University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: Computer Engineering

Curriculum Scheme: Rev2016

Examination: TE Semester VI

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

Time: 2 hour Max. Marks: 80

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

Option 1

Q.2-A) Answer: Explanation of 5 security mechanisms (1 mark for each mechanism)

Q.2-B) Answer: SSL is an internet protocol for secure exchange of information between a web browser and a web server. Features of SSL (2 marks)

- SSL is designed to make use of TCP to provide a reliable end to end secure service.
- SSL provides security services between TCP and applications that use TCP.

Diagram and explanation. (3 marks)

Q.2-C) Answer: At least 5 differences between DES and AES is expected (1 mark for each difference)

Q.2-D) Answer: Comparison includes following points (including all points Carries 5 marks)

Sl. No.	Monoalphabetic cipher	Polyalphabetic
1	The relation between character in the plaintext and cipher text is One-to-one	Relation is One-to-many
2	Once key is chosen, each alphabetic character of a plaintext is mapped onto a unique alphabetic character of a cipher text.	Each occurrences of a character can have a different substitute.

Q. 2-E) Answer: Man-in-the-middle attack is an attack in which an attacker is able to read, insert and modify messages between two parties without either party knowing that the link between them has been compromised. (Expiation for problem definition carries 2 marks)
(It covers following points like)

- Attacker must be able to observe and intercept messages going between the two victims.

This attack works against public-key cryptography.

- MTM attack may include eavesdropping, including traffic analysis and possibly a known-plaintext attack.

(Diagram and explanation carries 3 marks)

Q.2-F) Answer: Applications of hash functions (It may covers following points with explanation carries 5 marks)

- Verification of message integrity.
- Password verification.
- Generation of pseudorandom bits.

Option 2

Q.3-A)

Answer: i) The Private Key of user is 23 (5 marks)

ii) Plaintext of user is 88 (5 marks)

Q. 3-B)

Answer: A firewall may be hardware or a software program running on a secure host computer. A firewall is placed at junction or gateways between the two networks. (Firewall explanation carries 3 marks)

(All firewalls types' explanation along with diagram carries 7 marks)

Types of firewalls

Packet filtering, Application level gateways, Circuit level gateways.

Q.3-C)

Answer:

Cross site scripting

- Description about cross site scripting (1 mark)
- Types of cross site scripting (2 marks)
- Diagram (2 marks)

Buffer overflow

- Description about buffer overflow (1 mark)
- Buffer overflow Diagram (2 marks)

What happens when buffer overflow occurs (2 marks)

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Examination: TE Semester VI

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

Time: 2 hour Max. Marks: 80

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	A student gives a cheque for $ 20 to buy a used book. Later she finds that the cheque was cashed for $200. Which type of security attack happened in this case.
Option A:	Modification
Option B:	Masquerading
Option C:	Relaying
Option D:	Repudiation
2.	Which of the following is passive attack?
Option A:	Relay attack
Option B:	Masquerade
Option C:	Traffic analysis
Option D:	Which of the following is passive attack?
3.	Assuming the same key is used, two occurrences of the same plaintext character are encrypted as identical output symbols in which of the following
Option A:	Caesar Cipher
Option B:	Vigenere Cipher
Option C:	Hill Cipher
Option D:	One-time Pad
4.	_____ is the science and art of breaking secret codes.
Option A:	Cryptography
Option B:	Cryptanalysis
Option C:	Cryptobreaker
Option D:	Steganography
5.	To encrypt a message from Alka to Brijesh using public key cryptography, the following is needed:
Option A:	Alka's private key
Option B:	Alka's public key
Option C:	Brijesh's private key
Option D:	Brijesh's public key
6.	_____ work by calculating every possible combination that could make up a password and testing it to see if it is the correct password.
Option A:	Statistical attack

Option B:	Brute-force attack
Option C:	Pattern attack
Option D:	Modification attack
7.	Which of the following algorithm is used for key exchange
Option A:	AES
Option B:	DES
Option C:	Diffie Hellman
Option D:	RSA
8.	A Substitution box provides
Option A:	Diffusion only
Option B:	Confusion only
Option C:	Both diffusion and confusion
Option D:	Neither confusion nor diffusion
9.	The number of rounds in 56-bit DES and 128-bit DES are respectively
Option A:	12 and 12
Option B:	12 and 16
Option C:	16 and 16
Option D:	16 and 20
10.	The main purpose of plaintext padding is to
Option A:	Prevent side channel attacks
Option B:	Improve the speed of decryption
Option C:	Prevent plaintext guessing
Option D:	Prevent known plaintext attacks
11.	Which of the following is not an element/field of the X.509 certificates?
Option A:	Issuer Name
Option B:	Serial Modifier
Option C:	Issue unique identifier
Option D:	Signature
12.	Compared to the El Gamal signature, which of the following is true of the Schnorr signature?
Option A:	Signature generation is faster
Option B:	It is less secure
Option C:	It is more space efficient
Option D:	It does not require generation of a random number
13.	_____ provides a centralized authentication server whose function is to authenticate users to servers and servers to users.
Option A:	Kerberos authentication protocol
Option B:	Needham Schroeder authentication protocol
Option C:	One way authentication protocol
Option D:	Needham Schroeder symmetric authentication protocol
14.	Which of the following is NOT the port scan technique?
Option A:	TCP connect

Option B:	TCP SYN
Option C:	TCP FIN
Option D:	TCP CON
15.	A _____ tries to formulate a web resource occupied or busy its users by flooding the URL of the victim with unlimited requests than the server can handle.
Option A:	Phishing attack
Option B:	DoS attack
Option C:	Website attack
Option D:	MiTM attack
16.	SSL provides security at which layer?
Option A:	Application
Option B:	Transport
Option C:	Network
Option D:	Data link
17.	Pretty Good Privacy (PGP) is used in
Option A:	Browser security
Option B:	FTP security
Option C:	Email security
Option D:	SSL
18.	Which of the following firewall type is most complex
Option A:	Packet filtering
Option B:	Stateful inspection
Option C:	Application Proxy
Option D:	Guard
19.	The internal code of any software that will set of a malicious function when specified conditions are met, is called _____
Option A:	logic bomb
Option B:	trap door
Option C:	code stacker
Option D:	none of the above
20.	Which of the following statement is true for virus?
Option A:	A virus typically does not modify any stored program
Option B:	A virus can be spread faster than worm.
Option C:	A virus requires user interaction to infect a machine
Option D:	A virus can only infect a single machine

Q2.	**Solve any Four out of Six** **5 marks each**
A	Explain different security mechanisms.
B	Why Secure Socket layer (SSL) is needed? What are the features of SSL?
C	Compare DES and AES
D	Compare Mono alphabetic cipher and poly alphabetic cipher.

E	Explain Man-in-the-middle attack.
F	Explain the applications of Hash functions

Q3.	**Solve any Two Questions out of Three** **10 marks each**
A	In RSA system, the public key of a given user is e=7 and n=187? i) What is the private key of this user? ii) If the intercepted ciphertext is c=11 and sent to a user whose public key is e=7 and n=187, what is the plaintext?
B	What is firewall? Explain different types of firewalls.
C	Explain cross site scripting and buffer overflow concept in detail.

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSDLO6021 and Course Name:MACHINE LEARNING

Time: 1 hour Max. Marks: 50

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

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

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSDLO6021 and Course Name:MACHINE LEARNING

Time: 1 hour Max. Marks: 50

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

Q1.	The numerical output of a sigmoid node in a neural network:
Option A:	Is either 0 or 1.
Option B:	Is either -1 or 1.
Option C:	Is bounded between 0 and 1.
Option D:	Is either 0 or -1.
Q2.	A 3-input neuron is trained to output a zero when the input is 110 and a one when the input is 111. After generalization, the output will be zero when and only when the input is:
Option A:	000 or 110 or 011 or 101
Option B:	010 or 100 or 110 or 101
Option C:	000 or 010 or 110 or 100
Option D:	100 or 111 or 101 or 001
Q3.	The diagram shows which function:https://drive.google.com/file/d/1CgyOpLqFkzmEjeAtZwOuMGidkrwdvVyy/view?usp=sharing
Option A:	Sigmoid
Option B:	Binary step
Option C:	Softmax
Option D:	ReLu
Q4.	What are dendrites?
Option A:	fibers of nerves
Option B:	nuclear projections
Option C:	other name for nucleus
Option D:	output unit
Q5.	For the following data can SVM be used? diagram:https://drive.google.com/file/d/15w-AMAgxbGPixtWqmobctnX1pcWhY47A/view?usp=sharing
Option A:	Kernel trick will help to classify the data.
Option B:	Polynomial function cannot be used to classify the data.

Option C:	The problem cannot be solved using an SVM.
Option D:	Kernel trick will not help to classify the data.
Q6.	Which of the following statements about Naive Bayes is incorrect?
Option A:	Attributes are equally important.
Option B:	Attributes are statistically dependent on one another given the class value.
Option C:	Attributes are statistically independent of one another given the class value.
Option D:	Attributes can be nominal or numeric
Q7.	Suppose we would like to perform clustering on spatial data such as the geometrical locations of houses. We wish to produce clusters of many different sizes and shapes. Which of the following methods is the most appropriate?
Option A:	Decision Trees
Option B:	Density-based clustering
Option C:	Model-based clustering
Option D:	K-means clustering
Q8.	Which of the following can only be used when training data are linearly separable?
Option A:	Linear hard-margin SVM.
Option B:	Linear Logistic Regression.
Option C:	Linear Soft margin SVM.
Option D:	The centroid method.
Q9.	How does the state of the process is described in HMM?
Option A:	Literal
Option B:	Single random variable
Option C:	Single discrete random variable
Option D:	Single literal variable
Q10.	Which statement about outliers is true?
Option A:	Outliers should be identified and removed from a dataset
Option B:	Outliers should be part of the training dataset but should not be present in the test data.
Option C:	Outliers should be part of the test dataset but should not be present in the training data
Option D:	The nature of the problem determines how outliers are used.
Q11.	What happens when you get features in lower dimensions using PCA? 1.The features will still have interpretability 2.The features will lose interpretability 3.The features must carry all information present in data 4.The features may not carry all information present in data
Option A:	1 and 3
Option B:	1 and 4
Option C:	2 and 3

Option D:	2 and 4
Q12.	When performing regression or classification, which of the following is the correct way to preprocess the data?
Option A:	Normalize the data → PCA → training
Option B:	PCA → normalize PCA output → training
Option C:	Normalize the data → PCA → normalize PCA output → training
Option D:	PCA → output →normalize PCA→ training
Q13.	Which of the following techniques would perform better for reducing dimensions of a data set?
Option A:	Removing columns which have too many missing values
Option B:	Removing columns which have high variance in data
Option C:	Removing columns with dissimilar data trends
Option D:	Removing columns which have low variance in data
Q14.	Which is not true about gradient of a continuous and differential function?
Option A:	Is zero at minimum
Option B:	Is non-zero at maximum
Option C:	Is zero at saddle point
Option D:	decreases as you get closer to the saddle point
Q15.	A system is designed to evaluate the emails as spam or not spam is an example of
Option A:	Reinforcement Learning
Option B:	Supervised Classification
Option C:	Supervised Regression
Option D:	Unsupervised Learning
Q16.	Match the steps required for developing machine learning applications[1, 2, 3, 4] with the activities done in each step[a, b, c, d] as given below. [1] Problem statement formulation, [2] Data Conditioning, [3] Experience gathering, [4] Fine tuning the model; [a] Improving the accuracy of the model, [b] Web scraping, [c] Removing outliers in data, inconsistent, incorrect, missing or skewed information,[d] Identify right machine learning required.
Option A:	2-c,1-d,3-a,4-b
Option B:	1-d,2-c,3-b,4-a
Option C:	1-d,2-b,3-c,4-a
Option D:	1-c,2-d,3-a,4-b
Q17.	A computer program is said to learn from experience E with respect to some task T and some performance measure P if its performance on T, as measured by P, improves with experience E. Suppose we feed a learning algorithm a lot of historical weather data, and have it learn to predict weather. In this setting, what is T?

Option A:	The weather prediction task. Predicting a future date's weather.
Option B:	Checking the condition of weather station
Option C:	The process of the algorithm examining a large amount of historical weather data.
Option D:	No. of days for which the algorithm is predicting the weather correctly
Q18.	The optimization methods where derivative of objective function is not used for convergence.
Option A:	Steepest descent and Newton's method
Option B:	Steepest descent and Random search method
Option C:	Random search and Downhill simplex method
Option D:	Newton's method and Downhill simplex method
Q19.	For what value of x is the function x^2 – 2x -6 minimized?
Option A:	0
Option B:	1
Option C:	5
Option D:	3
Q20.	The next iterative value of the root of x^2-4=0 using the Newton method, if the initial guess is 3, is
Option A:	1.5
Option B:	2.067
Option C:	2.167
Option D:	3
Q21.	High entropy means that the partitions in classification are
Option A:	pure
Option B:	not pure
Option C:	useful
Option D:	useless
Q22.	The error function most suited for gradient descent using logistic regression is
Option A:	The Root Mean Square(RME) Method
Option B:	The squared error.
Option C:	The cross-entropy function.
Option D:	The number of mistakes.
Q23.	Suppose you want to predict whether it will be raining at 5pm tomorrow or not using machine learning. What type of problem is this?
Option A:	Regression
Option B:	Classification
Option C:	Optimization
Option D:	Clustering

Q24.	Consider the decision tree given below and solve the given queries. One married person with 2 family members, earning total 55000/-, will buy a flat of Diagram: https://drive.google.com/file/d/12PMURmPaXYw2knKS1Ga35pqbJ_bWV03c/view?usp=sharing
Option A:	1BHK
Option B:	2BHK
Option C:	3BHK
Option D:	4BHK
Q25.	A _____ is a decision support tool that uses a tree-like graph or model of decisions and their possible consequences, including chance event outcomes, resource costs, and utility.
Option A:	Nodes
Option B:	Trees
Option C:	Graph
Option D:	Decision Tree

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSDLO6023 and Course Name: Enterprise Resource Planning

Time: 1 hour Max. Marks: 50

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

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

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSDLO6023 and Course Name: Enterprise Resource Planning

Time: 1 hour Max. Marks: 50

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

Q1.	Organization's supplier value chain is known as _____
Option A:	upstream value chain
Option B:	downstream value chain
Option C:	left stream value chain
Option D:	right stream value chain
Q2.	The extension of MRP which extends to resources such as labor hours and machine hours, as well as to order entry, purchasing, and direct interface with customers and suppliers is _____
Option A:	MRP II
Option B:	Enterprise Resource Planning
Option C:	the master production schedule
Option D:	closed-loop MRP 7
Q3.	What plays an important role in ERP
Option A:	Information
Option B:	Employees
Option C:	Customers
Option D:	Database
Q4.	What is the reason for ERPs explosive growth?
Option A:	ERP is a logical solution to the mess of incompatible applications
Option B:	ERP addresses the need for global information sharing and reporting
Option C:	ERP is used to avoid the pain and expense of fixing legacy systems
Option D:	All of the mentioned
Q5.	_____ became the prime concept of production management and control.
Option A:	BOM
Option B:	MRP
Option C:	ERP
Option D:	MRP-II
Q6.	Conceptually which statement is most accurate for an ERP

Option A:	ERP means more work and procedure
Option B:	ERP makes many employees redundant
Option C:	ERP integrate and automate organization processes
Option D:	ERP is sole responsibility of management
Q7.	While selecting an ERP , what is a common error that organization 's make ?
Option A:	Non biased selection
Option B:	Over-emphasis on system cost
Option C:	Complete set of requirements
Option D:	Not relying on vendor demos
Q8.	The _____ of a project is directly related to the amount of time that a company has before the completion of the ERP implementation.
Option A:	scope
Option B:	speed
Option C:	risk
Option D:	resource
Q9.	Which is one of the most important outcome of the ERP implementation?
Option A:	Creation of Organizational Model
Option B:	Creation of Integrated Data Model
Option C:	Creation of Business Model
Option D:	Creation of Data Model
Q10.	Which phase is the most crucial step of ERP implementation
Option A:	installing
Option B:	training
Option C:	gap analysis.
Option D:	testing
Q11.	Budgeted balance sheets and cost planning are based on _____values
Option A:	future
Option B:	past
Option C:	current
Option D:	depreciation
Q12.	Who are the prime users of SCM systems
Option A:	Sales, marketing, customer service
Option B:	Accounting, finance, logistics, and production
Option C:	Customers, resellers, partners, suppliers, and distributors
Option D:	All of the mentioned
Q13.	Which are the two objectives of JIT approach applied to the organization. 1. Production system 2. Elimination of Waste

	3. Total Employee Involvement 4. Production philosophy
Option A:	1 & 2
Option B:	2 & 3
Option C:	1 & 4
Option D:	3 & 4
Q14.	Which of the following are the subsystems of Plant Maintenance module of an ERP system: 1. Component Tracking 2. Preventive Maintenance Control 3. Inventory Management 4. Cost Management
Option A:	1, 2 & 3
Option B:	2, 3 & 4
Option C:	1 & 2
Option D:	1, 3 & 4
Q15.	Reverse engineering of data focuses on
Option A:	Internal data structures
Option B:	Database structures
Option C:	All of the mentioned
Option D:	None of the mentioned
Q16.	Identify correct product life cycle stages
Option A:	distribute, promote, develop
Option B:	analysis, design, test
Option C:	growth, maturity, decline
Option D:	growth, collaborate, sustain
Q17.	The primary concept of _____ is that storing huge or large amount of data
Option A:	data mining
Option B:	OLAP
Option C:	supply chain management
Option D:	data warehousing
Q18.	From the options given below which of the following is not a ERP security issue
Option A:	Delayed updates
Option B:	full access rights
Option C:	inadequate training
Option D:	All of the mentioned
Q19.	The common ERP system security problems are _____ & _____
Option A:	cost of consultant, work estimates
Option B:	Delayed updates & Full access rights

Option C:	selection process and implementation process
Option D:	License fees & vendor charges
Q20.	With headlines often commenting on breaches of Internet security, what is the term used for specialized software to prevent unauthorized access to company data from outsiders?
Option A:	Firewall
Option B:	Middleware
Option C:	Enterprise application integration - EAI
Option D:	Web analytics system
Q21.	Which of the following is a non functionality in Marketing SAP CRM?
Option A:	Managing marketing campaigns, marketing-campaign process, including design, execution, coordination, optimization, and monitoring.
Option B:	To analyze the customer behavior, products, market channels, trends, profitability, and other important information related to customer.
Option C:	To create personalized product proposals for each Web site visitor and it involves existing or new customers to the company.
Option D:	To manage, monitor, capture and save all the critical details about customers, products, partners and prospects.
Q22.	_____ helps business to protect their existing investment, extend the value of their application and evolve to the next generation of business application
Option A:	Oracle E-Business Suite
Option B:	Siebel CRM
Option C:	Enterprise SCM
Option D:	EAI
Q23.	Homebuilder Management is fully integrated system of applications designed to _____
Option A:	integrate configuration management
Option B:	increase efficiencies and enhance collaboration throughout business cycle
Option C:	choose the strategies, tactics and functionality to accommodate solution
Option D:	gain more accurate picture of future demand
Q24.	The _____ is(are) the MRP input detailing which end items are to be produced, when they are needed, and in what quantities.
Option A:	master production schedule
Option B:	gross requirements
Option C:	inventory records
Option D:	assembly time chart
Q25.	The _____ provides a graphical production management tool that delivers immediate visibility of changes in capacity utilization.
Option A:	Electronic Planning Board

Option B:	JIT
Option C:	Shop Floor order
Option D:	General Ledger

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSDLO6024 and Course Name: Advanced Computer Network

Time: 1hour Max. Marks: 50

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

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

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSDLO6024 and Course Name: Advanced Computer Network

Time: 1hour Max. Marks: 50

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

Q1.	SONET has ___Layers
Option A:	5
Option B:	3
Option C:	4
Option D:	6
Q2.	How many rows an STS-3 frame is made up of?
Option A:	27
Option B:	9
Option C:	3
Option D:	2
Q3.	Which SONET layer is responsible for the movement of a signal from its optical source to its optical destination?
Option A:	line
Option B:	path
Option C:	photonic
Option D:	section
Q4.	The header size of ATM cell is ____.
Option A:	6 bytes
Option B:	4 bits
Option C:	5 bytes
Option D:	6 bits
Q5.	The ___ accepts transmission from upper layer services.
Option A:	Physical
Option B:	ATM
Option C:	SAR
Option D:	AAL
Q6.	Application Adaptation layer 1 (AAL1) uses ____

Option A:	Constant bit rates
Option B:	high bit rate
Option C:	low bit rate
Option D:	variable bit rate
Q7.	The Application Adaptation Layer 2 (AAL2) is used for____ traffic
Option A:	Constant bit rates
Option B:	high bit rate
Option C:	low bit rate
Option D:	variable bit rate
Q8.	The Simple and Efficient Adaptation Layer (SEAL) is another name for ____
Option A:	AAL1
Option B:	AAL2
Option C:	AAL3/4
Option D:	AAL5
Q9.	What is size of an IP address in IPv6?
Option A:	128 bits
Option B:	4 bits
Option C:	256 bits
Option D:	8bytes
Q10.	The header length of an IPv6 datagram is _____
Option A:	25bytes
Option B:	10bytes
Option C:	40bytes
Option D:	20 bytes
Q11.	Which layer in X.25 handles connection establishment?
Option A:	Physical
Option B:	Transport
Option C:	Frame
Option D:	Network
Q12.	Which among the following features is not present in IPv4 but available in IPv6?
Option A:	Header checksum
Option B:	Fragmentation
Option C:	Options
Option D:	Anycast address
Q13.	X.25 uses ____ protocol at data link layer.
Option A:	LAPB
Option B:	LAPD
Option C:	LAPX
Option D:	PLP

Q14.	The ____ routing is used in intradomain OSPF protocol.
Option A:	Link State
Option B:	Path Vector
Option C:	Distance Vector
Option D:	constraint
Q15.	A router running the BGP sends _____ message to create neighborhood relationship.
Option A:	Open
Option B:	Update
Option C:	KeepAlive
Option D:	Wait
Q16.	An IGMP query is sent from a _____ to a _____
Option A:	host; host
Option B:	router; host or router
Option C:	host; router
Option D:	repeater; repeater
Q17.	Reverse Path Broadcasting (RPB) guarantees that each packet reaches every
Option A:	System ID
Option B:	Source
Option C:	Header
Option D:	Network
Q18.	In Distance Vector Routing, each node shares its routing table with its ___
Option A:	Immediate Neighbors
Option B:	Next lane Neighbors
Option C:	Distant Neighbors
Option D:	First node neighbors
Q19.	Real-time transport protocol (RTP) is used in _____
Option A:	secure the stream
Option B:	monitor quality of service of streams
Option C:	monitor transmission statistics of streams
Option D:	carry the media stream
Q20.	Which is a standard to allow telephones on the public telephone network to talk to computers connected to the internet?
Option A:	H.323
Option B:	SIP
Option C:	Q.991
Option D:	SNMP
Q21.	In a network, when the load is below the capacity of the network, the throughput ___

Option A:	declines proportionally with the load
Option B:	increases sharply
Option C:	increases proportionally with the load
Option D:	declines sharply
Q22.	How many servers queue length M/M/1 represents?
Option A:	One
Option B:	Two
Option C:	Eleven
Option D:	Ten
Q23.	The _____ defines the maximum data rate of the traffic
Option A:	effective bandwidth
Option B:	peak data rate
Option C:	Bandwidth
Option D:	maximum burst size
Q24.	The application-level protocol in which a few manager stations control a set of agents is called as
Option A:	SNMP
Option B:	UDP
Option C:	TCP
Option D:	HTML
Q25.	In SNMP protocol, SMI stand for___
Option A:	Structure of Management Interface
Option B:	Structure of Mapping Interface
Option C:	Structure of Management Information
Option D:	Structure of Map Information

Program: BE Information Technology

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ITDL06021 and Course Name: Advanced Internet Programming

Time: 1 hour Max. Marks: 50

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

Q16.	D
Q17.	A
Q18.	B
Q19.	C
Q20.	D
Q21.	D
Q22.	B
Q23.	B
Q24.	A
Q25.	B

Program: BE Information Technology

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ITDL06021 and Course Name: Advanced Internet Programming

Time: 1 hour Max. Marks: 50

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

Q1.	SERPs are?
Option A:	Pages which takes user query to perform search
Option B:	Pages which diverts user to advertisement.
Option C:	Pages which are returned from search engine
Option D:	Pages which are feed in to search engine
Q2.	Which of the following is an intention behind header tag optimization for SEO?
Option A:	Use the header tags to make text bold
Option B:	Use the header tags to change the text size
Option C:	To use header tags for styling the web page
Option D:	To provide content based structure to the web page
Q3.	A service which is used for communication between client and a server application through the internet is called as _____
Option A:	Web services
Option B:	Web service registry
Option C:	web service provider
Option D:	web service consumer
Q4.	Which component of semantic web stack is SQL-like language?
Option A:	XML
Option B:	OWL
Option C:	SPARQL
Option D:	RIF
Q5.	RDF data model can be expressed in a ------ file format or syntax.
Option A:	Turtle
Option B:	Text
Option C:	XML
Option D:	HTML
Q6.	When a user misspells the query, search engine use which of the following feature to determine intent of searcher?

Option A:	Proximity search
Option B:	Fuzzy logic
Option C:	Boolean search
Option D:	Term weighting
Q7.	The actions a user can take to achieve milestone or steps that help the visitors in reaching the end goal are referred to as _____
Option A:	Macro Conversion
Option B:	Micro Conversion
Option C:	Metric Conversion
Option D:	Total Conversion
Q8.	Web search engines stores information about many web pages generated by_____
Option A:	Web crawler
Option B:	Web indexer
Option C:	Web organizer
Option D:	Web router
Q9.	Which popular standard of XML is used to avoid the name conflict by providing a unique name to each element?
Option A:	XML Schemas
Option B:	XML Namespaces
Option C:	XML Digital Signature
Option D:	Xquery
Q10.	Which component of Semantic Web gives the description of conceptualization?
Option A:	URI
Option B:	Ontology
Option C:	Instance Data
Option D:	Semantic Web Language
Q11.	A meta search engine?
Option A:	Returns a list of sites based on the list of search terms you enter
Option B:	Searches a variety of other search engines
Option C:	Allows all users to change its content
Option D:	Returns a list of sites that have been reviewed by humans
Q12.	When the keywords are placed in the page with intention to alter site ranking it is called as?
Option A:	Keyword Cloaking
Option B:	Keyword Stuffing
Option C:	Keyword Meta Use
Option D:	Keyword overuse
Q13.	Which tool is used for Experimentation and Testing strategy in Web Analytics 2.0?
Option A:	Google Analytics

Option B:	Google Website Optimizer
Option C:	Google Ads Planner
Option D:	Webtrends
Q14.	Which of the following type of search is not possible?
Option A:	Image
Option B:	Audio
Option C:	Video
Option D:	Text
Q15.	Which specification is used to define an XML-based syntax or model, which describes and communicates the policies that must exist in any web-based service?
Option A:	WS-Atomic Transaction
Option B:	WS- Reliable Messaging
Option C:	WS-Security
Option D:	WS-Policy
Q16.	Which attribute of <xsl:apply-template> element is used to specify which node to be processed instead of processing all the nodes
Option A:	Name
Option B:	priority
Option C:	mode
Option D:	Select
Q17.	A way to show where user is in the navigation hierarchy is termed as?
Option A:	Breadcrumb navigation
Option B:	Horizontal navigation
Option C:	Tree navigation
Option D:	Vertical navigation
Q18.	JSON is a
Option A:	programming language
Option B:	interchange exchange format
Option C:	client side programming language
Option D:	server side scripting language
Q19.	Here, you compose an HTML SCRIPT tag to make a request to an application proxy that returns your XML data wrapped in JavaScript.
Option A:	Web Scrapping
Option B:	Script Injection
Option C:	Dynamic Scripting
Option D:	Runtime scripting
Q20.	What is the purpose of implementing AJAX?
Option A:	Client side validation
Option B:	Exchanging data between the Web server and client

Option C:	Synchronously exchange data between client and server
Option D:	Asynchronously exchange data between client and server
Q21.	Identify the macro conversion type that help in studying the Key Performance Indicators
Option A:	Viewing a product page
Option B:	Adding a product to the cart
Option C:	Visit frequency above target
Option D:	Paid subscription sign up
Q22.	The process of collecting, analyzing and reporting the data of a website is known as _____
Option A:	Web services
Option B:	Web Analytics
Option C:	Web Application
Option D:	Web designing
Q23.	Which of the following have highest impact factor on page ranking?
Option A:	Engagement Metrics
Option B:	Link-based metrics
Option C:	Social shares
Option D:	Exact match domains
Q24.	Which of the following is not case sensitive?
Option A:	HTML
Option B:	XML
Option C:	JSON
Option D:	JavaScript
Q25.	_____is used to identify the source from where the traffic is coming and the reason behind the incoming traffic.
Option A:	Customers Behavior
Option B:	Social Insight
Option C:	Keywords
Option D:	Clickstream

Program: BE Information Technology Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ITDLO6023 and Course Name: Digital Forensics

Time: 1 hour Max. Marks: 50

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

Q16.	C
Q17.	B
Q18.	A
Q19.	C
Q20.	D
Q21.	D
Q22.	A
Q23.	C
Q24.	D
Q25.	C

Program: BE Information Technology Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ITDLO6023 and Course Name: Digital Forensics

Time: 1 hour Max. Marks: 50

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

Q1.	Definition of cybercrime is
Option A:	a criminal activity involving a computer, networked device or a network
Option B:	criminal activity involving a computer
Option C:	criminal activity involving a networked device
Option D:	any criminal activity that involves a network
Q2.	A copy which includes all necessary parts of evidence, which is closely related to the original evidence.
Option A:	Digital Evidence
Option B:	Best Evidence
Option C:	Original Evidence
Option D:	Complete Evidence
Q3.	CSIRT stands for _____
Option A:	Computer security incident response team
Option B:	Computer software incident resource team
Option C:	Common security incident resolution team
Option D:	Computer security incident resource team
Q4.	Forensic Duplication is necessary
Option A:	as it preserves original digital evidence & allows recreation of the duplicate image
Option B:	as it creates restored image
Option C:	as it creates and stores mirror image
Option D:	as it helps in live system duplication
Q5.	Analyzing data collected from different sites, Firewalls and IDS is called as..?
Option A:	Computer Forensics
Option B:	Network Forensics
Option C:	Mobile Devices Forensics
Option D:	Memory Forensics

Q6.	Which one among the following statements is not a goal of good forensic report writing
Option A:	describe accurately the details of the incident
Option B:	Be understandable to decision makers
Option C:	Be able to withstand the legal scrutiny
Option D:	Cannot be easily referenced
Q7.	Which among the following is not an example of cyber crime
Option A:	SQL injection
Option B:	Identity theft
Option C:	Hacking
Option D:	Designing antivirus
Q8.	If there ought to be no doubt about the reality of the specialist's decision, then the evidence is said to be...?
Option A:	Authentic
Option B:	Admissible
Option C:	Believable
Option D:	Reliable
Q9.	In central incident response team how many teams handle incidents occourring in whole organization?
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q10.	Restoration Process involves
Option A:	blind sector to sector copy of the duplicate file
Option B:	collection of Digital Evidence
Option C:	creation of response toolkit
Option D:	check the dependencies
Q11.	Securing and isolating the state of physical and logical evidences from being altered is referred as.....?
Option A:	Identification
Option B:	Preservation
Option C:	Collection
Option D:	Examination
Q12.	Which one among the following statements should be present in the layout of forensic report
Option A:	Findings
Option B:	Hacking tools
Option C:	Information related to importance of digital forensics

Option D:	Budget
Q13.	What type of attack accomplishes the confidential information by modes of human communication?
Option A:	Spoofing
Option B:	Cyber attack
Option C:	Social engineering
Option D:	Phishing
Q14.	What is LAND attack?
Option A:	Large Area Neutron Detector
Option B:	Liberal Arts Network for Development
Option C:	Local Area Network Denial
Option D:	Local Area Network Design
Q15.	Which statements among the following is applicable to virus dissemination
Option A:	committed by an cyber criminals by accessing a computer system
Option B:	is a technique allowing cyber criminals to play upon the security vulnerabilities of the software running a web site
Option C:	executing malicious scripts in a web browser of the user by including malicious code in a legitimate web page
Option D:	Affecting the data stored by changing or by deleting it.
Q16.	Which statement among the following is not applicable to safe online shopping
Option A:	URL beginning with https
Option B:	avoiding public WIFI
Option C:	sharing CVV number of the credit card
Option D:	using strong passwords
Q17.	Which of the following is an example of Testimonial Evidence?
Option A:	Printed Emails
Option B:	Affidavit
Option C:	Maps
Option D:	Cell Phone logs
Q18.	What investigative questions is a live data collection likely to help answer?
Option A:	Can help determine if there are signs of malicious activity
Option B:	Can catch the malicious users
Option C:	Not adequate to get started with investigation
Option D:	Can save the malicious attack from happening
Q19.	Following container stores case metadata
Option A:	AFD
Option B:	AFF
Option C:	EWF
Option D:	AFM

Q20.	Which among the following is not the need of Computer forensics tools
Option A:	OS on which the forensic tool run
Option B:	Which OS does the tool support
Option C:	vendors capabilities for providing support
Option D:	whether the tool is low cost
Q21.	In Slueth kit tool "blk" prefix operate on
Option A:	volume
Option B:	file system structures
Option C:	metadata layer
Option D:	Data unit layer
Q22.	------ command is used in volume layer tools
Option A:	mmstat
Option B:	blkstat
Option C:	istat
Option D:	img_stat
Q23.	If a security incident includes the changes in hardware , software , and firmware without authentication , then what kind of a security incident this is ?
Option A:	Low level incidents
Option B:	Mid-level incidents
Option C:	High level incidents
Option D:	False level incidents
Q24.	Which of the following phase comes after recovery phase
Option A:	Preparation
Option B:	Modification
Option C:	Eradication
Option D:	Follow-up
Q25.	Which of the following is not a challenge in Evidence handling?
Option A:	Evidence Validation
Option B:	Evidence Authentication
Option C:	Evidence Collection
Option D:	Maintaining the chain of custody

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: CSC601 and Course Name: Software Engineering

Time: 1 hour Max. Marks: 50

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

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: CSC601 and Course Name: Software Engineering

Time: 1 hour Max. Marks: 50

==========

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

Q1.	Is an evolutionary software process model that couples the iterative nature of prototyping with the controlled and systematic factors of the linear sequential model.
Option A:	The Spiral Model.
Option B:	The Waterfall Model.
Option C:	The Incremental Model.
Option D:	The Revolutionary Model
Q2.	A Person is anyone within the company that has a right away business hobby inside the device or product to be built and might be rewarded for a triumph outcome or criticized if the attempt fails.
Option A:	Developer
Option B:	Stakeholder
Option C:	Coder
Option D:	Proprietor
Q3.	Software is
Option A:	Superset of programs
Option B:	Subset of programs
Option C:	Subset of instructions
Option D:	Part of coding
Q4.	The items described within the data modeling phase are transformed to acquire the records go with the flow important to put in force a commercial enterprise characteristic is known as.
Option A:	Data Objects
Option B:	Program Objects
Option C:	Value Objects
Option D:	Small Objects
Q5.	Requirements (imposed at the company) that must be met to attain the goals or provide proof of motive to comply with the goals are referred to as.
Option A:	Missions
Option B:	Assignments
Option C:	Commitments
Option D:	Projects

Q6.	Perfective maintenance extends the software program past its original.
Option A:	Software requirements
Option B:	Hardware requirements
Option C:	Process requirements
Option D:	Functional requirements
Q7.	The SRS document is also referred to as which sort of specification
Option A:	Black box
Option B:	White box
Option C:	Gray Box
Option D:	Glass box
Q8.	What sort of method was delivered for elicitation and modelling to provide a functional view of the system
Option A:	Object Oriented Design (by Booch)
Option B:	Use Cases (by Jacobson)
Option C:	Fusion (by Coleman)
Option D:	Object Modeling Technique (by Rumbaugh)
Q9.	Which level of CMM focuses on process improvement
Option A:	Initial
Option B:	Optimizing
Option C:	Defined
Option D:	Repeatable
Q10.	Effective modular design should have
Option A:	Low cohesion & High coupling
Option B:	High cohesion & High coupling
Option C:	Low cohesion & Low coupling
Option D:	High cohesion & Low coupling
Q11.	COCOMO-II model is an example of :
Option A:	Risk Management
Option B:	Estimation Models
Option C:	Requirement Analysis
Option D:	software testing
Q12.	Empirical Estimations model are constructed on:
Option A:	Expert judgement based on past projects
Option B:	Regression models derived from historical project data
Option C:	Expected value estimation
Option D:	Trial and error parameter values
Q13.	Which of the subsequent does not fall beneath project scheduling
Option A:	Effort validation
Option B:	Market assessment
Option C:	Compartmentalization

Option D:	Time allocation
Q14.	Guess that one word can depict the importance of software program layout.
Option A:	Efficiency
Option B:	Complexity
Option C:	Unambiguous
Option D:	Quality
Q15.	Which of the subsequent is not a major design consideration of the system?
Option A:	Response time required
Option B:	Frequency of record updates
Option C:	Availability of technically qualified personnel to carry out design and development
Option D:	Data integrity constraint
Q16.	Which one of the following define the characteristic of a good user interface?
Option A:	Error recovery, feedback and consistency
Option B:	Keyboard data entry
Option C:	Menu Options
Option D:	Font size
Q17.	What establishes the profile of end-users of the system?
Option A:	Design model
Option B:	User's model
Option C:	Mental model
Option D:	System model
Q18.	Match the Following : A Performance risk B Cost risk C Support risk D Schedule risk 1.the degree of uncertainty that the product will meet its requirements and be fit for its intended use. 2.the degree of uncertainty that the project budget will be maintained. 3.the degree of uncertainty that the resultant software will be easy to correct, adapt, and enhance. 4.the degree of uncertainty that the project schedule will be maintained and that the product will be delivered on time.
Option A:	A-1 , B-2 , C-3 and D-4
Option B:	A-2 , B-1 , C-4 and D-3
Option C:	A-3 , B-4 , C-1 and D-2
Option D:	A-4 , B-3 , C-2 and D-1

Q19.	Which of the following are objectives of FTR?
Option A:	Determining who introduced the error in the program
Option B:	Assess programmer productivity.
Option C:	Determining who introduced an error into the program
Option D:	Uncover errors in software work products
Q20.	Which of the subsequent is not involved in External failure costs in Software Quality Assurance ?
Option A:	Help line support
Option B:	Repair
Option C:	Warranty work
Option D:	Complaint resolution
Q21.	Which of the succeeding is true about Software Accessibility where MTTF is Mean Time to Failure MTTR is Mean Time To Repair MTBF is Mean Time Between Failure 1.Availability = [MTTF/(MTTF + MTTR)] * 100% 2.Availability = [MTTF/(MTBF)] * 100% 3.Availability = [MTTF/(MTBF + MTTR)] 100% 4.Availability = [MTBF/(MTBF + MTTR)] * 100%
Option A:	3 and 4
Option B:	2 and 4
Option C:	1 and 2
Option D:	4 and 1
Q22.	Which of the Following is not Umbrella Activities of software process?
Option A:	Software Quality Assurance
Option B:	Software Configuration Management
Option C:	Risk Management
Option D:	Software Testing
Q23.	Exhaustive testing is
Option A:	Always Possible
Option B:	Practically Possible
Option C:	Impractical but Possible
Option D:	Impractical but Impossible
Q24.	Which of the following is not regression test case?
Option A:	A representative sample of tests that will exercise all software functions
Option B:	Additional tests that focus on software functions that are likely to be affected by

	the change
Option C:	Tests that focus on the software components that have been changed
Option D:	Low-level components are combined into clusters that perform a specific software sub-function.
Q25.	During validation
Option A:	Product is checked with respect to customer’s expectation
Option B:	Product is checked with respect to specification
Option C:	Product is checked with respect to project constraint
Option D:	Process is checked

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program:Computer Engineering

Curriculum Scheme: Rev2016

Examination: TE Semester VI

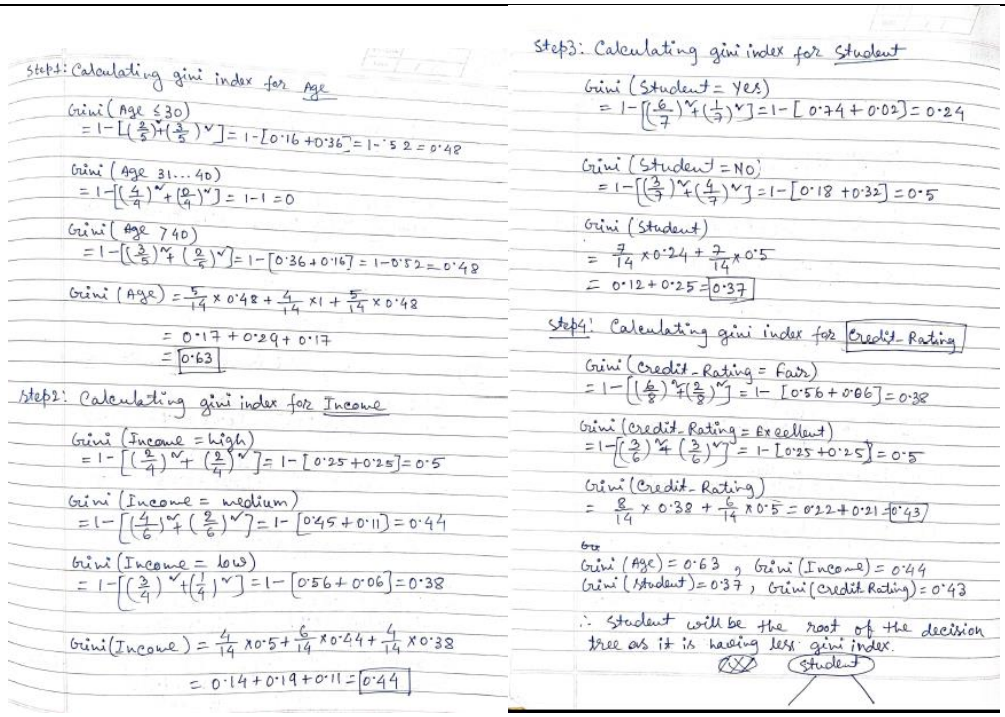
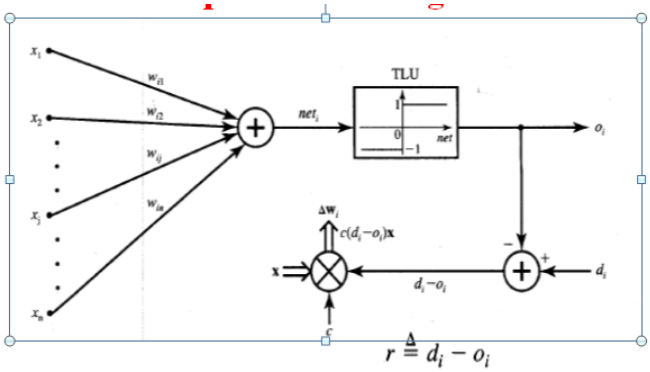
Course Code: CSDLO6021 and Course Name: Machine Learning

Time: 2 hour Max. Marks: 80

==========

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

<table>
<tr><td>Q2.
(20 Marks Each)</td><td></td></tr>
<tr><td>A</td><td>Solve any Two 5 marks each</td></tr>
<tr><td>i.</td><td>
<table>
<tr><th>Derivative Based Optimization</th><th>Derivation Free Optimization</th></tr>
<tr><td>Uses derivative information with objective function</td><td>Uses only objective function for evaluation</td></tr>
<tr><td>Extra information is required to find optimal solution</td><td>No extra information is required</td></tr>
<tr><td>Faster convergence</td><td>Slow convergence</td></tr>
<tr><td>Search direction is given by the derivative of the function</td><td>Search direction follows heuristic guidelines</td></tr>
<tr><td>Follows mathematical methodologies</td><td>Concepts are usually bio-inspired</td></tr>
<tr><td>Functions differentiable can only be considered here</td><td>Allows any objective function</td></tr>
<tr><td>Can converge to local optimum</td><td>Use random numbers to determine search directions leading to global optimum given enough c</td></tr>
</table>
Maximum points covered can be awarded 5 marks.
At least 5 basic points
</td></tr>
<tr><td>ii.</td><td>Logit function explanation – 2 marks
Example – 2 marks
Relevance of logit function in logistic regression – 1 mark</td></tr>
<tr><td>iii.</td><td>Truth table – 1 marks
Solution using MC Pitts models by selecting appropriate threshold 3 marks
MC model – 1 mark</td></tr>
<tr><td>B</td><td>Solve any One 10 marks each</td></tr>
<tr><td>i.</td><td>Marking scheme:
Calculating gini index for Age - 2M
Calculating gini index for Income- 2M
Calculating gini index for Student-2M
Calculating gini index for Credit_Rating - 2M
Determining the root attribute-2M</td></tr>
</table>

	
ii.	Pseudo code of perceptron learning algorithm 2 marks Example 3 marks  $r \triangleq d_i - o_i$ $o_i = \text{sgn}(\mathbf{w}_i^t \mathbf{x})$ $\Delta \mathbf{w}_i = c\,[d_i - \text{sgn}(\mathbf{w}_i^t \mathbf{x})]\,\mathbf{x}$ Appropriate inputs to a single neuron can be taken and one iteration of perceptron learning rule can be performed

Q3. (20 Marks Each)	
A	**Solve any Two** **5 marks each**
i.	Types Supervised, Unsupervised, Reinforcement learning with examples (1.5 +1.5+ 2marks accordingly)
ii.	EM algorithm 3 marks

	EM algorithm – start with two randomly placed Gaussians (μ_a, σ_a^2), (μ_b, σ_b^2) – for each point: $P(b \mid x_i)$ = does it look like it came from b? – adjust (μ_a, σ_a^2) and (μ_b, σ_b^2) to fit points assigned to them – iterate until convergence Example can be given from simple mixture models – 2 marks
iii.	ICA is a quite powerful technique and is able (in principle) to separate independent sources linearly mixed in several sensors.(1 marks) Blind source separation – 2 marks Examples of where it is being used (2 marks)
B	**Solve any One** **10 marks each**
i.	What is HMM---2 marks Where its used ---2 marks Example ----1 mark 3 major steps ----5 marks
ii.	Mean adjusted matrix – 2 marks Co variance matrix – 2 marks Eigen vector – 3 marks Eigen values – 3 marks **PCA Process – STEP 1** X_1 X_2 → Mean Adjusted Data → X'_1 X'_2 2.5 2.4 → 0.69 0.49 0.5 0.7 → −1.31 −1.21 2.2 2.9 → 0.39 0.99 1.9 2.2 → 0.09 0.29 3.1 3.0 ⇒ $\overline{X_1} = 1.81$, $\overline{X_2} = 1.91$ ⇒ 1.29 1.09 2.3 2.7 → 0.49 0.79 2.0 1.6 → 0.19 −0.31 1.0 1.1 → −0.81 −0.81 1.5 1.6 → −0.31 −0.31 1.2 0.9 → −0.71 −1.01 $\text{cov} = \begin{bmatrix} 0.616555556 & 0.615444444 \\ 0.615444444 & 0.716555556 \end{bmatrix}$ $eigenvalues = \begin{bmatrix} 0.490833989 \\ 1.28402771 \end{bmatrix}$ $eigenvectors = \begin{bmatrix} -0.735178656 & -0.677873399 \\ 0.677873399 & -0.735178656 \end{bmatrix}$

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: Computer Engineering

Curriculum Scheme: Rev2016

Examination: TE Semester VI

Course Code:CSDLO6021 and Course Name: Machine Learning

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	What is Machine Learning?
Option A:	The autonomous acquisition of knowledge through the use of computer programs
Option B:	The selective acquisition of knowledge through the use of computer programs
Option C:	The autonomous acquisition of knowledge through the use of manual programs
Option D:	The selective acquisition of knowledge through the use of manual programs
2.	Which data is used to optimize the parameter settings of a supervised learner model?
Option A:	Training
Option B:	Testing
Option C:	Validation
Option D:	Verification
3.	Machine Learning is branch of _____
Option A:	Natural Language processing
Option B:	Artificial Intelligence
Option C:	Java
Option D:	C
4.	For a neural network, which one of these structural assumptions is the one that most affects the trade-off between underfitting (i.e. a high bias model) and overfitting (i.e. a high variance model):
Option A:	The number of hidden nodes
Option B:	The learning rate
Option C:	The initial choice of weights
Option D:	The use of a constant-term unit input

5.	Training set of data in supervised learning includes
Option A:	Only Input data
Option B:	Only Output data
Option C:	Pair of Input and Output data
Option D:	Neither input data nor output data
6.	_____ are tree-like branches, responsible for receiving the information from other neurons it is connected to
Option A:	Soma
Option B:	Axon
Option C:	Dendrites
Option D:	Synapse
7.	Which one of the following is incorrect w.r.t. Derivative based optimization
Option A:	Uses derivative information with objective function
Option B:	Slow convergence
Option C:	Follows mathematical methodology
Option D:	Fast convergence
8.	In Classical Newton's method the descent direction is determined by
Option A:	First order derivative of the function
Option B:	Partial order derivative of the available objective function
Option C:	Gradient method
Option D:	Second order derivative of the available objective function
9.	Linear Regression is represented by following equation
Option A:	Y=a+bX where a is X-intercept and b is Slope of the line
Option B:	Y=a+bX where a is the slope of the line and b is X-Intercept
Option C:	Y=a+bX where a is the Y-Intercept and b is the slope of the line
Option D:	Y=a+bX where a is the slope of the line and b is the Y-Intercept
10.	Logistic Regression belongs to which type of machine learning algorithm
Option A:	Supervised Regression
Option B:	Supervised Classification
Option C:	Unsupervised Regression
Option D:	Unsupervised Classification
11.	Calculate the accuracy from given data TP = 30, TN = 930, FP = 30, FN = 10
Option A:	0.96
Option B:	1
Option C:	0.86
Option D:	0.99
12.	A node in decision tree represent
Option A:	Class of instance
Option B:	Data value description
Option C:	Test Specification
Option D:	Data process description
13.	In Bayes theorem, unconditional probability is called as

Option A:	Evidence
Option B:	Likelihood
Option C:	Prior
Option D:	Posterior
14.	Which of the following is true about Support vector machine?
Option A:	Maximum apriori classifier
Option B:	Maximum margin classifier
Option C:	Minimum apriori classifier
Option D:	Minimum margin classifier
15.	In a hard margin SVM, support vectors lie
Option A:	inside the margin
Option B:	on the margin
Option C:	outside the margin
Option D:	can be inside or outside the margin
16.	Assume the incidence of a disease D is about 10 cases per 100 people (i.e., P(D) = 0.05). Let Boolean random variable D mean a patient “has disease D” and let Boolean random variable TP stand for "tests positive." Tests for disease D are known to be very accurate in the sense that the probability of testing positive when you have the disease is 0.99, and the probability of testing negative when you do not have the disease is 0.97. What is P(TP), the prior probability of testing positive.
Option A:	0.0368
Option B:	0.473
Option C:	0.078
Option D:	0.126
17.	Which one of these is not a tree based learner?
Option A:	CART
Option B:	ID3
Option C:	Bayesian Classifier
Option D:	Random Forest
18.	In EM algorithm that finds maximum likelihood estimates for a model with latent variables. You are supposed to modify the algorithm so that it finds MAP estimates instead. Which step do you need to modify?
Option A:	Expectation
Option B:	Sorting
Option C:	No Modification necessary
Option D:	Maximization
19.	If eigenvalues are roughly equal then..
Option A:	PCA will perform outstandingly
Option B:	PCA will perform badly
Option C:	LDA will perform outstandingly
Option D:	LDA will perform badly
20.	Which of the following property is true for PCA Algorithm?
Option A:	Data used for PCA is having Less variance

Option B:	Maximum number of principal components are greater than number of features
Option C:	All principal components are orthogonal to each other
Option D:	PCA is a Supervised learning method

Q2. (20 Marks Each)	
A	**Solve any Two** **5 marks each**
i.	Differentiate between derivative-based and derivative free optimization techniques
ii.	Define logit function. Explain the importance of logit function in logistic regression with appropriate example
iii.	How is AND function solved using McCulloch Pitts model.
B	**Solve any One** **10 marks each**
i.	For the following data, to construct the decision tree calculate Gini indexes and determine which attribute is root attribute.

Sr. No	Age	Income	Student	Credit_Rating	Byus_Computer
1	<=30	high	No	Fair	No
2	<=30	high	No	Excellent	No
3	31...40	high	No	Fair	Yes
4	>40	medium	No	Fair	Yes
5	>40	low	Yes	Fair	Yes
6	>40	low	Yes	Excellent	No
7	31...40	low	Yes	Excellent	Yes
8	<=30	medium	No	Fair	No
9	<=30	low	Yes	Fair	Yes
10	>40	medium	Yes	Fair	Yes
11	<=30	medium	Yes	Excellent	Yes
12	31...40	medium	No	Excellent	Yes
13	31...40	high	Yes	Fair	Yes
14	>40	medium	No	Excellent	No

ii.	Explain the perceptron learning rule with example?

Q3. (20 Marks Each)	
A	**Solve any Two** **5 marks each**
i.	Explain different types of machine learning with examples.
ii.	Explain Expectation Maximization Algorithm with suitable example?
iii.	What is Independent component Analysis and where is it used?
B	**Solve any One** **10 marks each**
i.	What is Hidden Markov Model? Where is it being used? Give an example of

	HMM?Explain the 3 steps of HMM?
ii.	For the given dataset, compute the covariance matrix, eigenvalues and eigenvectors. X_1 X_2 2.5 2.4 0.5 0.7 2.2 2.9 1.9 2.2 3.1 3.0 2.3 2.7 2.0 1.6 1.0 1.1 1.5 1.6 1.2 0.9

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: TE Semester VI

Course Code: CSDLO6022 and Course Name: Adv. Database System

Time: 2 hour Max. Marks: 80

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

Q.2 Each Question 5 marks

A. Explain in detail Three Phase Commit Protocol

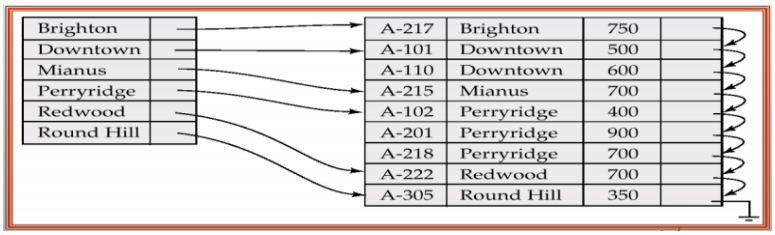
Answer:

- The main difference between 2PCs and 3PCs is that 3PCs split the commit phase into two parts to improve fault tolerance. This is done by adding a *prepare-to-commit phase*.
- 3PCs can be seen as an extension of the 2PC protocol. In the first phase, the coordinator will send a sub-transaction to all participants and the participants will send the coordinator a reply saying yes to the commit or no to the commit.
- If all participants respond yes, the coordinator will send participants a pre-commit message. If any of the participants responds no, the coordinator will send a message that says ABORT. The pre-commit phase ensures that the coordinator will only ask participants to proceed with a commit if there are no failures.
- In the second phase, which is the prepare-to-commit stage, the coordinator sends a prepare message to participants from the first phase. In this phase, the coordinator essentially asks the others if they are prepared to commit and, if they are not, the commit is aborted.

B. Explain Sparse Index Files and Dense Index files in detail with examples

Answer:

Dense index — Index record appears for every search-key value in the file



Sparse Index: contains index records for only some search-key values.

- Applicable when records are sequentially ordered on search-key.
- To locate a record with search-key value K we: ¾ Find index record with largest search-key value < K.
- Search file sequentially starting at the record to which the index record points Less space and less maintenance overhead for insertions and deletions.
- Generally slower than dense index for locating records.
- Good tradeoffs: sparse index with an index entry for every block in file, corresponding to least search-key value in the block.

C. Explain Correctness rules for fragmentation with example

Answer:

i. Completeness
ii. Reconstruction
iii. Disjointness

D. Explain Correctness rules for fragmentation with example

Answer:

i. SQL Injection,

ii. Data leaks,

iii. Broken Database

iv. Stolen Database Backup

v. Deployment Failures

E. Explain the functionality of JSON and BSON for encoding XML.

Answer:

BSON is a serialization format encoding format for JSON mainly used for storing and accessing the documents whereas JSON is a human-readable standard file format mainly used for transmission of data in the form of key-value attribute pairs. ... BSON in fact in some cases uses more space than JSON

F. Why its mandatory access control and role-based access control for multilevel security?

Answer:

mandatory access control (MAC) refers to a type of access control by which the operating system constrains.

Role based access control - Employees are only allowed to access the information necessary to effectively perform their job duties.

Q.3 Each Question 10 marks

A. Discuss in detail Static Hashing scheme with neat diagram. Explain demerits of static hashing.

Answer:

Various static hashing Operations:

i. Insert Operation

ii. Delete Operation

iii. Search Operation

iv. Update operation

The disadvantages of using the Static Hashing method in the DBMS are as follows:

- Static Hashing is not a good option for largely sized databases.
- Time taken for this function is higher than normal, as the hash function has to go through all the addresses of the storage memory in order to perform operations in the DBMS system.
- It doesn't work well with scalable databases.
- The ordering process is not efficient compared to other hashing techniques.

B. Elaborate how GIS applications are put under three different categories explain briefly with an example of each category.

Answer:

Need to explain about GIS

Categories of GIS

a. Cartographic application – irrigation, land evaluation, traffic pattern analysis
b. Digital terrain modelling based—soil survey, flood control, air pollution studies
c. Geographic-object based—car navigation system, Geographic market analysis.

C. Illustrate with an example on Document oriented database how it is differ from Traditional Databases.

Answer:

About Traditional database- Relational Database, Structured model eg. DBMS,RDBMS

About document oriented – its about object oriented approach, big data application eg. Mongodb

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: TE Semester VI

Course Code: CSDLO6022 and Course Name: Adv. Database System

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	What feature is a DDBMS advantage?
Option A:	Reduced operating cost
Option B:	Increased storage requirements
Option C:	Increased training cost
Option D:	Complexity of management and control
2.	Each copy of a fragment must be assigned to a particular site in the distributed system. This process is called
Option A:	Data Replication
Option B:	Data Fragmentation
Option C:	Sharding
Option D:	Data Distribution
3.	The techniques that are used to break up the database into logical units, called
Option A:	Block
Option B:	Buffer
Option C:	Fragments
Option D:	Group
4.	____ transparency ensures that the system will continue to operate in the event of a node failure.
Option A:	Transaction
Option B:	Failure
Option C:	Location
Option D:	Fragmentation
5.	The algorithms that are suitable for sorting data structures, such as tables and list, that can fit entirely in main memory
Option A:	external Sorting
Option B:	Internal Sorting
Option C:	Secondary sorting
Option D:	Parser Sorting
6.	In the sorting phase, the number of sorted subfiles can be merged in each step are called
Option A:	degree of sorting

Option B:	degree of runs
Option C:	degree of merging
Option D:	number of file blocks
7.	Semi -join is generally used for unnesting ----------sub queries.
Option A:	Not In
Option B:	All
Option C:	Not Exists
Option D:	Exists
8.	The process of choosing suitable execution strategy for processing a query is known as
Option A:	Database Processing
Option B:	Query Processing
Option C:	Query Optimization
Option D:	Query Parsing
9.	Which command removes user access rights or privileges to the database objects?
Option A:	Revoke
Option B:	Grant
Option C:	Alter
Option D:	Update
10.	Which action is not performed by DBA?
Option A:	Account creation
Option B:	Privilege granting
Option C:	Privilege revocation
Option D:	Infer
11.	Which is not a valid access control mechanism?
Option A:	Mandatory Access Control
Option B:	Discretionary Access Control
Option C:	Role Based Access Control
Option D:	Subjective Access Control
12.	A (geographic) field is a geographic phenomena for which, for every point in the study area
Option A:	A value cannot be determined
Option B:	A value is not relevant
Option C:	A value can be determined
Option D:	A value is missing
13.	Which of the following is related to GIS?
Option A:	Euclidean space
Option B:	Ramanujan space
Option C:	Pythagorean space
Option D:	Logarithmic space
14.	How many type of encoding supported in XML?
Option A:	Three

Option B:	Two
Option C:	One
Option D:	Five
15.	The process of converting unicode characters into their equivalent binary representation
Option A:	Decoding
Option B:	DTD
Option C:	DTO
Option D:	Encoding
16.	The Most Well-Known object oriented Databases
Option A:	Objectstore
Option B:	BaseX
Option C:	eXist
Option D:	SimpleDB
17.	Which is not a consistency level of Document Database?
Option A:	Strong
Option B:	Elastic
Option C:	Bounded-staleness
Option D:	Session
18.	The minimum and maximum number of keys in the internal node of B tree, with order 4 is, respectively are
Option A:	2,4
Option B:	1,4
Option C:	2,3
Option D:	1,3
19.	An index is clustered if
Option A:	It is on a set of fields that forms a candidate key.
Option B:	The data records of file are not organized in the same order as the data entries of the index.
Option C:	It is on set of fields on primary key.
Option D:	The data records of the file are organized in the same order as the data entries of the index.
20.	In Multilevel Indexing the index which leaves some space in each of its blocks for inserting new entries is called
Option A:	Dynamic Multilevel Index
Option B:	Dense Index
Option C:	Primary Index
Option D:	Clustering Index

Q2	Solve any Four out of Six 5 marks each
A	Explain in brief Three Phase Commit Protocol
B	Explain Sparse Index Files and Dense Index files in detail with examples
C	Explain Correctness rules for fragmentation with example
D	Enlist at least 5 issues of database security. How to overcome any one database security issue? Give your suggestion
E	Explain the functionality of JSON and BSON for encoding XML.
F	Why its mandatory access control and role-based access control for multilevel security?

Q3	Solve any Two Questions out of Three 10 marks each
A	Discuss in detail Static Hashing scheme with neat diagram. Explain demerits of static hashing.
B	Elaborate how GIS applications are put under three different categories explain briefly with an example of each category.
C	Illustrate with an example on Document oriented database how it is differ from Traditional Databases.

University of Mumbai

Examination 2020 under cluster __ (Lead College: _____)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: TE Semester VI

Course Code: CSDLO6023 and Course Name: ERP

Time: 2 hour Max. Marks: 80

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0401_R16_Comp_VI_CSDLO6023_AK2

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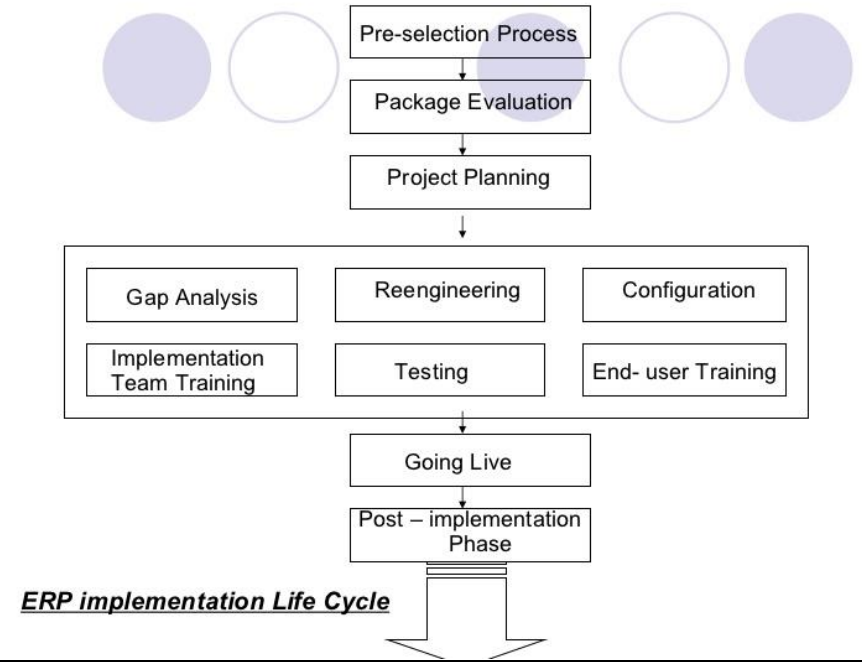
Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	B
Q3.	B
Q4	C
Q5	C
Q6	A
Q7	D
Q8.	B
Q9.	B
Q10.	A
Q11.	A
Q12.	A
Q13.	C
Q14.	D
Q15.	A
Q16.	B
Q17.	C
Q18.	A
Q19.	B
Q20.	B

Q2	**Solve any Four out of Six** **5 marks each**
A	List Inhouse ERP Implementation Advantage and disadvantages.
Answer	Advantage of ERP Implementation: • The organization has full ownership of the ERP developed and also its source code and the information picked up while creating it. • Fits precisely to the business prerequisites of the organization. • There is a connection between the improvement group and the client base which helps in correspondence and desire conveyance. • It gives the business organization the full power over the ERP framework and its usefulness. • Enables you to separate from your rivals and stand ahead in the competition. • Can furnish the business with a more prominent upper hand. Disadvantages of ERP Implementation: • It tends to be expensive to keep up and enhance the framework to consistently address business issues. • It requires more IT staff which eventually lead to high overhead cost. • High switching costs while getting changed to newer technology. • It is time-consuming to develop an in-house IT system comparing to ready-made software purchase.
B	Enumerate ERP related Technology
Answer	• Data Mining • Business Intelligence • Online Analytical Processing • Online Transaction Processing • Data Warehouse
C	Describe components of CRM
Answer	• SalesForce Automation • Human Resource Management • Lead Management • Customer Service • Marketing • Workflow Automation • Business Reporting
D	List various benefits of ERP system
Answer	• Enhanced Business Reporting: • Better customer service • Faster response times • Improved on-time delivery • Improved order accuracy • Improved Inventory Costs • Boosted Cash Flow • Better invoicing and better collections tools to bring cash in faster • Faster cash means more cash on-hand for the business

	• Cost Savings • Improved inventory planning • Better procurement management • Better customer service • Improved vendor relationship management • Better Data & Cloud Security • Modernized Business Process Standardization • Dedicated security resources • Avoid installing malicious software • Data distributed across multiple servers • Superior Supply Chain Management • Effective demand forecasting and lean inventory • Reduce production bottlenecks • Transparency through the business
E	List the use of GIS
Answer	• Telephone/Network services • Road Safety Analysis • Urban Growth • Transport • The Environment • Agriculture • Managing Disasters • Banking • Land Information • Surveying • Geology • Assets Management • Planning and Community Development • Dairy Industry • Tourism • Irrigation management • Earthquakes • Volcanoes • Forest Fires • Pest Control • Business • Location Identification • Coastal Management • Crime • Cables • Wildlife Management
F	Explain in brief what is EAI
Answer	Enterprise application integration is an integration framework composed of a collection of technologies and services which form a middleware or "middleware framework" to enable integration of systems and applications across an enterprise.

	Many types of business software such as supply chain management applications, ERP systems, CRM applications for managing customers, business intelligence applications, payroll, and human resources systems typically cannot communicate with one another in order to share data or business rules. For this reason, such applications are sometimes referred to as islands of automation or information silos. This lack of communication leads to inefficiencies, wherein identical data are stored in multiple locations, or straightforward processes are unable to be automated. Enterprise application integration is the process of linking such applications within a single organization together in order to simplify and automate business processes to the greatest extent possible, while at the same time avoiding having to make sweeping changes to the existing applications or data structures. Applications can be linked either at the back-end via APIs or (seldomly) the front-end (GUI)
Q3.	**Solve any Two out of Three** **10 marks each**
A	Explain different phases of BPR
Answer	Business Process Reengineering Phases: • Project kick off • Process identification and data gathering • Process consulting • Process Reengineering • Blueprint of new system • Change management • Transformation • Project management
B	Draw and explain ERP Implementation Lifecycle Model
Answer	
C	Explain different types of ERP Security issues
Answer	• Delayed Updates • The biggest threat to businesses undoubtedly comes from external sources, but that doesn't mean we can sit back and ignore potential in-

	house risks. Full access rights shouldn't come as default; instead, it's important to look at who has access to what data • Lack of understanding of the ERP system as a whole, or it could be a lack of understanding of what is expected by the organisation in terms of security. This is especially true for new hires who do not have an in-depth knowledge of internal processes. While any errors may be classed as 'innocent mistakes', it still leaves your business open to security risks. • Use of Unauthorised Systems • Automatic Trust • Password cracking is one of the simplest and most common forms of hacking, so it really doesn't make sense to protect our most important, sensitive, and confidential business data through the use of passwords alone which can be stolen or even guessed relatively easily by experts.

University of Mumbai

Examination 2020 under cluster __ (Lead College: _____)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination:TE Semester VI

Course Code: CSDLO6023 and Course Name: ERP

Time: 2 hour Max. Marks: 80

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0401_R16_Comp_VI_CSDLO6023_QP2

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1	Which one does not belong to the sales & distribution process?
Option A:	Sales order
Option B:	Material delivery
Option C:	Purchase requisition from production department
Option D:	Billing
2	OLAP is used to transform data warehouse data into _____
Option A:	reports
Option B:	strategic information
Option C:	existing data
Option D:	tables
3	The value chain model 's primary activities are?
Option A:	Inbound logistics, Operations, Outbound Logistics, Marketing and Sales, and Technology Development
Option B:	Inbound logistics, Operations, Outbound Logistics, Marketing and Sales, and Service
Option C:	Inbound logistics, Operations, Infrastructure, HR Management, and Service
Option D:	Inbound logistics, Procurement, Outbound Logistics, Marketing and Sales, and Service
4	Who are the prime users of SCM systems
Option A:	Sales, marketing, customer service
Option B:	Accounting, finance, logistics, and production
Option C:	Customers, resellers, partners, suppliers, and distributors
Option D:	Sales,marketing
5	A bill of materials list contains

Option A:	time needed to perform all phases of production
Option B:	production schedules for all products
Option C:	components, ingredients, and materials required to produce an item
Option D:	operations required to produce an item
6	_____ is the use of technologies and services across an enterprise to enable the integration of software applications and hardware systems.
Option A:	EAI
Option B:	ERP
Option C:	SCM
Option D:	CRM
7	The primary concept of _____ is that storing huge or large amount of data
Option A:	data mining
Option B:	OLAP
Option C:	supply chain management
Option D:	data warehousing
8	The common ERP system security problems are _____ & _____
Option A:	cost of consultant, work estimates
Option B:	Delayed updates & Full access rights
Option C:	selection process and implementation process
Option D:	License fees & vendor charges
9	Big Bang implementation strategy is
Option A:	Functional all modules install at once only
Option B:	ERP all modules install at once
Option C:	Technical all modules install at once only
Option D:	Application all modules install at once only
10	Baan company is famous for _____
Option A:	Manufacturing
Option B:	HR
Option C:	plant and maintenance
Option D:	finance

11	With headlines often commenting on breaches of Internet security, what is the term used for specialized software to prevent unauthorized access to company data from outsiders?
Option A:	Firewall
Option B:	Middleware
Option C:	Enterprise application integration - EAI
Option D:	Web analytics system
12	What is the prime security issue in cloud ERP
Option A:	Allowing more open access
Option B:	Lack of data integrity
Option C:	Compliance issues
Option D:	None of the mentioned
13	What are the major benefits of an ERP system in business
Option A:	Sales forecasts, sales strategies, and marketing campaigns
Option B:	Market demand, resource and capacity constraints, and real-time scheduling
Option C:	Forecasting, planning, purchasing, material management, warehousing, inventory, and distribution
Option D:	Sales Forecast, Market demand
14	Which one is not an ERP Technologies
Option A:	Data Warehousing
Option B:	Business Process Reengineering
Option C:	Data Mining
Option D:	Manufacturing Resource Planning
15	Hire to Retire is a business process of which module
Option A:	Human Resource Module
Option B:	Sales and Distribution Module
Option C:	Material Management Module
Option D:	Accounts Module
16	_____ is a system of enterprise resource planning software and tools that are hosted and managed offsite in the cloud by the vendor.
Option A:	Generalist ERP.
Option B:	Cloud-based ERP
Option C:	Small Business ERP

Option D:	open source ERP
17	Conceptually which statement is most accurate for an ERP
Option A:	ERP means more work and procedure
Option B:	ERP makes many employees redundant
Option C:	ERP integrate and automate organization processes
Option D:	ERP is sole responsibility of management
18	What should be the filter applied by an organization to limit the number of packages to be considered.
Option A:	pre-evaluation screening
Option B:	post implementation.
Option C:	project planning.
Option D:	gap analysis
19	Material Requirement Planning(MRP) module utilizes aplication softwares for scheduling _____
Option A:	sales management
Option B:	production processes
Option C:	marketing techniques
Option D:	human resource management
20	Which is not an open source ERP
Option A:	ERPNext
Option B:	Oracle ERP
Option C:	Odoo
Option D:	Dolibarr

Q2 (20 Marks)	**Solve any Four out of Six** **5 marks each**
A	List Inhouse ERP Implementation Advantage and disadvantages.
B	Enumerate ERP related Technology
C	Describe components of CRM
D	List various benefits of ERP system
E	List the use of GIS
F	Explain in brief what is EAI
Q3. (20 Marks)	**Solve any Two out of Three** **10 marks each**
A	Explain different phases of BPR
B	Draw and explain ERP Implementation Lifecycle Model
C	Explain different types of ERP Security issues

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE,New Panvel)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program:**Computer Engineering**

Curriculum Scheme: Rev2016

Examination: TE Semester:VI

Course Code: CSDLO6024 and Course Name: Adv. Computer Network

Time: 2 hour Max. Marks: 80

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

Q.2 A. Explain B-ISDN reference model

Solution- Diagram------2Marks

Explanation of all planes----------3Marks

Explanation with diagram-------5Marks

Q.2 B. Explain different traffic characteristics: Delay, jitter, Burstiness, Throughput, Lost Packet Percentage

Solution- One characteristic Explanation----1Marks

Explanation of all characteristics---5Marks

Q.2 C. Compare RIP and OSPF protocol.

Solution- Each correct point in comparison----1Marks

Any five correct point in comparison---5Marks

Q. 2 D. Explain VC merging with the help of diagram

Solution- Only Explanation----3Marks

Only Diagram--------2Mark

Explanation with diagram-----5Marks

Q.2 E. Explain BGP with characteristics.

Solution- Only Explanation of BGP----2Marks

Characteristics any three-----3Marks

Explanation with at least three characteristics—5Marks

Q 2 F Write short note on SNMP

Solution- One correct point-----1Marks

Any Five correct point----5Marks

Q.3 A Explain SONET frame Structure

Solution- Explanation for frame structure----5Marks

Frame structure diagram------2Marks

Frame structure diagram explanation---3Marks

Q. 3 B Explain IPv6 and its header format in detail.

Solution- IPv6 protocol explanation----3Marks

Header format diagram------2 Mark

Explanation of any five header fields----5 Marks

Q.3 C Explain IGMP and give its message format in detail

Solution- IGMP explanation---------3Marks

Message format diagram----------2Marks

Explanation of Message format diagram ----5 Marks

University of Mumbai

Examination 2020 under cluster 4 (Lead College:PCE,New Panvel)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: TE Semester:VI

Course Code: CSDLO6024 and Course Name: Advanced. Computer Network

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	SONET that is utilized as a transport network to convey loads from different WANs. Select the option which is not a basic transmission device in SONET
Option A:	STS multiplexers/demultiplexers
Option B:	Regenerators
Option C:	Add/drop multiplexers,terminals.
Option D:	Router
2.	Select the option which refer to fundamental characteristics of data communication i)delivery ii)accuracy iii)lateness iv)jitter
Option A:	Only i,ii,iv
Option B:	Only ii,iii,iv

Option C:	Only i and ii
Option D:	Only ii and iii
3.	The cell relay protocol Asynchronous Transfer Mode (ATM) is designed by the ATM with a certain goal. Select the challenges that are faced by the designers of ATM
Option A:	There is no need to interface system with existing systems
Option B:	To move as many of the functions to software as possible and eliminate as many hardware functions as possible
Option C:	The new framework should be connection-oriented to guarantee precise and predictable delivery.
Option D:	The design must be implemented with expensive so that cost would not be a barrier to adoption.
4.	ATM can be used for _____
Option A:	Local area network
Option B:	Wide area network
Option C:	Campus area network
Option D:	Networks covering any range
5.	AAL 3/4 assist which type of data
Option A:	Connection Oriented

Option B:	Connection less
Option C:	Connection Oriented and Connectionless
Option D:	Stream Oriented
6.	Which statement is true for ATM Cell Format
Option A:	ATM moves data in fixed-size units called cells.
Option B:	Every cell comprises of 54 octets
Option C:	ATM header is of UNI format
Option D:	ATM header is of NNI format
7.	The lacking size of the IPv4 header, which doesn't oblige the necessary number of additional parameters refers to _____
Option A:	The problem of security of communications
Option B:	Weak protocol extensibility
Option C:	The lack of address space
Option D:	Lack of quality of service support
8.	Among the given list of extended headers in IPV6 which header provides privacy mechanism
Option A:	Hop-by-hop options header

Option B:	Fragment header
Option C:	Authentication header
Option D:	Encapsulation security payload header
9.	Which of the following network access standards is used for connecting stations to a packet-switched network?
Option A:	X.3
Option B:	X.19
Option C:	X.75
Option D:	X.25
10.	IPv6 does not use _____ type of address.
Option A:	Broadcast
Option B:	Multicast
Option C:	Anycast
Option D:	Unicast
11.	Select the correct Statements i) Two different sets of routing protocol are required by every AS ii) BGP is an interior gateway routing protocol iii) Exchange of information is carried between AS in exterior gateway protocol

	iv) OSPF can be used as EGP
Option A:	i and iii only
Option B:	iv and iii only
Option C:	ii and iii only
Option D:	iv and i only
12.	Select the correct statements i) An autonomous system (AS) is a group of networks and routers under the authority of a solitary organization ii) Intra domain routing is routing inside an AS iii) Inter domain routing is routing between AS iv) one or more inter domain routing protocol handles routing among autonomous system
Option A:	ii and iii only
Option B:	ii,iii and iv only
Option C:	i,ii and iii only
Option D:	i,iii and iv only
13.	An IGMP query is sent from a _____ to a _____.
Option A:	host; host
Option B:	host; router
Option C:	router; host or router

Option D:	router;network
14.	Select the roles of RSVP from the following statements i) It is required to be present at sender, receiver and router ii) It carries the resource request all the way through the network iii) It is present both at sender and receiver iv) At each hop consults admission control and sets up reservation and also informs the requester incase of failure
Option A:	i,ii and iv only
Option B:	iii and iv only
Option C:	i,iiii and iv only
Option D:	i and ii only
15.	Which multimedia formats is not supported by RTP?
Option A:	TXT
Option B:	MPEG-4
Option C:	MPEG
Option D:	MJPEG
16.	What are reasons for creating OSPF in a hierarchical design? i) To decrease routing overhead ii) To speed up convergence iii) To confine network instability to single ares of the network iv) To make easier the configuring of OSPF

Option A:	i,ii,iii only
Option B:	i,ii,iv only
Option C:	i and ii only
Option D:	ii,iii and iv only
17.	What does not belong to switching delay
Option A:	Circuit switching delay
Option B:	Data switching delay
Option C:	Message switching delay
Option D:	Packet switching delay
18.	How is the total cost of queuing system is calculated typically
Option A:	Waiting cost
Option B:	Sum of waiting and service cost
Option C:	Service cost
Option D:	Difference of the waiting cost and service cost
19.	Design parameter for Peak i) Delay or Latency ii) Availability

	iii) Reliability iv) Throughput
Option A:	i,ii and iv only
Option B:	i,iii and iv only
Option C:	iii and iv only
Option D:	i,ii and iii only
20.	We can compare the task of network management to the task of writing a program. Both tasks need variable declarations. In network management this is handled by _____.
Option A:	SNMP
Option B:	MIP
Option C:	SMI
Option D:	TCP

Q2 **(20 Marks)**	**Solve any Four out of Si** **5 marks each**
A	Explain B-ISDN reference model.
B	Explain different traffic characteristics: Delay, jitter, Burstiness, Throughput, Lost Packet Percentage

C	Compare RIP and OSPF protocol
D	Explain VC merging with the help of diagram
E	Explain BGP with characteristics.
F	Write short note on SNMP

Q3. **(20 Marks)**	**Solve any Two Questions out of Three** **10 marks each**
A	Explain SONET frame Structure
B	Explain IPv6 and its header format in detail
C	Explain IGMP and give its message format in detail

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester: VI

Course Code: CSC602 and Course Name: System Programming & Compiler Construction

Time: 1 hour Max. Marks: 50

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

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester:VI

Course Code: CSC602 and Course Name: System Programming & Compiler Construction

Time: 1 hour Max. Marks: 50

==========

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

Q1.	Static memory allocation is typically performed during _____.
Option A:	Compilation
Option B:	Execution
Option C:	Loading
Option D:	Linking
Q2.	During which pass the pseudo code EQU is to be evaluated, in a two pass assembler during?
Option A:	Pass1
Option B:	Pass2
Option C:	Both Pass1 and Pass2
Option D:	Not evaluated by any pass
Q3.	Which addressing scheme is used for all symbols and literals used in RX format Instruction?
Option A:	Direct addressing
Option B:	Immediate Addressing
Option C:	Register Relative Addressing
Option D:	Base index addressing
Q4.	A _____specifies an actual operation to be performed by the computer when the object program is executed.
Option A:	Machine Instruction
Option B:	Macro Instruction
Option C:	Assembly Instruction
Option D:	High Level Instruction
Q5.	Which of the following is not a function of pass1 of an assembler?
Option A:	keep track of LC
Option B:	remember values of symbols until pass 2
Option C:	remember literals
Option D:	generate data
Q6.	What is used to organize the Forward reference table (FRT)?
Option A:	Stack
Option B:	Queue
Option C:	Linked List
Option D:	Doubly linked List

Q7.	Consider the Program: EXAM START 0 USING *, 15 SR 1, 1 L 1, ONLINE A 1, OFFLINE ONLINE DS4H OFFLINE DC F'5' END Identify the symbols:
Option A:	EXAM, USING, ONLINE, OFFLINE
Option B:	EXAM, USING, START, ONLINE, OFFLINE
Option C:	EXAM, ONLINE, OFFLINE
Option D:	USING, START, ONLINE, OFFLINE
Q8.	What is the data structure used to store macro definition during macro processor design?
Option A:	ST
Option B:	LT
Option C:	MDT
Option D:	MNT
Q9.	Which pseudo-op is used to represent the end of a macro?
Option A:	END
Option B:	ENDS
Option C:	ENDM
Option D:	ENDD
Q10.	Which of the following is used to reduce the length of the program if a number of instructions are repeating through the main program?
Option A:	Procedure
Option B:	Subroutine
Option C:	Macro
Option D:	Compiler
Q11.	What is the macro within a macro called?
Option A:	Macro-within-macro
Option B:	Nested macro
Option C:	Loop macro
Option D:	Macro in macro
Q12.	Which system program combines the separately compiled modules of a program into a form suitable for execution?
Option A:	Assembler
Option B:	Linking loader
Option C:	Cross compiler
Option D:	Load and go

Q13.	Which of the following represents the primary jobs of loader?
Option A:	Allocation, Relocation, Loading, Linking
Option B:	Allocation, Loading
Option C:	Relocation, Linking
Option D:	Loading , Linking
Q14.	Which of the following about the loader is incorrect?
Option A:	Loader brings object program into memory for execution
Option B:	Linkage editors perform linking after loading
Option C:	Dynamic linking schemes delay linking until execution time
Option D:	Absolute loader modifies the object program so that it can be loaded at any address location
Q15.	Which of the following card maintains the information about the locations whose contents are dependent on the address at which program is placed?
Option A:	END
Option B:	TXT
Option C:	ESD
Option D:	RLD
Q16.	How many sections are present in LEX program?
Option A:	3
Option B:	2
Option C:	1
Option D:	4
Q17.	What will be the **FOLLOW** set of non-terminal **'D'** for given grammar? S -> a | Db | C C -> c | CD D->d
Option A:	{c, d}
Option B:	{b}
Option C:	{$, b, d}
Option D:	{c}
Q18.	Which of the following notations is used by Syntax Directed Translation for associating attributes with grammar symbols?
Option A:	Syntax Directed Definition
Option B:	Translation Scheme
Option C:	Syntax Directed Definition and Translation Scheme Both
Option D:	Intermediate Code
Q19.	In case of Translation Scheme, what is associated with grammar productions?
Option A:	Tokens
Option B:	Semantic Actions
Option C:	Attributes
Option D:	Rules

Q20.	What will be the transformed code after applying suitable code optimization technique on the given code? **int z=(4*2) + x**
Option A:	int y= 4*2 int z= y+ x
Option B:	int z=(4*2) + x
Option C:	int z= 8 + x
Option D:	int y= 8 int z= y+ x
Q21.	Which of the following is bottom up parsing technique?
Option A:	Predictive Parser
Option B:	SLR Parser
Option C:	LL Parser
Option D:	Recursive descent parser
Q22.	Which code optimization technique is applied locally to improve performance of target code?
Option A:	Peephole optimization
Option B:	Loop optimization
Option C:	Basic block optimization
Option D:	Function preserving transformation
Q23.	Which are the fields required for triple implementation of 3-address code?
Option A:	op, arg1, arg2, result
Option B:	op, arg1, arg2
Option C:	arg1, arg2
Option D:	op, arg1
Q24.	Which of the following statements are correct for intermediate code? 1. Intermediate codes are machine independent codes and that are close to machine instructions. 2. Intermediate codes are machine dependent codes. 3. Syntax Tree can be used as intermediate code.
Option A:	1 only
Option B:	1 and 2
Option C:	1 and 3
Option D:	3 only
Q25.	What is the first statement of the basic block called?
Option A:	Block Statement
Option B:	Flow Statement
Option C:	Jump Statement
Option D:	Leader statement

University of Mumbai
Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: **CSC603** and Course Name: **Data Warehousing and Mining**

Time: 1 hour Max. Marks: 50

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

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

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: **CSC603** and Course Name: **Data Warehousing and Mining**

Time: 1 hour Max. Marks: 50

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Q1.	When Datawarehouse is used or created in organization?
Option A:	A data warehouse is necessary to all those organizations that are using relational OLTP
Option B:	A data warehouse is useful to all organizations that currently use OLTP
Option C:	A data warehouse is valuable only if the organization has an interest in analyzing historical data
Option D:	An organization has an extra funding to invest.
Q2.	The numeric measurements or values that represent a specific business aspect or activity is
Option A:	Facts
Option B:	Dimensions
Option C:	Tables
Option D:	Schemas
Q3.	Warehouse manager is responsible for
Option A:	Analysis of data to ensure consistency
Option B:	Backing up and archiving of data
Option C:	performs all the operation of data in Datawarehouse
Option D:	All of the above

Q4.	In star schema, there is one fact table as F1 is connected with four-dimension tables D1, D2, D3, D4 then fact table will have how many foreign keys?
Option A:	2
Option B:	4
Option C:	3
Option D:	5
Q5.	Which of the following is not a method to estimate a classifier's accuracy
Option A:	Holdout method
Option B:	Random Sampling
Option C:	Information Gain
Option D:	Bootstrap
Q6.	An association rule is valid if it satisfies:
Option A:	Support criteria
Option B:	Confidence criteria
Option C:	Both support and confidence criteria
Option D:	Information Gain criteria
Q7.	The operation of moving from finer granular data to coarser granular data is called _____
Option A:	Reduction
Option B:	Increment
Option C:	Roll up
Option D:	Drill down
Q8.	Closed item sets are referred as

Option A:	An item set for which at least one proper super-item set has same support
Option B:	An item set whose no proper super-item set has same support
Option C:	An item set for which at least super-item set has same confidence
Option D:	An item set whose no proper super-item set has same confidence
Q9.	Which of the following problems cannot be solved using Decision Tree Learning
Option A:	Instances are not represented by a fixed set of attributes
Option B:	Some training examples have unknown values
Option C:	Real value attributes
Option D:	Attribute has small number of disjoint possible values
Q10.	What is the source of the OLAP cube's metadata?
Option A:	Star schema
Option B:	Snow flake schema
Option C:	Database
Option D:	Star and snow flake schema both
Q11.	Which of the following is not true about FP growth algorithms?
Option A:	It mines frequent item sets without candidate generation.
Option B:	There are chances that FP trees may not fit in the memory.
Option C:	FP trees are very expensive to build
Option D:	It expands the original database to build FP trees.
Q12.	The generalization of cross-tab which is represented visually is _____ which is also called as data cube.
Option A:	Two-dimensional cube

Option B:	Multidimensional cube
Option C:	N-dimensional cube
Option D:	Cuboid
Q13.	The problem of identifying dangerous zones based on earthquake epicenters can be solved using
Option A:	Clustering
Option B:	Classification
Option C:	Frequent Pattern Mining
Option D:	Regression
Q14.	Which of the following statement is FALSE about OLAP?
Option A:	OLAP involves long running slow transactions that read lot of data
Option B:	OLAP involves frequent insert, update and delete operations
Option C:	OLAP requires data to be in De-Normalized form for optimal processing
Option D:	OLAP used for analysis of data to get knowledge.
Q15.	Use K means algorithm to create 3 clusters for given set of values {2,3,6,8,9,12,15,18,22}
Option A:	(2,3,6) (8,9,12,15) (18,22)
Option B:	(6,8,9) (2,3) (12,15,18,22)
Option C:	(15,18,22) (2,3) (6,8,9,12)
Option D:	(2,3,6) (8,9) (12,15,18,22)
Q16.	Calculate median of the following data set X={1,6,5,3,2,8}
Option A:	4
Option B:	5
Option C:	6

Option D:	4.5
Q17.	For predicting effect of weather and economy which kind of mining can be performed from the following
Option A:	Text
Option B:	Web
Option C:	Spatial
Option D:	Multimedia
Q18.	One approach to indexing spatial data represented as MBR is called _____
Option A:	K-tree
Option B:	R-tree
Option C:	k-D Tree
Option D:	Quad-Tree
Q19.	In KDD, the next step after data preprocessing is
Option A:	Data mining
Option B:	Data transformation
Option C:	Data evaluation
Option D:	Data selection
Q20.	Binning is used for _____
Option A:	Data Normalization
Option B:	Data Transformation
Option C:	Data cleaning
Option D:	Data Reduction

Q21.	For questions given below consider the data Transactions: T1 {F, A, D, B} T2 {D, A, C, E, B} T3 {C, A, B, E} T4 {B, A, D} With minimum support is 60% and the minimum confidence is 80%. Which of the following is not valid association rule?
Option A:	A -> B
Option B:	B -> A
Option C:	D -> A
Option D:	A -> D
Q22.	Height is which type of attribute
Option A:	Nominal
Option B:	Binary
Option C:	Ordinal
Option D:	Continuous
Q23.	Which type of mining can help in getting an insight into personalization, system improvement, site modification, business intelligence and usage characterization.
Option A:	Web content Mining
Option B:	Web Usage mining
Option C:	Web data mining
Option D:	Web Structure Mining
Q24.	When two variables are not related at all then their correlation coefficient is
Option A:	0
Option B:	1
Option C:	-1
Option D:	2

Q25.	In mining spatial associations _____ preserves all the potential answers means where it should allow a false-positive test which might include some data sets that do not belong to the answer sets but it should not allow a false negative test which might exclude some potential answers
Option A:	superset coverage property
Option B:	spatial co-locations
Option C:	spatial classification
Option D:	A spatial association rule

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

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

Time: 1 hour Max. Marks: 50

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

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

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

Time: 1 hour Max. Marks: 50

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

Q1.	Which attack causes loss of message integrity
Option A:	Interruption
Option B:	Modification
Option C:	Fabrication
Option D:	Interception
Q2.	Which is not an active attack
Option A:	Interruption
Option B:	Modification
Option C:	Traffic Analysis
Option D:	Denial of Service
Q3.	Which property is not a security service
Option A:	Data Confidentiality
Option B:	Data Integrity
Option C:	Authentication
Option D:	Routing Control
Q4.	Give example for block cipher
Option A:	hill cipher
Option B:	mono-alphabetic
Option C:	one-time pad
Option D:	Caesar
Q5.	Which is not a type of symmetric-key cryptography technique?
Option A:	Caesar cipher
Option B:	Data Encryption Standard (DES)
Option C:	Diffie Hellman cipher
Option D:	Playfair cipher
Q6.	Characteristics of signature based IDS
Option A:	Most are based on simple pattern matching algorithms
Option B:	It is programmed to interpret a certain series of packets
Option C:	It models the normal usage of network as a noise characterization
Option D:	Anything distinct from the noise is assumed to be intrusion activity
Q7.	Always which value is largest, In RSA public key cryptosystem.
Option A:	e

Option B:	n
Option C:	p
Option D:	q
Q8.	Which is the least secure method of authentication?
Option A:	Key card
Option B:	Fingerprint
Option C:	retina pattern
Option D:	Password
Q9.	Where does the malicious script execute in cross-site scripting
Option A:	On the web server
Option B:	In the user's browser
Option C:	On the attacker's system
Option D:	In the web app model code
Q10.	Which option is most vulnerable to injection attacks?
Option A:	Session IDs
Option B:	Network communications
Option C:	Registry keys
Option D:	SQL queries based on user input
Q11.	Two keys, e and d have a special relationship to _____ in Asymmetric-key cryptography.
Option A:	Others
Option B:	Data
Option C:	Keys
Option D:	Each others
Q12.	Which method ensures the merchant and their payment information?
Option A:	Digital certificate
Option B:	Merchant
Option C:	Dual signature
Option D:	Certificate authority
Q13.	Any 2 random large values 'p' and 'q'. What is the property of 'p' and 'q' in RSA algorithm?
Option A:	p and q should be divisible by Φ(n)
Option B:	p and q should be co-prime
Option C:	p and q should be prime
Option D:	p/q should give no remainder
Q14.	Which Extension does this refer to "Conveys any desired X.500 directory attribute values for the subject of this certificate."
Option A:	Subject alternative name
Option B:	Issuer Alternative name
Option C:	Subject directory attributes
Option D:	Subject only

Q15.	Which cryptographic algorithm recommends by X.509 certificate.
Option A:	RSA
Option B:	DES
Option C:	AES
Option D:	Rabin
Q16.	Characteristics of Authorization is
Option A:	RADIUS and RSA
Option B:	3 way handshaking with syn and fin
Option C:	Multilayered protection for securing resources
Option D:	Deals with privileges and rights
Q17.	Unsolicited Bulk E-mails (UBI) are called as
Option A:	SMS
Option B:	MMS
Option C:	Malicious emails
Option D:	Spam emails
Q18.	Best practice for password policy
Option A:	Deciding maximum age of password
Option B:	Restriction on password reuse and history
Option C:	Password encryption
Option D:	Having change password every 2 years
Q19.	If two parties are not _____, in man-in-the-middle attack can endanger the security of the Diffie-Hellman method.
Option A:	Authenticated
Option B:	joined
Option C:	Submit
Option D:	Separate
Q20.	How many bits of hash code generated by MD5 algorithm.
Option A:	128
Option B:	150
Option C:	160
Option D:	112
Q21.	Which option is not present in network layer DoS flooding?
Option A:	UDP flooding
Option B:	HTTP Flooding
Option C:	SYN flooding
Option D:	NTP Amplification
Q22.	Message authentication is provided using hash algorithm. What is the value for hash function
Option A:	Message Field
Option B:	Message Digest

Option C:	Message Score
Option D:	Message Leap
Q23.	In DES algorithm what is the key length
Option A:	128 Bits
Option B:	32 Bits
Option C:	64 Bits
Option D:	16 Bits
Q24.	Which stored procedure is used to test the SQL injection attack?
Option A:	xp_write
Option B:	xp_regwrite
Option C:	xp_reg
Option D:	regwrite
Q25.	Among following options which port is not used by Trojans?
Option A:	UDP
Option B:	TCP
Option C:	SMTP
Option D:	MP

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: First/Second/Third/Final Year Semester VI

Course Code: _____and Course Name: ____

Time: 1 hour Max. Marks: 50

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

University of Mumbai
Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)
Program: **Computer Engineering**
Curriculum Scheme: Rev2016
Examination: First/Second/Third/Final Year Semester VI
Course Code: _____and Course Name: ____
Time: 1 hour Max. Marks: 50
==========
For the students:- All the Questions are compulsory and carry equal marks .

Q1.	Arrange the steps in (proper sequence) required in developing any Machine Learning Applications 1) prepare the data 2) collect the data 3) train the algorithm 4) analyze the input data 5) test the algorithm 6) use it
Option A:	1, 3, 5, 2, 6, 4
Option B:	2, 1, 4, 3, 5, 6
Option C:	3, 1, 2, 5, 6, 4
Option D:	4, 5, 6, 1, 2, 3
Q2.	A computer program is said to learn from experience 'E' with respect to some task 'T' and some performance measure 'P' if its performance on 'T', as measured by 'P', improves with experience 'E'. Suppose we feed a learning algorithm a lot of historical weather data, and have it learn to predict weather. In this setting, what is 'T'?
Option A:	The probability of it correctly predicting a future date's weather.
Option B:	The weather prediction task.
Option C:	The process of the algorithm examining a large amount of historical weather data.
Option D:	The probability of it not correctly predicting a future date's weather.
Q3.	Choose the options that are correct regarding machine learning (ML) and artificial intelligence (AI), (A) ML is an alternate way of programming intelligent machines. (B) ML and AI have very different goals. (C) ML is a set of techniques that turns a dataset into software. (D) AI is a software that can emulate the human mind
Option A:	A, B, C
Option B:	B, C, D
Option C:	A, C, D
Option D:	D, B, A
Q4.	The fundamental unit of artificial neural network is
Option A:	brain
Option B:	axon
Option C:	nucleus
Option D:	neuron

Q5.	Signal transmission at synapse is
Option A:	physical process
Option B:	chemical process
Option C:	electrical process
Option D:	physical & chemical both
Q6.	Epochs represent the total number of
Option A:	input layer nodes
Option B:	network nodes
Option C:	passes of the training data through the network.
Option D:	passes of the test data through the network
Q7.	Each connection link in ANN is associated with _____ which has information about the input signal.
Option A:	Weights
Option B:	Bias
Option C:	Activation Function
Option D:	Neurons
Q8.	a) Downhill simplex b) Steepest Descent c) Newton's methods method is an example of which type of optimization i) Derivative based optimization ii) Random search based optimization iii) Genetic algorithm iv) Derivative free based optimization
Option A:	a(i), b(ii), c(iii)
Option B:	a(iv), b(i), c(i)
Option C:	a(i), b(ii), c(iv)
Option D:	a(i), b(i), c(ii)
Q9.	The limitation of derivative free algorithm is
Option A:	Faster convergence
Option B:	Slower convergence
Option C:	No convergence
Option D:	Optimal convergence
Q10.	Optimization in constraint conditions is a process of
Option A:	training the model
Option B:	finding principal components from the dataset
Option C:	obtaining the best results under any given circumstances
Option D:	splitting dataset into training and testing set
Q11.	_____ method is used to find the best fit line for data in Linear Regression?
Option A:	Maximum Likelihood
Option B:	Logarithmic Loss
Option C:	Least square error

Option D:	Log-likelihood error
Q12.	The odds of an event is the ratio of
Option A:	the expected number of times that an event will not occur to the expected number of times it will occur.
Option B:	the expected number of times that an event will occur to the expected number of times it will not occur.
Option C:	the expected number of times that an event will occur after some delay to the expected number of times it will not occur.
Option D:	the expected number of times that an event will not occur to the expected number of times it may occur.
Q13.	For which machine learning problems does the decision trees algorithms used for
Option A:	Clustering
Option B:	Dimensionality reduction
Option C:	Classification
Option D:	Regression
Q14.	The SVM's are less effective when
Option A:	The data is linearly separable
Option B:	The data is clean
Option C:	and ready to use
Option D:	The data is noisy and contains overlapping points
Q15.	Which of the following is not the central issues that need to be addressed in Hidden Markov Model (HMM)
Option A:	predicting problem
Option B:	evaluation problem.
Option C:	decoding problem.
Option D:	learning problem.
Q16.	Which of the following is not correct regarding EM Algorithm?
Option A:	The alignment provides an estimate of the base or amino acid composition of each column in the site
Option B:	The column-by-column composition of the site already available is used to estimate the probability of finding the site at any position in each of the sequences
Option C:	The row-by-column composition of the site already available is used to estimate the probability
Option D:	The column-by-row composition of the site already available is used to estimate the probability.
Q17.	The SVM's are less effective when
Option A:	The data is linearly separable
Option B:	The data is clean
Option C:	and ready to use
Option D:	The data is noisy and contains overlapping points
Q18.	Suppose you are dealing with 4-Class classification problem and you wants to train SVM model on the data for that your using one for all method, how many

	times you train your SVM model
Option A:	4
Option B:	2
Option C:	3
Option D:	1
Q19.	Which of the following is a clustering algorithm in machine learning? **a)** Expectation Maximization **b)** CART **c)** Gaussian Naïve Bayes **d)** Apriori
Option A:	B
Option B:	A
Option C:	D
Option D:	C
Q20.	Where the Hidden Markov Model does is used?
Option A:	Both Understanding of real world
Option B:	Speech recognition
Option C:	Speech recognition & Understanding world of real world
Option D:	
Q21.	Select the correct combination in relation to K-nearest neighbor algorithm i) Simplex ii) Lazy learning iii) Feature reduction iv) Feature similarity
Option A:	i, ii, iv
Option B:	i, ii, iii
Option C:	i, iii, iv
Option D:	ii, iii, iv
Q22.	Supervised learning and unsupervised clustering both require at least one
Option A:	hidden attribute.
Option B:	output attribute.
Option C:	input attribute.
Option D:	categorical attribute.
Q23.	Every observation (i.e. a vector with dimensionality m) in the dataset can be represented as:
Option A:	linear combination of some unit vectors
Option B:	linear combination of some basis vectors
Option C:	a set of orthonormal vectors
Option D:	unit vectors
Q24.	When performing regression or classification, which of the following is the correct way to preprocess the data?
Option A:	Normalize the data → PCA → training

Option B:	PCA → normalize PCA output → training
Option C:	Normalize the data → PCA → normalize PCA output → training
Option D:	PCA→ Normalize the data →training → normalize the PCA output
Q25.	Principal Component Analysis is technique for_____
Option A:	feature extraction
Option B:	dimensionality reduction
Option C:	data argumentation
Option D:	variance normalization

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: CSDLO6022 and Course Name: Adv. Database System

Time: 1 hour Max. Marks: 50

==========

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

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: CSDLO6022 and Course Name: Adv. Database System

Time: 1 hour Max. Marks: 50

==========

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

Q1.	Which of the following is correct?
Option A:	The height of a B+ tree is independent of the number of records.
Option B:	Range queries are faster on B+ trees.
Option C:	B-trees are for primary indexes and B+ trees are for secondary indexes.
Option D:	B-trees are for storing data on disk and B+ trees are for main memory.
Q2.	The idea behind ---------- hashing is to allow a hash file to expand and shrink its number of buckets dynamically without needing a directory.
Option A:	Linear Hashing
Option B:	Dynamic Hashing
Option C:	Extendible Hashing
Option D:	Relative Hashing
Q3.	When the hash field value of a record that is being inserted hashes to an address that already contains a different record. It is called as
Option A:	Indexing
Option B:	Hashing
Option C:	Collision
Option D:	Chaining
Q4.	File is a sequence of
Option A:	Columns
Option B:	Records
Option C:	Values
Option D:	Fields
Q5.	The algorithms that are suitable for large files of records stored on disk that do not fit entirely in main memory
Option A:	Internal Sorting
Option B:	Secondary sorting
Option C:	Parser Sorting
Option D:	External Sorting
Q6.	The ----------checks the query syntax to determine whether it is formulated according to syntax rules of the query language.
Option A:	Scanner
Option B:	Parser

Option C:	Query Optimizer
Option D:	Code Generator
Q7.	The processor that has task of running the query code, whether in compiled or interpreted mode, to produce query result.
Option A:	Runtime Database Processor
Option B:	Query Graphic Processor
Option C:	Parser Runtime Processor
Option D:	Query Optimizer Processor
Q8.	The external Sorting algorithm uses a Sort-merge strategy, which starts by sorting small sub files called
Option A:	Buffer
Option B:	Block
Option C:	Run
Option D:	Index
Q9.	The DBMS processes query in three phases. The first Phase is
Option A:	Parsing
Option B:	Analysing
Option C:	Coding
Option D:	Execution
Q10.	What is the disadvantage of replication?
Option A:	Reduced Network traffic
Option B:	If database fails at one site, copy can be located on other site
Option C:	Each site must have the same storage capacity
Option D:	Each transaction may proceed without coordination across network
Q11.	The real use of the Two-phase commit protocol is _____
Option A:	Deadlock will not occur
Option B:	Concurrency control can be avoided
Option C:	Atomicity, i.e, all-or-nothing commits at all sites
Option D:	Both Availability and Robustness
Q12.	The probability that the system under consideration does not experience any failure in a given time period.
Option A:	Availability
Option B:	Reliability
Option C:	Scalability
Option D:	Check pointing
Q13.	The Probability that the system can continue its normal execution according to the specification at a given point in time in spite of failures.
Option A:	Availability
Option B:	Scalability
Option C:	Reliability
Option D:	Check pointing

Q14.	What is Redo Operation?
Option A:	Restart transaction from scratch.
Option B:	Write the new value from the buffer to log & database.
Option C:	Write the old value from the buffer to log & database.
Option D:	Write all buffered values to disk.
Q15.	What is an undo operation?
Option A:	Restart transaction.
Option B:	Undone all changes done by transaction.
Option C:	Write the old value from the buffer to log & database.
Option D:	Make all changes Persistent.
Q16.	Which is not the ACID property of transaction?
Option A:	Atomicity
Option B:	Consistency
Option C:	Isolation
Option D:	Deadlock-free
Q17.	In Distributed Database if transaction can read, but cannot update that data item. It is called as
Option A:	Read Lock
Option B:	Write Lock
Option C:	Upgradation Lock
Option D:	Downgradation Lock
Q18.	In Distributed Database if transaction can read as well as update that data item. It is called as
Option A:	Upgradation Lock
Option B:	Read Lock
Option C:	Write Lock
Option D:	Upgradation Lock
Q19.	In XML, the number 8 or 16 refers to……..
Option A:	the number of bits
Option B:	the number of kilobits
Option C:	the number of byte
Option D:	the number of megabits
Q20.	JSON strings have to be in
Option A:	Double quote
Option B:	single quote
Option C:	No quote
Option D:	single quote or double quote
Q21.	BSON is a binary representation of _____ documents.
Option A:	XML
Option B:	HTML

Option C:	JSON
Option D:	Jscript
Q22.	Which database is able to handle full text data, image data, audio and video?
Option A:	Multimedia
Option B:	Object
Option C:	Document
Option D:	Temporal
Q23.	The characteristic of Multimedia system
Option A:	Low Storage
Option B:	High data rates
Option C:	both High storage and high data rates
Option D:	High storage
Q24.	With _____, access decisions are based on the roles that individual users have as part of an organization.
Option A:	Mandatory Access Control
Option B:	Role based access control
Option C:	Discretionary Access Control
Option D:	Subjective Access Control
Q25.	Which Security classes is having highest level in Mandatory Access Control?
Option A:	Unclassified
Option B:	Secret
Option C:	Top Secret
Option D:	Confidential

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: CSDLO6023 and Course Name: Enterprise Resource Planning

Time: 1 hour Max. Marks: 50

==========

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

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester: VI

Course Code: CSDLO6023 and Course Name: Enterprise Resource Planning

Time: 1 hour Max. Marks: 50

==========

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

Q1.	The activities of _____ include identifying inventory requirements, setting targets, providing replenishment techniques and options, monitoring item usages and reporting inventory status
Option A:	Inventory Management & Control
Option B:	Material Requirement Planning
Option C:	Manufacturing Requirement Planning
Option D:	Enterprise Resource Planning
Q2.	The three pillars of ERP implementation are
Option A:	Policies, people, money
Option B:	People, process, technology
Option C:	People, policies, process
Option D:	People, money, technology
Q3.	_____ often integrates business activities across functional departments, from product planning, parts purchasing, inventory control, product distribution to order fulfillment and tracking,
Option A:	MRP II
Option B:	MRP
Option C:	ERP
Option D:	OLAP
Q4.	In _____ strategy the company moves from the existing or legacy system to the new ERP system on a specific date.
Option A:	Phased
Option B:	Parallel
Option C:	Hybrid
Option D:	Big Bang
Q5.	The _____ of a project is a factor that impacts the overall success of the ERP implementation
Option A:	Risk
Option B:	Scope
Option C:	Speed
Option D:	Complexity
Q6.	'DO-IT- RIGHT-THE-FIRST-TIME' proposition is used for _____phase of ERP implementation.

Option A:	Gap Analysis
Option B:	Package Evaluation
Option C:	Reengineering
Option D:	Going Live
Q7.	Functional Requirements are documented in _____
Option A:	Software Requirement Specification [SRS]
Option B:	Use Case Document [UCD]
Option C:	Requirements Definition Document [RDD]
Option D:	Vision and Scope Document
Q8.	A successful training will account for minimum of _____% of the total project budget.
Option A:	[30-45] %
Option B:	[5-6] %
Option C:	[20-25] %
Option D:	[10-15] %
Q9.	_____Module of ERP software generates reports such as balance sheet, general ledger and trial balance
Option A:	Financial
Option B:	HR
Option C:	Purchasing
Option D:	Sales and Distribution
Q10.	Material & Capacity Planning, Configuration Management, shop floor control, JIT are the major sub systems of _____ module of ERP
Option A:	Financial
Option B:	Manufacturing
Option C:	Purchasing
Option D:	Sales and Distribution
Q11.	_____ Module of ERP system helps to process the travel expenses effortlessly in several currencies and formats.
Option A:	Salary Administration
Option B:	Benefits Administration
Option C:	Travel Management
Option D:	Personnel Development
Q12.	CIQ stands for
Option A:	Compensation & Implementation Quantity Module
Option B:	Capacity Inspection Quantity
Option C:	Cost Integrated Quotient
Option D:	Computer Integrated Quality Management
Q13.	_____CRM provides the automation of basic business process like marketing, sales and service
Option A:	Operational

Option B:	Analytical
Option C:	Collaborative
Option D:	Enterprise
Q14.	_____ provides information on competitors and industry trends which are used to improve marketing efficiency
Option A:	Sales force Automation [SFA]
Option B:	Enterprise Marketing Automation [EMA]
Option C:	Customer Service and Support [CSS]
Option D:	Collaborative Service and Cost [CSC]
Q15.	The old proverb, " Take time to save time" applies to _____ project
Option A:	Data Warehousing
Option B:	Data Mining
Option C:	Business Process Reengineering
Option D:	Online Analytical Processing
Q16.	_____ is the collection of data designed to support management decision making.
Option A:	RFID
Option B:	OLAP
Option C:	CRM
Option D:	Data warehouse
Q17.	_____tools can analyze massive databases to deliver answers to questions such as "Which client are most likely to respond to my next promotional mailing and why?"
Option A:	Data Mining
Option B:	Data Warehouse
Option C:	SCM
Option D:	OLAP
Q18.	_____OLAP is suitable where there is requirement to drill down to a low level of detail without impacting on the operational system.
Option A:	Hybrid
Option B:	Relational
Option C:	Desktop
Option D:	Multi-Dimensional
Q19.	Product Life Cycle consist of _____phases
Option A:	4
Option B:	6
Option C:	5
Option D:	3
Q20.	Which of the following statements about radio frequency identification (RFID) is False?
Option A:	RFID systems use tiny tags with embedded microchips containing data about an item and its location.

Option B:	RFID systems provide a powerful technology for tracking the movement of goods throughout the supply chain
Option C:	Companies may be required to upgrade hardware and software to accommodate the massive amounts data that are being produced by RFID systems.
Option D:	RFID systems transmit radio signals over long distances.
Q21.	What is EAI?
Option A:	Enterprise Application Integration
Option B:	Electronic Application Interface
Option C:	Exchange Accounting Interchange
Option D:	Electronic Account Integration
Q22.	Which application does not belong to mySAP Business Suite?
Option A:	mySAP Product Life Cycle Management
Option B:	mySAP Geographical Information Management
Option C:	mySAP Supply Chain Management
Option D:	mySAP Customer Relationship Management
Q23.	In _____phase where the ERP is made available to the entire organization
Option A:	Implementation Team Training
Option B:	Gap Analysis
Option C:	Going Live
Option D:	Reengineering
Q24.	_____enables collaboration, planning, execution and coordination of the entire supply chain.
Option A:	CRM
Option B:	EAI
Option C:	OLAP
Option D:	SCM
Q25.	Which process is not include in CRM?
Option A:	Backup and security control
Option B:	Campaign Management
Option C:	Call Center Management
Option D:	Trade promotion Management

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016/Rev2012 (Keep the required)

Examination: First/Second/Third/Final Year Semester I/II/III/IV/V/VI (Keep the required)

Course Code: CSDLO6024 and Course Name: Adv. Computer Network

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	A
Q5	B
Q6	C
Q7	A
Q8.	C
Q9.	B
Q10.	C
Q11.	B
Q12.	B
Q13.	A
Q14.	B
Q15.	D
Q16.	C
Q17.	A
Q18.	A
Q19.	A
Q20.	D
Q21.	C
Q22.	D
Q23.	B
Q24.	A
Q25.	B

University of Mumbai

Examination 2020 under cluster 4 (Lead College: PCE, New Panvel)

Program: **Computer Engineering**

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: CSDLO6024 and Course Name: Advanced Computer Network

Time: 1 hour Max. Marks: 50

==========

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

Q1.	The photonic layer of the SONET is similar to the _____ of OSI model.
Option A:	Network layer
Option B:	Data link layer
Option C:	Physical layer
Option D:	Transport layer
Q2.	The path layer of SONET is responsible for the movement of a signal _____
Option A:	from its optical source to its optical destination
Option B:	across a physical section
Option C:	back to its optical source
Option D:	across a physical line
Q3.	What is SDH?
Option A:	SDH is similar standard to SONET developed by ITU-T
Option B:	Synchronous digital hierarchy
Option C:	SDH stands for synchronous digital hierarchy and is a similar standard to SONET developed by ITU-T
Option D:	none of the mentioned
Q4.	A unidirectional path switching ring is a network with _____
Option A:	one ring
Option B:	two rings
Option C:	three rings
Option D:	four rings
Q5.	SONET is a_____ TDM system.
Option A:	Asynchronous
Option B:	Synchronous
Option C:	Statistical
Option D:	None of the above
Q6.	In ATM, the _____layer accepts transmissions from upper-layer services and maps them into ATM cells.
Option A:	physical
Option B:	ATM
Option C:	AAL
Option D:	none of the above

Q7.	Types of connections used by Asynchronous Transfer Mode (ATM), are
Option A:	SVC and PVC
Option B:	PVC and TDM
Option C:	TDM and SVC
Option D:	SVC and CDM
Q8.	In Asynchronous Transfer Mode (ATM), the endpoints are connected through a
Option A:	Virtual path Interfaces
Option B:	User-to-network interface
Option C:	Network-to-network interfaces
Option D:	Network-to-user interfaces
Q9.	How many OSI layers are covered in the X.25 standard?
Option A:	Two
Option B:	Three
Option C:	Seven
Option D:	Six
Q10.	The PLP packet is used in the_____ layer of the X.25 protocol.
Option A:	Physical
Option B:	Data link
Option C:	Network
Option D:	Transport
Q11.	End-to-end addressing for x.25 is done by the_____ protocol
Option A:	X.3
Option B:	X.121
Option C:	X.28
Option D:	None of the above
Q12.	Hop-to-hop flow and error control in X.25 is done at the _____ layer
Option A:	Physical
Option B:	Frame
Option C:	Packet
Option D:	Data
Q13.	Reverse Path Forwarding (RPF) eliminates the loop in the
Option A:	Flooding Process
Option B:	Formation Process
Option C:	Protocol Process
Option D:	Unicast Vector Process
Q14.	In distance vector routing, each node periodically shares its routing table with _____ and whenever there is a change.
Option A:	every other node
Option B:	its immediate neighbors
Option C:	one neighbor

Option D:	none of the above
Q15.	How large is an MPLS Label Stack?
Option A:	12 bits
Option B:	16 bits
Option C:	24 bits
Option D:	32 bits
Q16.	What fields comprise an MPLS Label Stack?
Option A:	Label Forwarding Information Base
Option B:	Label Information Base
Option C:	Label Value, Traffic Class, Bottom of Stack (BS) and Time to Live (TTL)
Option D:	Label Distribution Protocol
Q17.	In OSPF, a _____ link connects two routers without any other host or router in between.
Option A:	point-to-point
Option B:	transient
Option C:	stub
Option D:	none of the above
Q18.	RTP provides the facility of jitter _____
Option A:	media stream
Option B:	expansion
Option C:	media modification
Option D:	security
Q19.	An RTP header has a minimum size of _____
Option A:	12 bytes
Option B:	16 bytes
Option C:	24 bytes
Option D:	32 bytes
Q20.	In a network, when the load reaches the network capacity, the delay _____.
Option A:	cannot be predicted
Option B:	decreases sharply
Option C:	remains constant
Option D:	increases sharply
Q21.	_____ is the variation in delay for packets belonging to the same flow.
Option A:	Reliability
Option B:	Delay
Option C:	Jitter
Option D:	Bandwidth
Q22.	The main difference between SNMPv3 and SNMPv2 is _____
Option A:	Management

Option B:	Integration
Option C:	Classification
Option D:	Enhanced security
Q23.	Structure of Management Information (SMI), is the guideline of _____
Option A:	HTTP
Option B:	SNMP
Option C:	URL
Option D:	MIB
Q24.	_____ defines the general rules for naming objects, defining object types, and showing how to encode objects and values.
Option A:	SMI
Option B:	MIB
Option C:	BER
Option D:	none of the above
Q25.	An ATM cell has the payload field of _____
Option A:	32 bytes
Option B:	48 bytes
Option C:	64 bytes
Option D:	128 bytes

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSC602 and Course Name: System Programming and Compiler Construction

Time: 1 hour Max. Marks: 50

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

Q16.	D
Q17.	A
Q18.	C
Q19.	B
Q20.	C
Q21.	B
Q22.	A
Q23.	D
Q24.	B
Q25.	A

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSC602 and Course Name: System Programming and Compiler Construction

Time: 1 hour Max. Marks: 50

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

Q1.	A system software that combines multiple object files into a single executable program is _____
Option A:	Assembler
Option B:	Compiler
Option C:	Linker
Option D:	Loader
Q2.	In every system software design _____
Option A:	number of passes are always equal to number of phases
Option B:	number of passes are always lesser than or equal to number of phases
Option C:	number of passes are always greater than or equal to number of phases
Option D:	number of passes are completely independent of number of phases
Q3.	A pseudo opcode of IBM 360 ALP (Assembly Language Program) that makes a base register unavailable is _____
Option A:	DROP
Option B:	DELETE
Option C:	EXIT
Option D:	DISCARD
Q4.	In MASM assembler of x86 family, error of undefined symbolic reference is generated using which table?
Option A:	Cross Reference Table
Option B:	Symbol table
Option C:	Forward Reference Table
Option D:	Stored Register Table
Q5.	Which of the following is not a function of pass1 of an assembler
Option A:	Generate Object code
Option B:	Keep track of LC
Option C:	Remember Literals

Option D:	Prepare symbol table
Q6.	Assign a corresponding number of pass or passes in which the assembly program performs the following function: Keeps base register table
Option A:	Pass-I
Option B:	Pass-II
Option C:	Pass-I, Pass-II
Option D:	It is not performed by Assembler
Q7.	The 2 phases of Macro processor are _____ followed by _____
Option A:	Macro definition, Macro expansion
Option B:	Macro substitution, Macro definition
Option C:	Simple macro substitution, Expansion of nested macro
Option D:	Substituting model statements, Object code generation
Q8.	Macro statement which updates value of expansion time variables has _____ in mnemonic field of ALP (Assembly Language Program)
Option A:	UPDATE
Option B:	ASSIGN
Option C:	LCL
Option D:	SET
Q9.	During macro expansion phase _____
Option A:	Formal parameters are replaced by actual parameters
Option B:	Actual parameters are replaced by formal parameters
Option C:	ALA is used to replace formal parameters by ALA index
Option D:	ALA is used to replace ALA index by actual parameters
Q10.	The condition expansion facility of macro processors is provided to
Option A:	test a condition during the execution of the expanded program
Option B:	to expand certain model statements depending upon the value of a condition during the execution of the expanded program
Option C:	to implement recursion
Option D:	to expand certain model statements depending upon the value of a condition during the process of macros expansion
Q11.	Which is not a function of a general purpose loader ?
Option A:	Allocation
Option B:	Translation
Option C:	Relocation
Option D:	Loading
Q12.	The task of adjusting the address in the statements of a module depending on load time location of the module is called as .....
Option A:	Allocation
Option B:	Linking

Option C:	Relocation
Option D:	Loading
Q13.	In direct linking loader, LESA is indexed using
Option A:	ESD id
Option B:	Symbol id
Option C:	GEST id
Option D:	RLD id
Q14.	ESD cards contain information about
Option A:	All symbols that are defined in this program that may be referenced elsewhere & all symbols referenced in this program but defined elsewhere.
Option B:	Actual Object code translated version of source program
Option C:	Those Location in the program whose content depend on the address at which program is placed
Option D:	End of Object Deck
Q15.	Missing semicolon error is detected by _____phase of compiler
Option A:	Lexical
Option B:	Syntax
Option C:	Semantic
Option D:	Code Optimization
Q16.	CLR (Canonical LR) is a _____parser
Option A:	LL(0)
Option B:	LL(1)
Option C:	LR(0)
Option D:	LR(1)
Q17.	In a compiler, keywords of a language are recognized during
Option A:	Lexical Analysis
Option B:	Syntax Analysis
Option C:	Syntax Directed Translation
Option D:	Code optimization
Q18.	Given grammar is E ->TQ , T -> FR ,Q -> +TQ | -TQ | E , R -> *FR | /FR | E , F -> (E) | id What is FIRST(E)?
Option A:	{*, /, (, id}
Option B:	{+, -, (, id) }
Option C:	{(, id}
Option D:	{*, / }
Q19.	Rules of programming language that are based on context free grammar are checked at _____ phase of compiler.
Option A:	Semantic analysis

Option B:	Syntax analysis
Option C:	Code optimization
Option D:	Code generation
Q20.	Which of the following parser is most powerful?
Option A:	Predictive
Option B:	SLR
Option C:	Canonical LR
Option D:	LALR
Q21.	Which of the following cannot be used as an intermediate code form?
Option A:	Postfix notation
Option B:	Parse tree
Option C:	Three address code
Option D:	Syntax Tree
Q22.	Which of these is a part of synthesis phase?
Option A:	Obtain address of a memory operand from the symbol table
Option B:	Syntax checking
Option C:	Removing white space
Option D:	Type Checking
Q23.	This is not a task of code generation
Option A:	instruction selection
Option B:	register allocation
Option C:	instruction ordering
Option D:	Loading
Q24.	In compiler optimization, which of the following code replacements is an illustration of operator strength reduction ?
Option A:	Replace p + p by 2 * p
Option B:	Replace p * 32 by p << 5
Option C:	Replace p * 0 by 0
Option D:	Replace (p<<4) - p by p * 15
Q25.	Loop unrolling is a code optimization technique
Option A:	That avoids tests at every iteration of the loop
Option B:	That improves performance by decreasing the number of instructions in a basic block
Option C:	That exchanges inner loops with other loops
Option D:	That reorders operation to allow multiple computations to happen in parallel

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSC603 and Course Name: Data Warehousing & Mining

Time: 1 hour Max. Marks: 50

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

Q16.	A
Q17.	A
Q18.	B
Q19.	B
Q20.	A
Q21.	D
Q22.	A
Q23.	C
Q24.	B
Q25.	A

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

Q1.	The method of normalizing the dimension table in star schema is known as
Option A:	Fact
Option B:	Dimension
Option C:	Snowflaking
Option D:	Factless facts
Q2.	What is Transient data?
Option A:	data in which changes to existing records cause the previous version of the records to be eliminated
Option B:	data in which changes to existing records do not cause the previous version of the records to be eliminated
Option C:	data that are never altered or deleted once they have been added
Option D:	data that are never deleted once they have been added
Q3.	How normalized is the Fact Table?
Option A:	Partially normalized
Option B:	Completely denormalized
Option C:	Partially denormalized
Option D:	Completely normalized
Q4.	A condition when each cell of the Data cube is not filled with data and that leads to more processing time is called _____
Option A:	Sparsity
Option B:	Scarcity
Option C:	Snowflaking
Option D:	Normalization
Q5.	After the initial load, the data warehouse is kept up-to-date by two actions: REFRESH and UPDATE. As the number of records increase in a Data Warehouse, cost of update operation _____ .
Option A:	decreases
Option B:	increases
Option C:	remains constant

Option D:	is same as cost of Refresh
Q6.	Choose one that best describes the load and index operation.
Option A:	A process to reject data from the data warehouse and to create the necessary indexes
Option B:	A process to load the data into the data warehouse and create the necessary indexes to access it back
Option C:	A process to upgrade the quality of data after it is moved into a data warehouse
Option D:	A process to upgrade the quality of data before it is moved into a data warehouse
Q7.	_____ forms the core of the multidimensional model that consists of a large set of facts and a number of dimensions
Option A:	Data Cube
Option B:	Cuboid
Option C:	Normalized Cube
Option D:	Data Mart
Q8.	Choose the one that provides aggregation operation of moving from finer-granularity data to a coarser granularity
Option A:	Rollup
Option B:	Drill down
Option C:	Dicing
Option D:	Pivoting
Q9.	Which Operation treats incorrect or missing data
Option A:	Preprocessing
Option B:	Interpretation
Option C:	Selection
Option D:	Transformation
Q10.	Which method is not a part of data pre-processing
Option A:	Data Visualization
Option B:	Data Discretization
Option C:	Data Cleaning
Option D:	Data Reduction
Q11.	Summarization of the general characteristics or feature of a target class of data is known as
Option A:	Data Characterization
Option B:	Data Classification
Option C:	Data discrimination
Option D:	Data selection
Q12.	The data from different sources converted into a common format for processing is known as
Option A:	Selection
Option B:	Preprocessing

Option C:	Transformation
Option D:	Interpretation
Q13.	_____ is a technique which is used for data reduction in the data mining process.
Option A:	Attribute subset selection
Option B:	Correlation
Option C:	Cartesian Product
Option D:	Join
Q14.	For a Confusion Matrix, True Negative= 200, False Positive= 70, False Negative=50, True Positive=600 . Values of Sensitivity and Specifity are:
Option A:	95% and 83.3%
Option B:	100% and 70%
Option C:	70% and 100%
Option D:	92.3% and 74%
Q15.	What do you mean by support(A)?
Option A:	Total number of transactions containing A
Option B:	Total Number of transactions not containing A
Option C:	(Number of transactions containing A) / (Total number of transactions)
Option D:	(Number of transactions not containing A) /(Total number of transactions)
Q16.	Medical researchers often use _____ to understand the relationship between drug dosage and blood pressure of patients.
Option A:	Linear Regression
Option B:	Decision Tree
Option C:	Prediction
Option D:	Multiple Linear Regression
Q17.	Outliers effect which algorithm the most?
Option A:	K-means clustering algorithm
Option B:	K-medoids clustering algorithm
Option C:	K-medians clustering algorithm
Option D:	K-modes clustering algorithm
Q18.	K-means can be considered as which of the following ?
Option A:	Re-enforcement learning
Option B:	Unsupervised learning
Option C:	Supervised learning
Option D:	Machine Learning
Q19.	_____ clustering techniques starts with all records in one cluster and then try to split that cluster into small pieces
Option A:	Agglomerative
Option B:	Divisive
Option C:	Partitioning

Option D:	Numeric
Q20.	Apriori algorithm scans the database and generates _____ item sets of a particular size for every iteration.
Option A:	Candidate
Option B:	Primary
Option C:	Secondary
Option D:	Recurring
Q21.	This method constructs a highly compact data structure to compress the original transaction database while discovering interesting patterns
Option A:	Apriori
Option B:	Classification
Option C:	Clustering
Option D:	Frequent Pattern Growth
Q22.	What is the difference between absolute and relative support?
Option A:	Absolute - Minimum support count threshold and Relative - Minimum support threshold
Option B:	Absolute - Minimum support threshold and Relative - Minimum support count threshold
Option C:	Absolute - Maximum support count threshold and Relative - Minimum support threshold
Option D:	Absolute - Maximum support count threshold and Relative - Maximum support threshold
Q23.	Consider the given set of transactions: Transactions Items T1: Pasta, Oregano T2: Pasta, olives T3: Oregano, cheese, olives T4: Flour, Oregano, Pasta Calculate Confidence of (Pasta, Oregano → Flour)
Option A:	1.5
Option B:	1
Option C:	0.5
Option D:	2
Q24.	This technique of web content mining accomplishes personalization by recommending pages that have been previously been given high ratings by similar user
Option A:	Manual Technique
Option B:	Collaborative Filtering
Option C:	Content-based Filtering
Option D:	Co-occurrence Filtering
Q25.	Clickstream is also known as _____
Option A:	Web log

Option B:	Buffer data
Option C:	Rank-sink
Option D:	Hub

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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Question	Correct Option
Q1.	c
Q2.	a
Q3.	b
Q4	d
Q5	d
Q6	b
Q7	a
Q8.	d
Q9.	c
Q10.	c
Q11.	a
Q12.	c
Q13.	a
Q14.	d
Q15.	a
Q16.	a

Q17.	d
Q18.	b
Q19.	b
Q20.	c
Q21.	a
Q22.	b
Q23.	d
Q24.	c
Q25.	c

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.	Decrypt the cipher text "FRPSXWHU" using Caesar Cipher.
Option A:	COMPOUND
Option B:	BUILDING
Option C:	COMPUTER
Option D:	DYNAMICS
Q2.	Which is a monoalphabetic cipher?
Option A:	Additive cipher
Option B:	Playfair cipher
Option C:	Hill Cipher
Option D:	Rail fence cipher
Q3.	Use Vigenere cipher with key “HACK” to encipher the message “SECURITY”.
Option A:	ZFEEYJVI
Option B:	ZEEEYIVI
Option C:	ZBEFYJVJ
Option D:	ZEEEZIVI
Q4.	One Time Pad is also known as____.
Option A:	Playfair cipher
Option B:	Hill cipher
Option C:	Vigenere Cipher
Option D:	Vernam
Q5.	In DES algorithm expansion box is used to convert _____bits of data.
Option A:	16 to 48
Option B:	48 to 64
Option C:	64 to 128
Option D:	32 to 48
Q6.	Given C=E(K1,D(K2,E(K1,P))) what will be P?

Option A:	P=D(K1,E(K1,D(K2,C)))
Option B:	P=D(K1,E(K2,D(K1,C)))
Option C:	P=D(K2,E(K2,D(K1,C)))
Option D:	P=D(K1,E(K1,D(K1,C)))
Q7.	If Φ(n) is 1012 where p & q are greater than 10 then what is value of p & q?
Option A:	p=23,q=47
Option B:	p=22,q=46
Option C:	p=24,q=48
Option D:	p=44,q=23
Q8.	In ElGamal algorithm prime number p is 11,generator g is 2,secret key x is 5 then what is public key y?
Option A:	12
Option B:	14
Option C:	16
Option D:	10
Q9.	Diffie-Hellman algorithm is what kind of algorithm?
Option A:	Symmetric Key Cryoptography
Option B:	Asymmetric Key Cryoptography
Option C:	Key Exchange Algorithm
Option D:	Hash Algorithm
Q10.	In the Knapsack Cryptosystem tuple b= [11,39,157], modulus n is 900 & r is 37. What is tuple t?
Option A:	[407,546,409]
Option B:	[407,567,409]
Option C:	[407,543,409]
Option D:	[407,543,417]
Q11.	In MD5 algorithm every 512 bits block is further divided into how many bits blocks?
Option A:	32 bits
Option B:	64 bits
Option C:	128 bits
Option D:	256 bits
Q12.	Responsibility of certification authority of digital signature is to authenticate____.
Option A:	hash function used
Option B:	private key of subscriber
Option C:	public key of subscriber
Option D:	key used in DES
Q13.	The heart of the X.509 scheme is ____.
Option A:	Public key
Option B:	Private key

Option C:	Session Key
Option D:	Random Value
Q14.	What is input & output size of the data in SHA-1?
Option A:	128 bits input & 512 bits output
Option B:	512 bits input & 128 bits output
Option C:	160 bits input & 512 bits output
Option D:	512bits input & 160 bits output
Q15.	IP spoofing refers to_____.
Option A:	connection hijacking through a fake Internet Protocol (IP) address
Option B:	connection hijacking through a correct Internet Protocol (IP) address
Option C:	connection through a known Internet Protocol (IP) address
Option D:	IP copying
Q16.	Digital certificate is revoked.
Option A:	when key is compromised
Option B:	on whish
Option C:	after fix interval
Option D:	without any reason
Q17.	IPSec uses a set of SAs called the _____.
Option A:	SAD
Option B:	SAB
Option C:	SADB
Option D:	SAP
Q18.	If option is given to you to use IDS and firewall interchangeably in your network.
Option A:	Yes I will go for it
Option B:	No I will not accept it
Option C:	I will use IDS only
Option D:	I will use firewall only
Q19.	How to achieve digital signature?
Option A:	Encrypt data with public key
Option B:	Encrypt data with private key
Option C:	Calculate hash of the data
Option D:	Compute message digest
Q20.	What is a Denial of Service attack aiming for?
Option A:	Exploit a weakness in the TCP/IP stack
Option B:	To execute a Trojan on a system
Option C:	To overload a system so it is no longer operational
Option D:	To shutdown services by turning them off
Q21.	Which of the following malicious program do not replicate automatically?

Option A:	Trojan Horse
Option B:	Virus
Option C:	Worm
Option D:	Zombie
Q22.	In cross-site scripting where does the malicious script execute?
Option A:	On the web server
Option B:	In the user's browser
Option C:	On the attacker's system
Option D:	In the web app model code
Q23.	Which of the following is the type of software that has self-replicating software that causes damage to files and system?
Option A:	Viruses
Option B:	Trojan horses
Option C:	Bots
Option D:	Worms
Q24.	Statistical anomaly detection and Rule-based detection are the approaches of _____.
Option A:	Virus detection
Option B:	Malicious code detection
Option C:	Intrusion detection
Option D:	Trusted System detection
Q25.	PGP operations consist of which four services?
Option A:	Authentication, Confidentiality, Integrity, Email Compatibility
Option B:	Availability, Confidentiality, Compression, Email Compatibility
Option C:	Authentication, Confidentiality, Compression, Email Compatibility
Option D:	Authentication, Confidentiality, Availability