

Note:- “These are sample MCQs to indicate pattern, may or may not appear in examination”

Program: BE COMPUTER Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSC604 and Course Name: Cryptography and System Security

Time: 1 hour

Max. Marks: 50

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

Q1.	An Decryption algorithm converts _____ into _____.
Option A:	Plaintext, Ciphertext
Option B:	Ciphertext, Plaintext
Option C:	Keytext, Cleartext
Option D:	Randomtext, Plaintext
Q2.	In AES algorithm the key size chosen as 128, 192, 256 for number of rounds __, __, __ respectively.
Option A:	8, 10, 12
Option B:	10, 12, 14
Option C:	12, 14, 16
Option D:	18, 20, 22
Q3.	In RSA Algorithm which of the following is correct for selection of private key D? Assume P, Q are large prime numbers and E is the public key.
Option A:	$D \times E \bmod P \times Q = 1$
Option B:	$D \times E \bmod P \times (Q-1) = 1$
Option C:	$D \times E \bmod (P-1) \times (Q-1) = 1$
Option D:	$D \times E \bmod (P-1) \times Q = 1$
Q4.	Which is not a poly alphabetic cipher.
Option A:	Vigenere Cipher
Option B:	Playfare Cipher
Option C:	Hill Cipher
Option D:	Shift Cipher
Q5.	Key management is a practice that requires:
Option A:	Labeling keys so that they are not lost or stolen
Option B:	Returning the key to the CA after it has completed its lifetime.
Option C:	Choosing a key that is extremely random and the algorithm should use the full range of the key-space

Option D:	At least two senior officers of the company to issue and maintain a record of the keys
Q6.	Which of the following is used by KDC in Kerberos?
Option A:	Key Distribution Server and Web Server
Option B:	Ticket Granting Server and Authentication Server
Option C:	Key Sharing and Distribution Server
Option D:	Ticket Generating Server and Authorization Server
Q7.	Euler's totient function $\Phi(37) = ?$
Option A:	35
Option B:	26
Option C:	30
Option D:	36
Q8.	Which of the following is used by RSA digital signature scheme?
Option A:	Signing a message
Option B:	Verifying a message
Option C:	Signing and Verifying a message
Option D:	Signing and Verifying the key
Q9.	To preserve the integrity of a message, digital signature uses which of the following?
Option A:	Encryption
Option B:	Decryption
Option C:	Hashing
Option D:	Key Generation
Q10.	What is a role of Certification Authorities (CA)?
Option A:	To bind a public key to a specific entity
Option B:	To establish a shared secret key between two parties
Option C:	To securely relay a message from one side to the other
Option D:	To securely distribute shared public-/private key to multiple entities
Q11.	An analysis method used by some IDS that looks for instances that are not considered normal behavior.
Option A:	Stateful Inspection
Option B:	Anomaly Detection
Option C:	Evasion
Option D:	Pattern Matching
Q12.	In cross-site scripting (XSS) where does the malicious script execute?

Option A:	On the Hacker's system
Option B:	In web app model code
Option C:	On the web server
Option D:	In the users browser
Q13.	Which of the following is not service of Digital Signature?
Option A:	Authentication
Option B:	Non Repudiation
Option C:	Integrity
Option D:	Authorization
Q14.	Euler's theorem states that for every a and n that are relatively prime $a^{\phi(n)} \equiv$ _____.
Option A:	$1 \pmod n$
Option B:	$a \pmod n$
Option C:	$a \pmod{\phi(n)}$
Option D:	$1 \pmod{\phi(n)}$
Q15.	AES Algorithm is the example of
Option A:	Asymmetric key cryptography
Option B:	Symmetric key cryptography
Option C:	Combination of both
Option D:	Steganography
Q16.	Which of the following algorithm is developed to solve the problem of meet in the middle attack?
Option A:	DES
Option B:	AES
Option C:	Double DES
Option D:	Triple DES
Q17.	In AES the 4x4 bytes matrix key is transformed into a keys of size _____
Option A:	32 words
Option B:	64 words
Option C:	54 words
Option D:	44 words

Q18.	What is the full form of TGS in Kerberos?
Option A:	Ticket Generating Server
Option B:	Token Granting Server
Option C:	Ticket Granting Server
Option D:	Token Generating Server
Q19.	The CA sign a digital certificate with _____
Option A:	its own private key
Option B:	the user's private key
Option C:	its own public key
Option D:	the user's public key
Q20.	Programming languages like __ and __ are more susceptible to buffer overflow.
Option A:	C, C++
Option B:	Java, Python
Option C:	Python, Ruby
Option D:	Tcl, c#
Q21.	In RSA digital signature scheme which mathematical operation is used to verify the message digest at receiver's end ?
Option A:	Congruence
Option B:	Multiplication
Option C:	Division
Option D:	XOR
Q22.	In RSA Algorithm which key is used for encryption?
Option A:	Public key of receiver
Option B:	Private key of receiver
Option C:	Public key of sender
Option D:	Private key of sender
Q23.	Which of the following techniques is used in Entity Authentication scheme ?
Option A:	Password Based
Option B:	RSA based
Option C:	IDS based
Option D:	Cipher Based
Q24.	The best defense against any type of sniffing is _____

Option A:	Encryption
Option B:	A switched network
Option C:	Port-based security
Option D:	A good security training program
Q25.	Diffie Hellman Algorithm is useful for
Option A:	Public key generation
Option B:	Private key generation
Option C:	Symmetric key generation
Option D:	Sharing a key

Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester - VI

Course Code: MEC604

Course Name: Refrigeration and Air Conditioning

Time: 1 hour

Max. Marks: 50

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

Q1.	Which of the following parameter is made as basis of comparing different type of air refrigeration system?
Option A:	Mass flow rate of air
Option B:	Refrigerating capacity of Air cycle in kW
Option C:	Mach number
Option D:	Dry air rated temperature
Q2.	In aircraft, air refrigeration cycle is used because of
Option A:	Low weight per tonne of refrigeration
Option B:	High heat transfer rate
Option C:	Low temperature at high altitude
Option D:	Higher coefficient of performance
Q3.	A Carnot cycle refrigerator operates between 250°K and 300°K. What is the value of COP?
Option A:	10
Option B:	20
Option C:	30
Option D:	5
Q4.	The reduced ambient air-cooling system has
Option A:	One cooling turbine and one heat exchanger
Option B:	One cooling turbine and two heat exchangers
Option C:	Two cooling turbine and one heat exchanger
Option D:	Two cooling turbine and two heat exchangers
Q5.	The highest temperature during the cycle, in a vapour compression refrigeration system, occurs after
Option A:	Compression
Option B:	Condensation
Option C:	Expansion
Option D:	Evaporation
Q6.	Which of the following refrigerant has the lowest boiling point ?
Option A:	Ammonia

Option B:	Carbon dioxide
Option C:	Sulphur dioxide
Option D:	R-12
Q7.	The thermostatic expansion valve is also called
Option A:	Constant pressure valve
Option B:	Constant temperature valve
Option C:	Constant superheat valve
Option D:	Constant flow valve
Q8.	A better indicator for cooling tower performance is
Option A:	Wet bulb temperature
Option B:	Dry bulb temperature
Option C:	Range
Option D:	Approach
Q9.	Which of the following is an azeotrope refrigerant?
Option A:	R-11
Option B:	R-40
Option C:	R-114
Option D:	R-502
Q10.	Heat is rejected by the refrigerant, during vapor compression refrigeration cycle in
Option A:	Condenser
Option B:	Evaporator
Option C:	Throttle Valve
Option D:	Compressor
Q11.	In aqua-ammonia and Li-Br water absorption refrigeration systems, the refrigerant is respectively
Option A:	Ammonia and water
Option B:	Water and water
Option C:	Ammonia and Li-Br
Option D:	Water and Li-Br
Q12.	In Electrolux Refrigerator, hydrogen gas circulates between
Option A:	Absorber and heat exchanger
Option B:	Evaporator and Condenser
Option C:	Absorber and Evaporator
Option D:	Rectifier and Condenser
Q13.	A thermoelectric refrigeration system requires :
Option A:	A high voltage AC input
Option B:	A low voltage AC input
Option C:	A high voltage DC input
Option D:	A low voltage DC input

Q14.	What is the perfect condition for dehumidification of air?
Option A:	air is heated above its dew point temperature
Option B:	air is cooled up to its dew point temperature
Option C:	air is heated below its dew point temperature
Option D:	air is cooled below its dew point temperature
Q15.	The mass of water vapour present in _____ is called absolute humidity.
Option A:	1 m ³ of water
Option B:	1 m ³ of dry air
Option C:	1 kg of wet air
Option D:	1 kg of dry air
Q16.	On psychrometric chart, wet bulb temperature lines are
Option A:	horizontal with uniformly spaced
Option B:	horizontal with non-uniformly spaced
Option C:	inclined with uniformly spaced
Option D:	inclined with non-uniformly spaced
Q17.	Sensible Heat gain in an air conditioning system is Proportional to
Option A:	Temperature difference between WBT of air and temperature of a surface/body
Option B:	DBT of air
Option C:	Temperature difference between DBT of air and temperature of a surface/body
Option D:	WBT of air
Q18.	Energy Conservation in the air-conditioning of a building can be achieved by
Option A:	Maximizing Infiltration load
Option B:	Minimization of solar heat gain
Option C:	Maximizing Ventilation Load
Option D:	Energy Conservation is not possible
Q19.	The Effective Room sensible Heat (ERSH) where , RSH is Room Sensible Heat , OASH is Outside air sensible heat and BPF is Bypass Factor is given
Option A:	$ERSH = RSH + BPF \div OASH$
Option B:	$ERSH = RSH - BPF \times OASH$
Option C:	$ERSH = RSH - BPF \div OASH$
Option D:	$ERSH = RSH + BPF \times OASH$
Q20.	The surface temperature of a cooling coil t_s which is below the dew point temperature of the supply air is known as
Option A:	Triple point

Option B:	Apparatus dew point or ADP
Option C:	Critical point
Option D:	Boiling point
Q21.	Grand Sensible heat factor (G.S.H.F) is given by where , where T.S.H. is Total Sensible heat, and T.L.H. is Total Latent heat is
Option A:	$GSHF = \frac{T.S.H.}{T.S.H. + T.L.H}$
Option B:	$GSHF = \frac{T.S.H. + T.L.H.}{T.S.H.}$
Option C:	$GSHF = \frac{T.S.H. - T.L.H.}{T.S.H.}$
Option D:	$GSHF = \frac{T.S.H.}{T.S.H. - T.L.H}$
Q22.	Two air streams stream 1 with mass m_{a1} and specific enthalpy h_1 and stream 2 with mass m_{a2} and specific enthalpy h_2 are mixed together adiabatically at constant pressure to form as new stream 3. The specific enthalpy of stream 3 h_3 is given by
Option A:	$h_3 = \frac{m_{a1} \cdot h_1 + m_{a2} \cdot h_2}{m_{a1} + m_{a2}}$
Option B:	$h_3 = \frac{m_{a1} \cdot h_2 + m_{a2} \cdot h_1}{m_{a1} + m_{a2}}$
Option C:	$h_3 = \frac{m_{a1} + m_{a2}}{m_{a1} + m_{a2}}$
Option D:	$h_3 = \frac{h_1 + h_2}{m_{a1} + m_{a2}}$
Q23.	_____ is a process in which water is frozen followed by its removal from the sample initially by sublimation (primary drying) and then by sublimation (desorption)
Option A:	Lyophilisation
Option B:	Freezing
Option C:	freeze drying
Option D:	Cooling
Q24.	_____ will affect the production of textile and paper
Option A:	Change in humidity and pressure
Option B:	Change in air velocity and pressure
Option C:	Change in air velocity and temperature
Option D:	Change in humidity and temperature

Q25.	Seawater air conditioning (SWAC) uses the _____ from the deep ocean (and in some cases a deep lake) to cool buildings.
Option A:	cold water
Option B:	hot water
Option C:	Ammonia
Option D:	Liquid Nitrogen

Program: TE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016/2012

Examination: Third Year Semester VI

Course Code: ECC604 and Course Name: Image Processing and Machine Vision

Time: 1 hour

Max. Marks: 50

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

Q1.	The False Contouring effect will appear in an image due to
Option A:	Insufficient number of Intensity levels in smooth area of digital image
Option B:	Maximum number of Intensity levels in smooth area of digital image
Option C:	Insufficient number of samples in digital image
Option D:	High spatial resolution
Q2.	An image with 256 possible discrete intensity values is called as
Option A:	256 bit image
Option B:	8 bit image
Option C:	16 bit image
Option D:	128 bit image
Q3.	Spatial resolution is a measure of
Option A:	Smallest discriminable detail in the image
Option B:	Smallest discriminable change in the intensity level in the image
Option C:	Light illumination
Option D:	Number of bits used to quantize the intensity
Q4.	The Conversion between RGB and CMY color model is given by
Option A:	$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix} - \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$
Option B:	$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$
Option C:	$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} - \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$
Option D:	$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 2 \\ 2 \\ 2 \end{bmatrix} - \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$
Q5.	What is not the property of Discrete Cosine Transform?
Option A:	Energy compaction
Option B:	Unitary and Orthogonal
Option C:	Separable and Symmetric

Option D:	Nonlinear and invertible
Q6.	Walsh-Hadamard Transform is least suitable in which following Application
Option A:	Data Encryption
Option B:	JPEG
Option C:	ECG Processing
Option D:	Enhancement
Q7.	The 2D DCT of Image $I=[2, 3; 1, 0]$
Option A:	[3,0,2,1]
Option B:	[3,0,2,-1]
Option C:	[3,0,-1,2]
Option D:	[3,2,0,-1]
Q8.	If $f(x,y)$ is imaginary than its Fourier Transform is
Option A:	Conjugate Symmetry
Option B:	Hermitian
Option C:	Anti-Hermitian
Option D:	Symmetry
Q9.	Shrinking of image can be done using
Option A:	pixel replication
Option B:	bi-cubic interpolation
Option C:	bilinear interpolation
Option D:	row column deletion
Q10.	A mask of size 3*3 is formed using Laplacian including diagonal neighbors that has central coefficient as 9. Then what would be central coefficient of same mask if it is made without diagonal neighbors?
Option A:	5
Option B:	-5
Option C:	8
Option D:	-8
Q11.	Noise with Gaussian pdf is introduced by
Option A:	Faulty components
Option B:	Quantization
Option C:	Thermal noise
Option D:	Atmospheric disturbances
Q12.	Salt & pepper noise is due to
Option A:	Quantization
Option B:	Sensor
Option C:	Faulty components
Option D:	Atmospheric turbulence

Q13.	Rayleigh noise distribution is
Option A:	Symmetric
Option B:	Asymmetric
Option C:	Same as gaussian
Option D:	Exponential in nature
Q14.	Difference between the original image and the eroded one creates
Option A:	More grey levels
Option B:	Less grey levels
Option C:	Boundary
Option D:	Unfilled regions
Q15.	What does the total number of pixels in the region defines?
Option A:	Perimeter
Option B:	Area
Option C:	Intensity
Option D:	Brightness
Q16.	Canny's edge detection algorithm is based on:
Option A:	Ideal model
Option B:	Step edge
Option C:	Real model
Option D:	Smoothing model
Q17.	If an image contains K disjoint regions, what does the union of all the regions represent?
Option A:	Background
Option B:	Foreground
Option C:	Outer Border
Option D:	Inner Border
Q18.	Which of the following components must an Object recognition system have
Option A:	Feature Detector
Option B:	Histogram Analyzer
Option C:	Thresholder
Option D:	Binarizer
Q19.	SVM is fundamentally which of the following algorithm
Option A:	Binary
Option B:	Recursive
Option C:	non recursive
Option D:	Random
Q20.	K-Means clustering is which of the following procedures
Option A:	Hierarchical
Option B:	Non hierarchical

Option C:	Random
Option D:	Serial
Q21.	Which of the following is the second step in cluster Analysis
Option A:	Selecting Distance measure
Option B:	Validating Analysis
Option C:	Selecting clustering algorithm
Option D:	Selecting number of clusters
Q22.	The basic idea in classification is to recognize objects based on which one of the following
Option A:	Color
Option B:	Position
Option C:	Size
Option D:	features in general
Q23.	Feature detection for object recognition does not rely mainly on which of the following types of features
Option A:	Global
Option B:	Local
Option C:	Relational
Option D:	Hypothetical
Q24.	Which type of model does a Model-based methods for texture analysis used to characterize
Option A:	Analytical
Option B:	Logical
Option C:	Statistical
Option D:	Random
Q25.	SVMs are which type of classification techniques
Option A:	Supervised
Option B:	Unsupervised
Option C:	Logical
Option D:	Theoretical

Program: BE INFORMATION TECHNOLOGY

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ITC604 and Course Name: WIRELESS NETWORK

Time: 1 hour

Max. Marks: 50

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

Q1.	Which of the following is not a characteristic of Zigbee network
Option A:	Low power consumption
Option B:	Easy installation
Option C:	High data rates
Option D:	Unlicensed radio bands
Q2.	Which of the following is not a Zigbee network topology
Option A:	Ring
Option B:	Star
Option C:	Tree
Option D:	Bus
Q3.	A computer network used for communication among computer devices close to one person is called as:
Option A:	Personal Area Network (PAN)
Option B:	Wireless Sensor Networks (WSN)
Option C:	Wireless Local Area Network (WLAN)
Option D:	Mesh Network
Q4.	A small geographical perimeter within which a wireless access point provides service to a number of users is called as:
Option A:	Hotspot
Option B:	Infrared
Option C:	Wireless
Option D:	Bluetooth
Q5.	In WEP, an initialization vector (IV) is
Option A:	a number that can be used for data encryption.
Option B:	an arbitrary number that can be used for data encryption.
Option C:	an arbitrary number that can be used along with a secret key for data encryption.
Option D:	a number that can be used along with a secret key for data encryption.

Q6.	In IEEE 802.11, when a frame is going from one AP to another AP in a wireless distribution system, the address flag is
Option A:	10
Option B:	01
Option C:	11
Option D:	00
Q7.	What type of duplexing is supported by LTE Technology?
Option A:	FDD
Option B:	TDD
Option C:	FDD & TDD
Option D:	OFD
Q8.	Which of these is used to store the secret key in the GSM network?
Option A:	HLR
Option B:	VLR
Option C:	AUC
Option D:	EIR
Q9.	W bit of the Frame Control Field in WEP specifies
Option A:	that a sequence of frames with this bit on must be processed strictly in order.
Option B:	that the frame body has been encrypted using the WEP (Wired Equivalent Privacy) algorithm.
Option C:	that more fragments will follow.
Option D:	that the frame is going to or coming from the intercell distribution system
Q10.	How many elements comprise the Cisco UWN architecture
Option A:	20
Option B:	15
Option C:	10
Option D:	5
Q11.	PKC is used in Cisco UWN for
Option A:	Intra-controller Roaming
Option B:	Establishing Connection between AP and WLC
Option C:	Providing Security
Option D:	Routing traffic
Q12.	“When fraud access points are created to access information such as passwords.” Which type of Wireless network threat would you classify this under?
Option A:	Identity Theft
Option B:	Network Injection
Option C:	Man in the middle attack
Option D:	Malicious Association

Q13.	IN Cisco UWN, what does UWN stand for
Option A:	Universal Wireless Network
Option B:	Universal Wired Network
Option C:	Uninterruptable Wireless Network
Option D:	Unified Wireless Network
Q14.	Which of the following is NOT a part of GSM Systems Architecture?
Option A:	PSTN
Option B:	MSC
Option C:	BTS
Option D:	BSC
Q15.	Which of these is not an enabling technology for ad hoc networks
Option A:	IEEE 802.15.4
Option B:	IEEE.802.3
Option C:	IEEE 802.11
Option D:	IEEE 802.16
Q16.	Major reason for failure of wireless sensor is
Option A:	Breaking of Sensor
Option B:	Power failure
Option C:	Failure of Sensor
Option D:	Addition of new sensors
Q17.	In which mode, devices in a wireless network can directly communicate with each other
Option A:	Infrastructure
Option B:	Physical
Option C:	Digital
Option D:	Ad Hoc
Q18.	Moving of mobile nodes in and out of the MANET changes its
Option A:	Transmission range
Option B:	Transmission speed
Option C:	Bandwidth
Option D:	Topology
Q19.	A MANET does not have the following problem
Option A:	Security
Option B:	Node Cooperation
Option C:	Quick network setup
Option D:	Routing
Q20.	Which of the following uses CDMA/DSSS?
Option A:	IS-95
Option B:	GPRS

Option C:	EDGE
Option D:	GSM
Q21.	Which of these mobile generations employed hard and horizontal handoff
Option A:	1G
Option B:	2G
Option C:	3G
Option D:	4G
Q22.	Which of these demand rigorous and demanding reliability and delay constraints
Option A:	MANET
Option B:	VANET
Option C:	WSN
Option D:	WLAN
Q23.	A wireless communication channel has 1MHz bandwidth and 24 dB SNR. What will be the channel capacity?
Option A:	1 Mbps
Option B:	8 Mbps
Option C:	10 Mbps
Option D:	4.5 Mbps
Q24.	How many WLANs are supported on WLC in a Cisco UWN
Option A:	13
Option B:	15
Option C:	16
Option D:	512
Q25.	Super High Frequency (SHF) (3-30 GHz) radio waves are primarily used in
Option A:	Marine radio communication
Option B:	TV transmission
Option C:	Satellite communication
Option D:	AM radio communication

Program: BE Instrumentation Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ISC604 and Course Name: Digital Signal Processing

Time: 1hour

Max. Marks: 50

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

Q1.	1. If $x(n)$ and $X(k)$ are an N -point DFT pair, then $X(k+N)=?$
Option A:	$X(-k)$
Option B:	$-X(k)$
Option C:	$X(k)$
Option D:	$X(K+N)$
Q2.	If $X_1(k)$ and $X_2(k)$ are the N -point DFTs of $x_1(n)$ and $x_2(n)$ respectively, then what is the N -point DFT of $x(n)=ax_1(n)+bx_2(n)$?
Option A:	$X_1(ak)+X_2(bk)$
Option B:	$aX_1(k)+bX_2(k)$
Option C:	$e^{ak}X_1(k)+e^{bk}X_2(k)$
Option D:	$X_1(k)+X_2(k)$
Q3.	If $x(n)$ is a real sequence and $X(k)$ is its N -point DFT, then which of the following is true?
Option A:	$X(N-k)=X(-k)$
Option B:	$X(N-k)=X^*(-k)$
Option C:	$X(-k)=X^*(-k)$
Option D:	$X(K)=X(-K)$
Q4.	is the circular convolution of the sequences $X_1(n)=\{2,1,2,1\}$ and $x_2(n)=\{1,2,3,4\}$?
Option A:	$\{14,14,16,16\}$
Option B:	$\{16,16,14,14\}$
Option C:	$\{2,3,6,4\}$
Option D:	$\{14,16,14,16\}$
Q5.	What is the DFT of the sequences $X_1(n)=\{2,1,2,1\}$
Option A:	$\{6,0,2,0\}$
Option B:	$\{14,16,14,16\}$
Option C:	$\{14,14,16,16\}$
Option D:	$\{12,11,12,11\}$
Q6.	. Which of the following is a frequency domain specification?
Option A:	$0 \geq 20 \log H(j\Omega) $
Option B:	$H(j\omega)$

Option C:	$\log H(j\Omega) \leq KS$
Option D:	$H(S)$
Q7.	What is the lowest order of the Butterworth filter with a pass band gain $K_P=-1$ dB at $\Omega_P=4$ rad/sec and stop band attenuation greater than or equal to 20dB at $\Omega_S = 8$ rad/sec?
Option A:	4
Option B:	5
Option C:	6
Option D:	3
Q8.	What is the cutoff frequency of the Butterworth filter with a pass band gain $K_P=-1$ dB at $\Omega_P=4$ rad/sec and stop band attenuation greater than or equal to 20dB at $\Omega_S=8$ rad/sec?
Option A:	3.5787 rad/sec
Option B:	1.069 rad/sec
Option C:	6 rad/sec
Option D:	4.5787 rad/sec
Q9.	What is the stop band frequency of the normalized low pass Butterworth filter used to design a analog band pass filter with -3.0103dB upper and lower cutoff frequency of 50Hz and 20KHz and a stop band attenuation 20dB at 20Hz and 45KHz?
Option A:	2 rad/sec
Option B:	2.25 Hz
Option C:	2.25 rad/sec
Option D:	2 Hz
Q10.	. What is the order of the normalized low pass Butterworth filter used to design a analog band pass filter with -3.0103dB upper and lower cutoff frequency of 50Hz and 20KHz and a stop band attenuation 20dB at 20Hz and 45KHz?
Option A:	2
Option B:	3
Option C:	4
Option D:	5
Q11.	What is the formula for chebyshev polynomial $T_N(x)$ in recursive form?
Option A:	$2T_{N-1}(x) - T_{N-2}(x)$
Option B:	$2T_{N-1}(x) + T_{N-2}(x)$
Option C:	$2xT_{N-1}(x) + T_{N-2}(x)$
Option D:	$2xT_{N-1}(x) - T_{N-2}(x)$
Q12.	What is the value of chebyshev polynomial of degree 0?
Option A:	1
Option B:	0
Option C:	-1
Option D:	2
Q13.	What is the value of chebyshev polynomial of degree 0?

Option A:	1
Option B:	0
Option C:	-1
Option D:	2
Q14.	If all the poles have small magnitudes, then the rate of decay of signal is _____
Option A:	Slow
Option B:	Constant
Option C:	Rapid
Option D:	Random
Q15.	If one or more poles are located near the unit circle, then the rate of decay of signal is _____
Option A:	Slow
Option B:	Constant
Option C:	Rapid
Option D:	Random
Q16.	. If the ROC of the system function is the exterior of a circle of radius $r < \infty$, including the point $z = \infty$, then the system is said to be _____
Option A:	Stable
Option B:	Causal
Option C:	Anti causal
Option D:	None of the mentioned
Q17.	A linear time invariant system is said to be BIBO stable if and only if the ROC of the system function _____
Option A:	Includes unit circle
Option B:	Excludes unit circle
Option C:	Is an unit circle
Option D:	None of the mentioned
Q18.	In bilinear transformation, the left-half s-plane is mapped to which of the following in the z-domain?
Option A:	Entirely outside the unit circle $ z =1$
Option B:	Partially outside the unit circle $ z =1$
Option C:	Partially inside the unit circle $ z =1$
Option D:	Entirely inside the unit circle $ z =1$
Q19.	If all the poles of $H(z)$ are inside the unit circle, then the system is said to be _____
Option A:	Only causal
Option B:	Only BIBO stable
Option C:	BIBO stable and causal
Option D:	BIBO unstable
Q20.	Which of the following rule is used in the bilinear transformation?

Option A:	Simpson's rule
Option B:	Backward difference
Option C:	Forward difference
Option D:	Trapezoidal rule
Q21.	. If $s=\sigma+j\Omega$ and $z=re^{j\omega}$, then what is the condition on σ if $r<1$?
Option A:	$\sigma > 0$
Option B:	$\sigma < 0$
Option C:	$\sigma > 1$
Option D:	$\sigma < 1$
Q22.	If $s=\sigma+j\Omega$ and $z=re^{j\omega}$ and $r=1$, then which of the following inference is correct?
Option A:	LHS of the s-plane is mapped inside the circle, $ z =1$
Option B:	RHS of the s-plane is mapped outside the circle, $ z =1$
Option C:	Imaginary axis in the s-plane is mapped to the circle, $ z =1$
Option D:	$ Z =1$, for all
Q23.	If $s=\sigma+j\Omega$ and $z=re^{j\omega}$, then what is the condition on σ if $r>1$?
Option A:	$\sigma > 0$
Option B:	$\sigma < 0$
Option C:	$\sigma > 1$
Option D:	$\sigma < 1$
Q24.	The cost of the digital processors is cheaper because
Option A:	Processor allows time sharing among a number of signals
Option B:	The hardware is cheaper
Option C:	Require less maintenance
Option D:	Less power consumption
Q25.	In DSP processors, which among the following maintains the track of addresses of input data as well as the coefficients stored in data and program memories?
Option A:	Data Address Generators (DAGs)
Option B:	Program sequences
Option C:	Barrel Shifter
Option D:	MAC