	focal point.
Q16.	In E-sectoral Horn antenna has
Option A:	only broad wall of rectangular waveguide is flared
Option B:	only short wall of rectangular waveguide is flared
Option C:	both walls of rectangular waveguide are flared
Option D:	both walls of rectangular waveguide are not flared
Q17.	Fundamental mode of rectangular microstrip patch antenna (RMSA) is
Option A:	TM_{01}
Option B:	TM_{10}
Option C:	TM_{00}
Option D:	TM_{11}
Q18.	Looking at the current variation along the patch of MSA, the current is _____ at the center and _____ near the left and right edges.
Option A:	maximum, minimum
Option B:	minimum, maximum
Option C:	Half, minimum
Option D:	zero, maximum
Q19.	In Microstrip antenna with coaxial-line feed, as thickness of substrate increases, antenna impedance becomes
Option A:	inductive
Option B:	capacitive
Option C:	resistive
Option D:	zero

Q20.	How are the infinitesimal dipoles represented in terms of antenna length and signal wavelength :
Option A:	$l \leq (\lambda /50)$
Option B:	$(\lambda/50) < l \leq (\lambda /10)$
Option C:	$l = \lambda/2$
Option D:	$l = \lambda/4$
Q21.	Which type of ground wave travels over the earth surface by acquiring direct path through air from transmitting to receiving antennas?
Option A:	Surface wave
Option B:	Space wave
Option C:	Ground wave
Option D:	Super Wave
Q22.	The radio waves were demonstrated experimentally by
Option A:	Hertz
Option B:	Maxwell
Option C:	Marconi
Option D:	Armstrong
Q23.	Determine critical frequency for reflection at vertical incidence if the maximum value of electron density is 2.24 x 10^6 per C.C (Cubic Centimeter) if value of g = 9 approx.
Option A:	13.46KHz
Option B:	15.15KHz
Option C:	20.16KHz
Option D:	25.18Khz
Q24.	The critical frequency of E layer which is observed at a particular time are 2.5MHz Calculate the maximum electron density of the layer
Option A:	77.16X 10^9 CC/meter
Option B:	25.5X10^9CC/meter
Option C:	30.5X10^9CC/meter
Option D:	35.5X10^9CC/meter
Q25.	The line of side distance or range of space wave propagation is given by
Option A:	$d=3.57[\sqrt{h_t}+\sqrt{h_r}]$
Option B:	$d=1.75[\sqrt{h_t}+\sqrt{h_r}]$
Option C:	$d=2.57[\sqrt{h_t}+\sqrt{h_r}]$
Option D:	$d=2.57[\sqrt{h_r}]$

University of Mumbai

Examination 2020

Program: BE **Electronics & Telecommunication** Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ECC603 and **Course Name:** Antenna and Radio Wave Propagation

Time: 1 hour Max. Marks: 50

==========

Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	D
Q3.	B
Q4	A
Q5	B
Q6	C
Q7	A
Q8.	C
Q9.	C
Q10.	C
Q11.	B
Q12.	C
Q13.	A
Q14.	D
Q15.	D
Q16.	A
Q17.	B

Q18.	A
Q19.	A
Q20.	A
Q21.	B
Q22.	A
Q23.	A
Q24.	B
Q25.	A

University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev 2016
Examination: Third Year Semester VI
Course Code: ECC604 and Course Name: Image Processing and Machine Vision
Time: 1 hour Max. Marks: 50

==========

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

Q1.	Which transform is used in subband coding?
Option A:	DFT
Option B:	DCT
Option C:	Walsh-Hadamard Transform
Option D:	Haar Transform
Q2.	Which is the energy efficient transforms
Option A:	Hit-or-Miss Transform
Option B:	Hough Transform
Option C:	Discrete Cosine Transform
Option D:	Power Law Transform
Q3.	Rods receptors in human eye are sensitive to
Option A:	Bright-Light
Option B:	Red, Green, Blue
Option C:	Dim-Light
Option D:	Back and White.
Q4.	The person enters cinema hall didn't see anything due to
Option A:	Weber ratio
Option B:	brightness adaptation
Option C:	blind spot in an eye
Option D:	Photopic vision
Q5.	To make central Fourier spectrum, which operation is carried out on input image.
Option A:	Rotation
Option B:	Scaling image by factor 2
Option C:	multiplying image by (-1)^(x+y) where x,y are coordinates of pixel.
Option D:	Adding 128 to each pixel
Q6.	The smallest change in intensity level is called _____
Option A:	spatial resolution
Option B:	gray level resolution
Option C:	geometric resolution
Option D:	optical resolution
Q7.	Pixels where intensity changes adruptly are called
Option A:	Area pixels
Option B:	edge pixels
Option C:	intensity pixels

Option D:	gray pixels
Q8.	What is the sequency of Walsh-Hadamard Matrix with N=4?
Option A:	(1 2 3 4)
Option B:	(0 1 3 2)
Option C:	(0 3 1 2)
Option D:	(0 1 2 3)
Q9.	Filter with size 3x3 results into replacing the center pixel value with 5^{th} element from pixels arranged in ascending order of their values.
Option A:	Median Filter
Option B:	Mean Filter
Option C:	Min Filter
Option D:	Max Filter
Q10.	The system's ability to set classification parameters for object recognition is called
Option A:	classifier learning
Option B:	evaluation settings
Option C:	discrimination function
Option D:	System definition
Q11.	In case of chain code following is true, except _____.
Option A:	Chain codes can be normalized for rotation
Option B:	Normalization are exact only if the boundaries themselves are invariant to rotation
Option C:	First difference of chain code is rotation invariant
Option D:	size normalization cannot be achieved
Q12.	Which operator is used to detect isolated point in segmentation?
Option A:	Prewitt operator
Option B:	Laplacian operator
Option C:	Sobel operator
Option D:	Robert cross gradient
Q13.	Which is not a gradient operator for edge detection?
Option A:	Laplacian operator
Option B:	Roberts operator
Option C:	Prewitt operator
Option D:	Sobel operator
Q14.	Periodic noise is eliminated without compromising on small details and textures using_____
Option A:	Band pass filter
Option B:	Band reject filter
Option C:	Median filter
Option D:	Average Filter

Q15.	Texture means the following except _____
Option A:	Defined by pattern for a pixel
Option B:	Spatial arrangement of intensities
Option C:	repeating pattern
Option D:	distribution of intensity in neighbourhood
Q16.	What is the sum of all the components of a normalized histogram?
Option A:	-1
Option B:	0
Option C:	size of image
Option D:	1
Q17.	Knowledge representation techniques used in AI do not include
Option A:	predicate logic
Option B:	production rules
Option C:	control sophistication
Option D:	semantic nets
Q18.	When the noise is zero, then the noise power spectrum vanishes. It results into _____
Option A:	Wiener filter dominates the inverse filter.
Option B:	Inverse filter is converted into wiener filter.
Option C:	Wiener filter reduces to the inverse filter.
Option D:	Ratio of power spectrum of undegraded image to noise reduces to zero.
Q19.	The image gets _____ as a result of dilation process
Option A:	Thinner
Option B:	shrinked
Option C:	thickened
Option D:	sharpened
Q20.	The function that describes relations between the classifier inputs and the output is called
Option A:	the activation function
Option B:	Weight function
Option C:	discrimination function
Option D:	the decision rule
Q21.	Which filter is used in Homomorphic filtering?
Option A:	Gaussian high pass filter
Option B:	Gaussian low pass filter
Option C:	Butterworth low pass filter
Option D:	Butterworth high pass filter
Q22.	Which type of thresholding method is to be used for making segmentation illumination invariant?
Option A:	Optimal Thresholding
Option B:	Global Thresholding

Option C:	Adaptive Thresholding
Option D:	Least Square Thresholding
Q23.	The best filter to remove Gaussian noise is
Option A:	Arithmetic mean filter
Option B:	geometric mean filter
Option C:	contraharmonic mean filter
Option D:	median filter
Q24.	What is difference between the histogram of original image and its transposed image?
Option A:	No difference
Option B:	Histogram of transposed image is inverted
Option C:	More number of peaks in transposed image
Option D:	More number of peaks in original image
Q25.	Which training method is preferred in partitioning of two classes in situation where separating hyperplane cannot be found?
Option A:	predictive modeling
Option B:	Nonlinear transformation
Option C:	Maximum margin optimization
Option D:	Soft margin training

University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: Third Year Semester VI
Course Code: ECC604 and Course Name: Image Processing and Machine Vision
Time: 1 hour Max. Marks: 50

==========

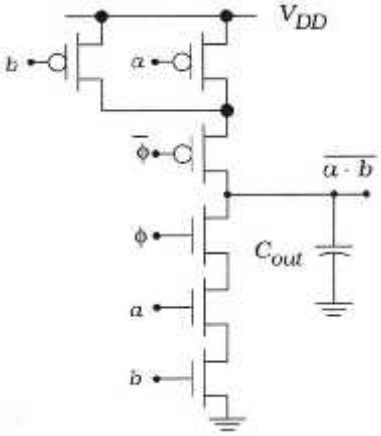
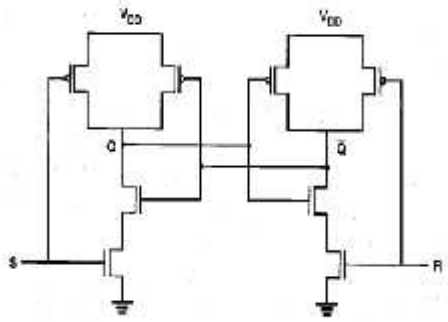
Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	C
Q3.	D
Q4	B
Q5	C
Q6	B
Q7	B
Q8.	D
Q9.	A
Q10.	A
Q11.	D
Q12.	B
Q13.	A
Q14.	B
Q15.	A
Q16.	D
Q17.	C
Q18.	C
Q19.	C
Q20.	D
Q21.	A
Q22.	C
Q23.	A
Q24.	A
Q25.	D

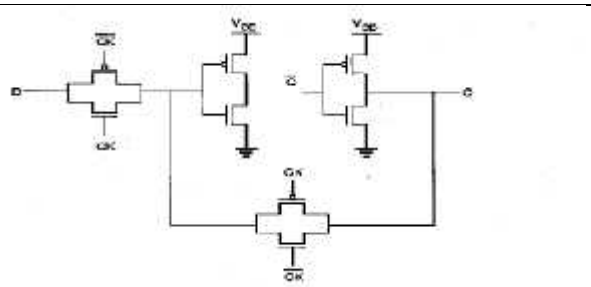
University of Mumbai
Examination 2020

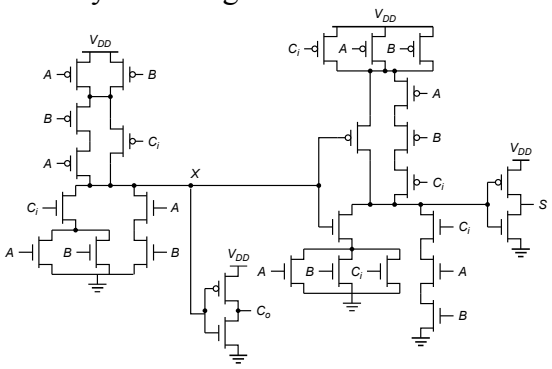
Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev 2016
Examination: Third Year Semester VI
Course Code: ECCDLO6021 and Course Name: Digital VLSI Design
Time: 1 hour Max. Marks: 50

==========

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

Q1.	Identify the following circuit 
Option A:	Clocked CMOS NAND
Option B:	Dynamic NAND
Option C:	CMOS NAND
Option D:	Domino NAND
Q2.	Identify the circuit 
Option A:	NAND based CMOS JK Latch
Option B:	NOR based CMOS JK Latch
Option C:	NOR based CMOS SR Latch
Option D:	NAND based CMOS SR Latch
Q3.	Identify the circuit

	
Option A:	SR Latch
Option B:	JK Latch
Option C:	D Latch
Option D:	Buffer
Q4.	Which one of the following circuit gives non-complementary output
Option A:	CMOS
Option B:	Dynamic CMOS
Option C:	NORA
Option D:	Domino
Q5.	The advantage of mirror circuit is
Option A:	Non symmetric layouts
Option B:	Symmetric Layouts
Option C:	Large rise time
Option D:	Large fall time
Q6.	For N-inputs Pseudo nMos requires
Option A:	2N FET's
Option B:	N+2 FET's
Option C:	N+1 FET's
Option D:	N FET's
Q7.	If WL =0 and BL=0 an SRAM Cell behaves in _____.
Option A:	Read Mode
Option B:	Write Mode
Option C:	Latch Mode
Option D:	Read- Write Mode
Q8.	Non-random memories have _____ access time and _____ area.
Option A:	Slower, larger
Option B:	Faster, smaller
Option C:	Slower, smaller
Option D:	Faster, larger
Q9.	The time interval between the memory receiving a new address input and the data being available is called _____.
Option A:	Access time
Option B:	Bus speed
Option C:	Read/write data

Option D:	Read/write speed
Q10.	Which is a comparatively slower device?
Option A:	ROM
Option B:	RAM
Option C:	SRAM
Option D:	flash memory
Q11.	Identify following circuit 
Option A:	Mirror adder
Option B:	Carry look ahead adder
Option C:	Half adder
Option D:	4-bit adder
Q12.	Carry bypass adder is also called as
Option A:	Carry select adder
Option B:	Manchester carry adder
Option C:	Carry Skip adder
Option D:	Carry save adder
Q13.	For a full adder stage FAi in a carry look-ahead adder, which of the following statement is false?
Option A:	The carry generate function Gi will be 1 if both the inputs Ai and Bi are 1.
Option B:	The carry propagate function Pi will be 1 if at least one of the inputs Ai and Bi are 1.
Option C:	The carry generate function Gi will be 0 if exactly one of the inputs Ai and Bi are 0.
Option D:	The carry propagate function Pi will be 1 if both inputs are not equal
Q14.	Which statement is false about combinational array multiplier?
Option A:	Perform only unsigned integer product
Option B:	High gate count for large multiplication like 32 bit
Option C:	Extremely inefficient
Option D:	Low gate count for large multiplication like 32 bit
Q15.	The geometrical dimensions of Interconnect set in processing are _____, _____ and _____.
Option A:	W , t , Tox

Option B:	W, l
Option C:	W, l , t
Option D:	W, l , Cox
Q16.	_____ is a phenomenon of pulsing a voltage on one of the lines induce a stray signal on all lines that are coupled to it.
Option A:	Interconnect
Option B:	Crosstalk
Option C:	Electro-migration
Option D:	Capacitance
Q17.	Which is right sequence in VLSI design cycle 1) Architectural Design 2) Functional Design 3) System Specification 4) Logic Design
Option A:	1,2,3,4
Option B:	4,3,2,1
Option C:	3,1,2,4
Option D:	1,4,2,3
Q18.	Modelling an Interconnect line is by the use of _____.
Option A:	R,C
Option B:	Only R
Option C:	Only C
Option D:	Only active element
Q19.	Which of the following between FPGA and ASIC is not true
Option A:	ASIC is slower than FPGA
Option B:	The NRE cost in FPGA is minimal as compared to ASIC
Option C:	FPGA is good for low volume designs whereas ASICS re good for high volume production for reduced cost
Option D:	FPGA has faster time to market whereas ASIC requires larger design time
Q20.	An Antifuse programming technology is predominantly associated with
Option A:	SPLDs
Option B:	FPGAs
Option C:	CPLDs
Option D:	SOC
Q21.	PLA is used to implement
Option A:	A complex sequential circuit
Option B:	A simple sequential circuit
Option C:	A complex combinational circuit
Option D:	A simple combinational circuit
Q22.	In data dominated design of 100 tap FIR filter requires
Option A:	1 level of adder, 7 level of multipliers

Option B:	7 level of adder, 1 level of multipliers
Option C:	Only adders required
Option D:	7 level of adder, 7 level of multipliers
Q23.	RTL stands for
Option A:	Resistor transistor logic
Option B:	Resistor transfer logic
Option C:	Register Transfer logic
Option D:	Register transistor logic.
Q24.	In HLSM "==" indicates
Option A:	Equality
Option B:	Comparison
Option C:	Assignment
Option D:	Conditional assignment
Q25.	RTL is used in HDL to create what level of representations in the circuit?
Option A:	High-level
Option B:	Low-level
Option C:	Mid-level
Option D:	Same level

University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev 2016
Examination: Third Year Semester VI
Course Code: ECCDLO6021 and Course Name: Digital VLSI Design
Time: 1 hour Max. Marks: 50

==========

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	D
Q3.	C
Q4	D
Q5	B
Q6	C
Q7	D
Q8.	B
Q9.	A
Q10.	D
Q11.	A
Q12.	C
Q13.	B
Q14.	D
Q15.	A
Q16.	B
Q17.	C
Q18.	A
Q19.	A
Q20.	B
Q21.	C
Q22.	B
Q23.	C
Q24.	B
Q25.	A

University of Mumbai Examination 2020

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code and Course Name: ECCDLO6022 and Radar Engineering

Time: 1 hour Max. Marks: 50

==========

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

Q1.	In the following scan radar, the direction of the antenna beam does not coincide with the bore-sight, but revolves around, it seeking the target direction
Option A:	Lobe switching or serquential switching
Option B:	Monopulse
Option C:	Conical Scan
Option D:	Low angle tracking
Q2.	The following technique keeps the beam pointed at the target to improve angle accuracy and it is based on the principle that the radar receiver will get maximum returned signal strength.
Option A:	Lobe switching or serquential switching
Option B:	Monopulse
Option C:	Conical Scan
Option D:	Low angle tracking
Q3.	Glint means
Option A:	Range inaccuracy
Option B:	Target phase fluctuations
Option C:	Phase inaccuracy
Option D:	Velocity fluctuations
Q4.	If the feed maintains the plane of polarization fixed as it rotates, i t is called
Option A:	Rotating Feed
Option B:	Dipole feed
Option C:	nutating feed
Option D:	Cassegrain Feed
Q5.	The radar that uses more than one beam simultaneously to measure the angular position of the target on a single pulse is
Option A:	lobe switching
Option B:	sequential lobing
Option C:	conical scan
Option D:	Monopulse
Q6.	Tracking information is obtained by

Option A:	Stationary beam
Option B:	Scanning the beam
Option C:	Suitable receiver
Option D:	Suitable beamwidth of stationary beam
Q7.	Sequential lobing means
Option A:	Switching antenna beam alternatively between two positions
Option B:	Range detection
Option C:	Measure of velocity
Option D:	Measure of Doppler Shift
Q8.	Squint angle is angle between
Option A:	antenna beam axis and array axis
Option B:	Antenna beam axis and axis of rotation
Option C:	Antenna 3db beamwidth in degrees
Option D:	antenna null to null beamwidth in degrees
Q9.	Angular tracking accuracy is improved by
Option A:	Antenna narrow beams
Option B:	Antenna broad beams
Option C:	Wide transmitting pulse
Option D:	Low frequency
Q10.	Repellar electrode is associated with which microwave tube
Option A:	Reflex Klystron
Option B:	Multicavity klystron
Option C:	Gyroton
Option D:	Cross field amplifier
Q11.	The main advantage of TWT over a multi-cavity klystron is
Option A:	greater bandwidth
Option B:	more efficient
Option C:	higher number of modes
Option D:	higher output power
Q12.	The oscillating frequencies of different modes of magnetrons are not same and are quite close to each other, which results in
Option A:	helping focusing
Option B:	providing attenuation
Option C:	improving bunching
Option D:	Mode Jumping
Q13.	The phase velocity of RF field's axial component in the TWT slow-wave structure is
Option A:	equal to the velocity of the electrons
Option B:	slightly less than the velocity of the electrons
Option C:	slightly greater than the velocity of the electrons
Option D:	equal to the velocity of light in vacuum

Q14.	Which one of the following can be used for the amplification of microwave energy
Option A:	traveling-wave tube
Option B:	Magnetron
Option C:	Reflex Klystron
Option D:	Gunn diode
Q15.	Cross-field amplifier (CFA) is vary close associate of
Option A:	Magnetron
Option B:	Helix Trawelling wave tube
Option C:	Multicavity Klystron
Option D:	Coupled cavity TWT
Q16.	Which of the following is solid state device
Option A:	Magnetron
Option B:	Travelling wave Tube
Option C:	Klystron
Option D:	GaAs MOSFET
Q17.	One of the following is a crossed field device
Option A:	Magnetron
Option B:	Travelling wave Tube
Option C:	Two cavity klystron
Option D:	Reflex klystron
Q18.	Magnetrons are commonly used as radar transmitters because
Option A:	it is easily cooled
Option B:	it is light
Option C:	it is a handy device
Option D:	high power can be generated and transmitted to aerial directly from oscillator
Q19.	_____ is a single cavity klystron tube that operates as on oscillator by using a reflector electrode after the cavity.
Option A:	Backward wave oscillator
Option B:	Reflex klystron
Option C:	Travelling wave Tube
Option D:	Magnetron
Q20.	Which radarscope plots target echo amplitude versus range on rectangular coordinates for some fixed direction? It is also used primarily for tracking radar applications than for surveillance radars.
Option A:	PPI Scope
Option B:	B scope
Option C:	A scope
Option D:	F-scope
Q21.	The PPI scan-type indicator can indicate

Option A:	range of the target only
Option B:	direction of the target only
Option C:	Both range and direction of the target
Option D:	Range, speed, and direction
Q22.	The intensity modulated map like circular display that gives target location in polar coordinates
Option A:	F-scope
Option B:	A-scope
Option C:	B-scope
Option D:	PPI
Q23.	In a radar receiver the IF amplifier is usually
Option A:	broadband to permit the use of wide pulses
Option B:	broadband to permit the use of fairly narrow pulses
Option C:	narrowband in order to use narrow pulses
Option D:	narrowband in order to use wider pulses
Q24.	Noise figure for a receiver is defined as the ratio of
Option A:	(S/N) ratio at the input to (S/N)ratio at the output
Option B:	(S/N) ratio at the output to (S/N)ratio at the Input
Option C:	S/N ratio at the input
Option D:	S/N ratio at the output
Q25.	The conversion loss of a mixer is defined as
Option A:	Ratio of available RF power to available IF power
Option B:	Ratio of available IF power to available RF power
Option C:	Product of available RF and IF power
Option D:	sum of available RF anf IF power

University of Mumbai Examination 2020

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code and Course Name: ECCDLO6022 and Radar Engineering

Time: 1 hour Max. Marks: 50

==========

Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D'
Q1.	B
Q2.	B
Q3.	B
Q4	C
Q5	D
Q6	B
Q7	A
Q8.	B
Q9.	A
Q10.	A
Q11.	A
Q12.	D
Q13.	B
Q14.	A
Q15.	A
Q16.	D

Q17.	A
Q18.	D
Q19.	B
Q20.	C
Q21.	C
Q22.	D
Q23.	A
Q24.	A
Q25.	A

University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev 2016
Examination: Third Year Semester VI
Course Code: ECCDLO 6023 and Course Name: Database Management System
Time: 1 hour Max. Marks: 50

==========

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

Q1.	The database environment has all of the following components except:
Option A:	Users
Option B:	Separate files
Option C:	Database
Option D:	Database Administrator
Q2.	Data independence means
Option A:	Data is defined separately and not included in programs
Option B:	Data and programs are maintained in separate files
Option C:	Is the capacity to change the schema at one level of a database system without having to change the schema at the next higher level
Option D:	Data is defined separately and included in programs
Q3.	A relational database developers refers to a record as
Option A:	A criteria
Option B:	A relation
Option C:	A tuple
Option D:	An attribute
Q4.	Key to represent relations between tables is called
Option A:	Super key
Option B:	Foreign key
Option C:	Primary key
Option D:	Secondary key
Q5.	A logical schema
Option A:	is the entire database
Option B:	is the standard way of organizing information into accessible parts
Option C:	Describes how data is actually stored on disk.
Option D:	Is the Entire Data base as well as the standard way of organizing information into accessible parts.
Q6.	E-R model uses this symbol to represent weak entity set?
Option A:	Dotted rectangle
Option B:	Diamond
Option C:	Doubly outlined rectangle
Option D:	Dotted square
Q7.	A key that consists of more than one attribute to uniquely identify rows in a table is called

Option A:	Composite key
Option B:	Candidate Key
Option C:	Primary key
Option D:	Foreign key
Q8.	Relational Algebra is
Option A:	Data Definition Language
Option B:	Meta Language
Option C:	Procedural query Language
Option D:	High level Language
Q9.	_____refers to the correctness and completeness of the data in a database
Option A:	Data security
Option B:	Data integrity
Option C:	Data constraint
Option D:	Data independence
Q10.	Every attribute has some predefined value scope that is called
Option A:	Tuple
Option B:	Tables
Option C:	Attribute domain
Option D:	Relation schema
Q11.	_____produces the relation that has attributes of R1 and R2.
Option A:	Cartesian product
Option B:	Difference
Option C:	Intersection
Option D:	Product
Q12.	Which is not advantage of concurrent execution
Option A:	Improved throughput
Option B:	Reduced waiting time
Option C:	Less storage space required
Option D:	Resource utilization
Q13.	A transaction completes its execution is said to be
Option A:	Saved
Option B:	Loaded
Option C:	Rolled
Option D:	Committed
Q14.	Which of the following is not an Aggregate function?
Option A:	Min
Option B:	Max
Option C:	Select
Option D:	Avg

Q15.	A type of query that is placed within a WHERE or HAVING clause of another query called
Option A:	Super query
Option B:	Sub query
Option C:	Master query
Option D:	Multi-query
Q16.	What is ACID properties of Trasactions?
Option A:	Atomicity, Consistency, Isolation, Database
Option B:	Atomicity, Consistency, Isolation, Durability
Option C:	Atomicity, Consistency, Inconsistent, Durability
Option D:	Automatically, Consistency, Isolation, Durability
Q17.	The attribute that can be divided into other attributes is called
Option A:	Simple Attribute
Option B:	Composite Attribute
Option C:	Multi-valued Attribute
Option D:	Derived Attribute
Q18.	Count function in SQL returns the number of
Option A:	Values
Option B:	Columns
Option C:	Groups
Option D:	Distinct values
Q19.	A relation that has o partial dependencies is in which normal form
Option A:	First
Option B:	Second
Option C:	Third
Option D:	BCNF
Q20.	In SQL, which of the following is not a data manipulation Language commands?
Option A:	DELETE
Option B:	SELECT
Option C:	UPDATE
Option D:	CREATE
Q21.	A data manipulation command that combines the records from one or more tables is called
Option A:	SELECT
Option B:	PROJECT
Option C:	JOIN
Option D:	PRODUCT
Q22.	Consider the following schema Employee(Eno, Ename, deptNo) Department(deptNo, deptName)

	Find the correct query to find the name of the employees working in the research department
Option A:	Select Ename from Employee, Department where Employee.deptNo=Departmet.deptNo and deptName='Research'
Option B:	Select Ename from Employee where Department.deptName='Research'
Option C:	Select Ename from Employee where deptName='Research'
Option D:	Select Ename from Employee where deptName='Acedemic'
Q23.	Employee(person_name,street, city) Works(person_name, company_name, salary) Company(company_name, city) Manages(person_name, manager_name) Consider the relational database given above where primary key is in bold letters. Give an expression in the relational algebra to express each of the following queries: 1. Find the names of the employees who work for First Bank Corporation.
Option A:	$\Pi_{person\_name}(\sigma_{comapny\_name="FirstBankCorporation"}(works))$
Option B:	$\sigma_{person\_name}(\Pi_{comapny\_name="FirstBankCorporation"}(works))$
Option C:	$(\sigma_{comapny\_name="FirstBankCorporation"}(works))$
Option D:	$\Pi_{comapny\_name="FirstBankCorporation"}(works)$
Q24.	Given the SQL expression for the same query asked in question 23.
Option A:	Select employee_name from works for company_name="First Bank Corporation
Option B:	Select employee_name from works
Option C:	Select employee_name where company_name="First Bank Corporation"
Option D:	Select employee_name From works Where company_name="First Bank Corporation"
Q25.	An attribute of a table can not hold multiple values is the property of
Option A:	First Normal form (1NF)
Option B:	Second normal form (2NF)
Option C:	Third normal form(3NF)
Option D:	Fourth normal form (4NF)

University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: Third Year Semester VI
Course Code: ECCDLO6023 and Course Name: Database Management Systems
Time: 1 hour Max. Marks: 50

==========

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	C
Q3.	C
Q4	B
Q5	B
Q6	C
Q7	A
Q8.	C
Q9.	B
Q10.	C
Q11.	A
Q12.	C
Q13.	D
Q14.	C
Q15.	B
Q16.	B
Q17.	B
Q18.	D
Q19.	B
Q20.	D
Q21.	C
Q22.	A
Q23.	A
Q24.	D
Q25.	A

Department: Electronics & Telecommunication

Syllabus: CBCGS

Semester: Sem-VI

Subject Name: Database Management Systems

Subject Code: ECCDLO6023

Date of Exam: 12-12-20

The revised question is as below

(Note: the question and the correct answer both has to be mentioned)

Q18.	Count function in SQL returns the number of
Option A:	Values
Option B:	Columns
Option C:	Groups
Option D:	Distinct values

Ans: a

Q19.	A relation that has no partial dependencies is in which normal form
Option A:	First
Option B:	Second
Option C:	Third
Option D:	BCNF

Ans: b

University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: ThirdYear SemesterVI
Course Code: ECCDLO6024and Course Name: Audio Processing
Time: 1hour Max. Marks: 50

==========

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

Q1.	Very long duration windows correspond to
Option A:	wideband low pass filters
Option B:	narrowband low pass filters
Option C:	wideband high pass filters
Option D:	narrowband high pass filters
Q2.	A system is said to be stable if the bounded input to the system produce
Option A:	Non-bounded output
Option B:	Inbound output
Option C:	Bounded Output
Option D:	Outbound Output
Q3.	Vocal tract model is a _____ system
Option A:	All zero
Option B:	All pole
Option C:	Pole-zero
Option D:	Pole-pole
Q4.	In discrete time model of speech production the voiced sounds are synthesized as _____
Option A:	Train of pulses
Option B:	Random noise generators
Option C:	Train of periodic pulses
Option D:	Sine wave generators
Q5.	The sampled frequency less than the Nyquist rate is called
Option A:	under sampling
Option B:	over sampling
Option C:	critical sampling
Option D:	Nyquist sampling
Q6.	Difference signal x(n)-x(n-1) is quantized in:
Option A:	Differential coding
Option B:	Uniform quantizing
Option C:	Instantaneous companding
Option D:	Step processing
Q7.	Most energy in voiced speech is at _____ frequency.
Option A:	Low
Option B:	High

Option C:	High and very high
Option D:	Low and high
Q8.	The fundamental frequency of the vocal fold vibrations during voiced sounds is called _____
Option A:	Resonants
Option B:	Variants
Option C:	Formants
Option D:	Pitch
Q9.	The process of converting the analog sample into discrete form is called
Option A:	Quantization
Option B:	Modulation
Option C:	Multiplexing
Option D:	Sampling
Q10.	The resonant frequencies of Vocal tract tube are called _____
Option A:	Variants
Option B:	Fundamental tones
Option C:	Formants
Option D:	Pitch
Q11.	Short time energy serves to differentiate
Option A:	Voiced and unvoiced sounds
Option B:	Vowels and semi vowels
Option C:	Diphthongs and stops
Option D:	Nasals and Fricatives
Q12.	Voiced sounds are _____.
Option A:	Noisy
Option B:	Loud
Option C:	Periodic
Option D:	Aperiodic
Q13.	The _____ is a function of time and frequency that indicates how the spectral content of a signal evolves over time.
Option A:	STFT
Option B:	DFT
Option C:	FFT
Option D:	DTFT
Q14.	Zero crossing rate is a simple measure of
Option A:	Frequency content of a signal
Option B:	Pitch of a signal
Option C:	Auto correlation
Option D:	Energy content of a signal
Q15.	The basic idea of short time Fourier transform is to break up the signal into small

	____ segments and Fourier analyze each segment to ascertain the frequencies that existed in that segment.
Option A:	time
Option B:	frequency
Option C:	finer
Option D:	average
Q16.	The smallest perceptual unit of speech is _____
Option A:	Phoneme
Option B:	Syllable
Option C:	Consonant
Option D:	Plosive
Q17.	The short time Fourier transform is the most widely used method for studying _____ signals.
Option A:	stationary
Option B:	non-stationary
Option C:	periodic
Option D:	non-periodic
Q18.	Neural Networks are interconnections of processing elements are known as
Option A:	Weights
Option B:	Neurons
Option C:	Axons
Option D:	soma
Q19.	Spectrum flatteners are used to
Option A:	widen the spectrum
Option B:	remove the effects of the vocal tract transfer function
Option C:	flatten the spectrum
Option D:	for center clipping
Q20.	Short duration signals have inherently _____ bandwidths.
Option A:	Small
Option B:	Large
Option C:	Medium
Option D:	Very small
Q21.	Analysis of speech signal in vocoders is done at the _____.
Option A:	Receiver
Option B:	Amplifier
Option C:	Transmitter
Option D:	Channel
Q22.	The disadvantage of Fourier Transforms (FT, DTFT, DFT) is that they do not clearly indicate how the _____ of a signal changes with time.
Option A:	frequency
Option B:	amplitude

Option C:	gain
Option D:	energy
Q23.	Software tool that matches speech uttered by user with a vocabulary of speech signal stored in a computer is
Option A:	Speech analyser
Option B:	Speech enhancer
Option C:	Speech Recognition
Option D:	Speech synthesizer
Q24.	The type of _____ you use affects the time-frequency resolution of the STFT.
Option A:	Scale
Option B:	Pitch
Option C:	Window
Option D:	recorder
Q25.	If the zero-crossing rate is high, the speech signal is generally
Option A:	voiced
Option B:	unvoiced
Option C:	depends on the speaker
Option D:	silence

University of Mumbai
Examination 2020

Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: Third Year SemesterVI
Course Code: ECCDLO6024and Course Name: Audio Processing
Time: 1 hour Max. Marks: 50

==========

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	C
Q3.	B
Q4	C
Q5	A
Q6	A
Q7	A
Q8.	D
Q9.	A
Q10.	C
Q11.	A
Q12.	C
Q13.	A
Q14.	A
Q15.	A
Q16.	A
Q17.	B
Q18.	B
Q19.	B
Q20.	B
Q21.	C
Q22.	A
Q23.	C
Q24.	C
Q25.	B