

2311_IT_Sem-V_R19_Internet Programming_Shah & Anchor Kutchhi Engineering College

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

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2311_IT_Sem-V_Internet
Programming_Shah &
Anchor Kutchhi
Engineering College

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Q.1) 1 to 5

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Class inheritance is created by using which keyword
Option A:	Create
Option B:	Inherits
Option C:	Extends
Option D:	This
2.	Which is a ternary operator in JavaScript?
Option A:	#
Option B:	::
Option C:	&.
Option D:	?.
3.	Data types which is not available in Javascript
Option A:	Number
Option B:	Boolean
Option C:	Undefined
Option D:	Float
4.	In ES6, a variable can be defined in how many ways.
Option A:	1
Option B:	3
Option C:	4
Option D:	5
5.	React.js components are saved in which directory
Option A:	Inside the <code>js/components/</code>
Option B:	Inside the <code>vendor/components/</code>
Option C:	Inside the <code>external/components/</code>
Option D:	Inside the <code>vendor/</code>

Q.1) 6 to 10

6.	What is the use of Webpack in React Js
Option A:	It is used to transpile all the javascript down into one file.
Option B:	It runs React local development server
Option C:	It is module bundler
Option D:	It is not a module bundler
7.	In Node.js application, what is the default scope
Option A:	Global
Option B:	Local
Option C:	Global Function
Option D:	Local to Object
8.	To create a web server which module is necessary.
Option A:	net module
Option B:	http module
Option C:	uri module
Option D:	url model
9.	To make properties and methods available outside the module file, which keyword is used
Option A:	import
Option B:	module
Option C:	exports
Option D:	require
10.	Node.js is not advised to be used in which part of file.
Option A:	Single page applications
Option B:	JSON APIs based applications
Option C:	CPU intensive applications
Option D:	Data-intensive Real-time Applications(DIRT)

Q.2, Q.3 & Q.4

Q2	Solve any Four out of Six	5 marks each
A	What are events in JavaScript. Explain different types of events.	
B	Differentiate between HTML and XML	
C	What are Refs? When to use Refs and when not to use Refs?	
D	What is React JS ? What are the advantages of React JS?	
E	What do you mean by Asynchronous programming?	
F	Differentiate between ES5 and ES6.	

Q3.	Solve any Two Questions out of Three	10 marks each
A	Compare MVC and Flux	
B	Explain various loops in JavaScript. Give example for each.	
C	What is DNS? Explain the steps of DNS Lookup process.	

Q4.		
A	Solve any Two	5 marks each
i.	Explain Redux Architecture? Give steps to install Redux.	
ii.	Explain File System of Node JS in detail.	
iii.	Describe different types of Arrow functions along with example.	
B	Solve any One	10 marks each
i.	Write a stepwise process to create an app using React JS to print "Hello World".	
ii.	a. What is REST API? What are the principles of REST API? b. . What are Buffers and Streams?	

4. Upload your answer papers *

Files submitted:

5. Have you uploaded required pdf file of answers? *

Mark only one oval.

Yes

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University of Mumbai
Examination November 2021
Examinations Commencing from 15 November 2021

Program: Information Technology

Curriculum Scheme: Rev2016

Examination: TE Semester V

Course Code: ITC501 and Course Name: Internet Programming

Time: 2.30 hour

Max. Marks: 80

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

Option 1.

Q2.

Ans A.: Events are the occurrences or actions that are recognized by the software. The interaction of JavaScript with HTML is handled through the events that occur when the browser or the user manipulates the page.

(Definition and explanation 2 marks)

Explain any three events types (carries 1 marks each)

Ans B: Differences b/w HTML and XML (Any 5 differences carries 1 marks each)

HTML	XML
HTML has its own predefined tags	XML tags can be defined using XSLT and DTD whenever needed.
HTML is generally used to display data	XML is generally used to store and transfer data.

Ans C: (References explanation 1 marks, uses of Refs 2 marks, not to use refs 2 marks)

References or refs are features that allow React components to interact with child elements. It provides a way to access DOM nodes or React elements using refs.

And d: (React JS explanation 2 marks, Advantages 3 marks at least 4 points)

React JS is a declarative, efficient, and flexible library of JavaScript for building user interfaces. It is open-source library component-based front-end library which is responsible only for the view purpose.

Ans e. (Explanation for Blocking Vs Non blocking with example 2.5 marks for each)

Blocking is when the execution of additional JavaScript in the Node.js process must wait until a non-JavaScript operation completes. This happen because the event loop is unable to continue running JavaScript while a blocking operation is occurring.

Ans f. (Differences at least any 5 points carries 1 mark each)

ES5	ES6
Performance is lower compared to ES6	Performance is higher
var keyword is define variable.	Using 'let' and 'const' keywords are used to define variable.

Option 2:

Ans A.(comparison b/w MVC and FLUX any 10 points 1 mark for each)

MVC	FLUX
It is synchronous	It is Asynchronous
Hard to debug	Easy to debug.

Ans B. (5 types of loops with syntax and example . 2marks for each type)

Main two types

- I. Definite Loops
 - a. for(; ;)
 - b. for...in
 - c. for...of
- II. Indefinite loops
 - a. while

b. do...while

Ans C: (DNS explanation 2 marks. DNS lookup process explanation with diagram 8 marks)

Internet uses Domain name system (DNS) as its phonebook. People access contents or information in online mode using the domain names, like google.com, yahoo.com. Each web browser communicates with other web browser which is called as user agents through Logical internet Protocol (IP) addresses.

Option 3

Q A.

Ans A.i. . (Redux architecture fig with explanation 4 marks, Installation 1 mark)

Ans ii (file system explanation with common use for the file system module 3 marks, example 2 marks)

Node.js file system module allows working with the file system on computer. It programmatically manipulates files with the built-in fs module. The name is short for 'file system', and the module contains all the functions need to read, write and delete files on the local machine. .

Ans iii. (Two types with explanation and example 2.5 marks each)

Arrow function with parameters

Arrow function with Rest parameters

Q B

Ans. i.

Ans ii. A. (REST API explanation 2 marks. Principles explanation 3 marks.)

Application programming Interface(API) is a set of rules that define how different applications or devices can connect to each other and share data communication with each other.

Principles

1. stateless
2. Client-server decoupling
3. Uniform interface
4. Code on demand

Ans ii.B. (Buffers and streams explanation with example 2.5 marks each)

Buffer objects are generally used for representing fixed length of sequence of bytes. The buffer class is a class which is subclass of 'Uint8Array' class of JavaScript

Streams provide two major advantages over using other data handling methods.

- a. Memory efficiency
- b. Time efficiency.

2511_IT_Sem-V_R19_CNS_Shah & Anchor Kutchhi Engineering College

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Q.1) 1 to 5

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks (2Mx 10=20M-)
1.	Which of the following attack threatens the integrity?
Option A:	Masquerading
Option B:	Denial of service
Option C:	Snooping
Option D:	Traffic analysis
2.	At which layer an application proxy firewall works?
Option A:	Transport Layer
Option B:	Application Layer
Option C:	Network Layer
Option D:	Session Layer
3.	In IPSEC, _____ provides only authentication but not confidentiality.
Option A:	Transport mode
Option B:	Tunnel Mode
Option C:	Encapsulating Security Payload
Option D:	Authentication Header
4.	_____ authenticates the sender of the message.
Option A:	Message Digest
Option B:	Ciphertext
Option C:	Message Authentication Code
Option D:	Modification Detection Code
5.	In AES, for 10 rounds how many round keys will be generated?
Option A:	10
Option B:	11
Option C:	09
Option D:	12

Q.1) 6 to 10

6.	In Secure Socket Layer Protocol, a cipher suite consists of _____.
Option A:	Master key, Client random Number and Server random number
Option B:	Master key, Premaster key and server random number
Option C:	Key exchange algorithm, Hashing algorithm and Encryption algorithm
Option D:	Key exchange algorithm, Hashing algorithm and SSL certificate
7.	Ritesh received an email from his bank asking for his confidential information to update his account by clicking on a given link. This is an example _____ attack.
Option A:	Virus
Option B:	Trojan Horse
Option C:	Phishing
Option D:	Social Engineering
8.	If Ravi wants to authenticate himself for the message that he wants to send to Dilip using RSA cryptosystem, which key Ravi should use?
Option A:	Public key of Dilip
Option B:	Private key of Dilip
Option C:	Public key of Ravi
Option D:	Private key of Ravi
9.	If the plaintext "The house is sold" is encrypted using Vigenere cipher with key "dollars", the ciphertext will be _____.
Option A:	Vuo rnkig vc cnbu
Option B:	Wvp solkh wd docy
Option C:	Wvp rnkig vc docy
Option D:	Vuo solkh vc cnbu
10.	In a Network Access Control System, _____ determines what access should be granted to the node who is requesting it, based on enterprise's defined policy.
Option A:	Access Requestor
Option B:	Network Access Server
Option C:	Policy Server
Option D:	Supplicant

Q.2

Q2	
A	Solve any Two 5 marks each
i.	Use the playfair cipher to encipher the message "The key is hidden under the door pad". Use the word "GUIDANCE" as the key for encryption.
ii.	What is Hashed Message Authentication Code? How is it generated?
iii.	Explain in brief the components and functions of Simple Network Management Protocol.
B	Solve any One 10 marks each
i.	Explain various goals of security with example. Which security mechanisms are used to fulfill these goals?
ii.	What is Malware? Explain any two malware attacks with their preventive measures.

Q.3 & Q.4

Q3	
A	Solve any Two 5 marks each
i.	“Digital signature provides authentication, integrity and non-repudiation” True or false? Justify your answer.
ii.	What is Network Access Control? With diagram, explain elements of Network Access Control System?
iii.	Explain the working of IPSEC in its different modes.
B	Solve any One 10 marks each
i.	What is Intrusion Detection System? How signature-based IDS and Anomaly based work? State their advantages and limitations.
ii.	A and B wish to use RSA to communicate securely. A chooses public key as (7,119) and B chooses public key as (13,221). a) Calculate private key of A. b) Calculate private key of B c) With what key B will encrypt the message M=6 if B wants to send it to A. Find the ciphertext for the same.

Q4	
A	Solve any Two 5 marks each
i.	How confidentiality and integrity are achieved using record protocol of SSL?
ii.	Describe the NAC enforcement methods.
iii.	What is Transposition Cipher? Explain any one technique with an example.
B	Solve any One 10 marks each
i.	Explain with diagram, how Kerberos can be used to perform user authentication?
ii.	Describe with appropriate diagrams how cryptographic secrets are generated in TLS?

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Mark only one oval.

Yes

Examinations Commencing from 22nd November 2021 to 5th January 2022

Program: **Information Technology**

Curriculum Scheme: Rev2019/2016

Examination: TE Semester V

Course Code: ITC502 and Course Name: Computer Network Security

Time: 2 hour 30 minutes

Max. Marks: 80

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

2711_IT_Sem-V_R19_EE_Shah & Anchor Kutchhi Engineering College

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2711_IT_Sem-
V_R19_EE_Shah &
Anchor Kutchhi
Engineering College

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2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

Q.1) 1 to 5

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	An individual who initiates, creates and manages a new business can be called
Option A:	A leader
Option B:	A manager
Option C:	A professional
Option D:	An entrepreneur
2.	Which of the following is not entrepreneurial motivation category?
Option A:	Entrepreneurial ambition
Option B:	Compelling reason
Option C:	Facilitating factor
Option D:	External factor
3.	A company which has minimum 7 and maximum unlimited members is called
Option A:	Limited Company
Option B:	Public Company
Option C:	Government Company
Option D:	Multinational Company
4.	Which of the following statements best defines a forward auction?
Option A:	Many sellers and a single potential buyer
Option B:	Many sellers and many buyers
Option C:	A single seller and many potential buyers
Option D:	A single seller and a single buyer
5.	Entrepreneurs who are ready to adopt successful innovations inaugurated by successful innovating entrepreneurs are called as
Option A:	Innovating entrepreneur
Option B:	Imitative entrepreneurs
Option C:	Fabian entrepreneur
Option D:	Drone entrepreneur

Q.1) 6 to 10

6.	To provide financial assistance to entrepreneurs the government has set up a number of _____.
Option A:	financial advisors
Option B:	financial intermediaries
Option C:	Industrial estates
Option D:	financial institutions
7.	_____ is the first development bank of the country.
Option A:	ICICI
Option B:	IDBI
Option C:	SFC
Option D:	IFCI
8.	A _____ encompasses all activities associated with the flow and transformation of goods from the raw material stage, through to the end user, as well as the associated information flows.
Option A:	production line
Option B:	Supply Chain
Option C:	marketing channel
Option D:	warehouse
9.	_____ is the study of how individual, group and organizations select, buy, use and dispose of goods and services, ideas and experiences to satisfy their needs and wants.
Option A:	Consumer behavior
Option B:	Product cycle
Option C:	Purchase behavior
Option D:	Market
10.	_____ is a process of developing skills, competencies and knowledge of employees.
Option A:	Human Relations Management
Option B:	Human Resource Development
Option C:	Human Resource Accounting
Option D:	Human Resource Planning

Q.2, Q.3 & Q.4

Q2.	Solve any Two Questions out of Three	10 marks each
A	Explain entrepreneurial motivational factors in detail	
B	Explain entrepreneurial process with neat diagram	
C	Write a note on types of start-ups.	

Q3.	Solve any Two Questions out of Three	10 marks each
A	Explain different methods to initiate ventures	
B	Write a note on SCM	
C	Describe various types of CRM in detail.	

Q4.	Solve any Two Questions out of Three	10 marks each
A	Explain Characteristics and qualities of successful Entrepreneurs	
B	Write note on Classification and types of Entrepreneurs	
C	Write in detail various sources of finance	

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Examinations Commencing from 22nd November 2021 to 5th January 2022

Program: **Information Technology**

Curriculum Scheme: Rev2019

Examination: TE Semester V

Course Code: ITC503 and Course Name: Entrepreneurship and E-Business

Time: 2 hour 30 minutes

Max. Marks: 80

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

3011_IT_Sem-V_R19_SE_Shah & Anchor Kutchhi Engineering College

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

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3011_IT_Sem-
V_R19_SE_Shah &
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2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

Q.1) 1 to 5

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which of the following activity is undertaken immediately after feasibility study and before the requirement analysis and specification phase?
Option A:	Project Planning
Option B:	Project Monitoring
Option C:	Project Control
Option D:	Project Scheduling
2.	In size oriented metrics, metrics are developed based on the
Option A:	number of user inputs
Option B:	number of lines of code
Option C:	number of Functions
Option D:	amount of memory usage
3.	The SRS is said to be consistent if and only if
Option A:	its structure and style are such that any changes to the requirements can be made easily while retaining the style and structure
Option B:	every requirement stated therein is one that the software shall meet
Option C:	every requirement stated therein is verifiable
Option D:	no subset of individual requirements described in it conflict with each other
4.	Coupling is a qualitative indication of the degree to which a module
Option A:	can be written more compactly
Option B:	focuses on just one thing
Option C:	is able to complete its function in a timely manner
Option D:	is connected to other modules and the outside world
5.	Boundary value analysis belong to?
Option A:	White Box Testing
Option B:	Black Box Testing
Option C:	White Box & Black Box Testing
Option D:	None of the mentioned

Q.1) 6 to 10

6.	Which of the following is not a part of Software Configuration Management Basics?
Option A:	Identification
Option B:	Version
Option C:	Auditing and Reviewing
Option D:	Status Accounting
7.	Arrange the tasks involved in requirements elicitation in an appropriate manner. i. Consolidation ii. Prioritization iii. Requirements Gathering iv. Evaluation
Option A:	iii, i, ii, iv
Option B:	iii, iv, ii, i
Option C:	iii, ii, iv, i
Option D:	ii, iii, iv, i
8.	Staff turnover, poor communication with the customer are risks that are extrapolated from past experience are called
Option A:	Business risks
Option B:	Predictable risks
Option C:	Project risks
Option D:	Technical risks
9.	What type of software testing is generally used in Software Maintenance?
Option A:	Regression Testing
Option B:	System Testing
Option C:	Black-box testing
Option D:	White-box testing
10.	Which of the following is true about black-box testing?
Option A:	Black box testing facilitates testing communication amongst modules
Option B:	The main focus of black box testing is on the validation of your functional requirements.
Option C:	Black box testing gives abstraction from code and focuses on testing effort on the software system behavior.
Option D:	All of the Above

Q.2, Q.3 & Q.4

Q2 (20 Marks)	Solve any Two Questions out of Three	10 marks each
A	Explain Incremental Development process model with a neat block diagram? List its benefit and problem?	
B	Analyze the benefits of reengineering over replacement. With block diagram describe the activities in the reengineering process.	
C	Explain requirement elicitation and analysis process?	

Q3 (20 Marks)	Solve any Two Questions out of Three	10 marks each
A	Describe the three types of software maintenance. Why is it sometimes difficult to distinguish between them?	
B	What are the different design concepts in software engineering?	
C	Short note on i) FP ii) Use case-based estimation	

Q4 (20 Marks)	Solve any Two Questions out of Three	10 marks each
A	Explain i) Software Configuration Management ii) Software Quality Assurance	
B	Explain in detail different types of system testing?	
C	What are the steps in user interface design? Explain in detail.	

4. Upload your answer papers *

Files submitted:

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Examinations Commencing from 22nd November 2021 to 5th January 2022

Program: Information Technology

Curriculum Scheme: Rev2019

Examination: TE Semester V

Course Code: ITC504 and Course Name: Software Engineering

Time: 2 hour 30 minutes

Max. Marks: 80

Answer Key for Objective question:

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

0212_IT_Sem-V_R19_ADMT_Shah & Anchor Kutchhi Engineering College

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0212_IT_Sem-
V_R19_ADMT_Shah &
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Engineering College

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Q.1) 1 to 5

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	The representation of query in form of a data structure is classified as
Option A:	Query graph
Option B:	Query tree
Option C:	Scanner tree
Option D:	Parser tree
2.	The data is stored, retrieved & updated in _____.
Option A:	OLAP.
Option B:	OLTP.
Option C:	SMTP.
Option D:	FTP.
3.	The data structure in big data is.....
Option A:	structured, semi-structured and unstructured
Option B:	semi-structured and unstructured
Option C:	structured and unstructured
Option D:	strictly unstructured
4.	Semi-structured data is information that does not resides in _____
Option A:	RDBMS
Option B:	file
Option C:	HDFS
Option D:	NOSQL
5.	The feature of big data that refers to the quality of the stored data is
Option A:	Variety
Option B:	Volume
Option C:	Variability
Option D:	Veracity

Q.1) 6 to 10

6.	Which of the following is a wide-column store?
Option A:	Cassandra
Option B:	Riak
Option C:	MongoDB
Option D:	Redis
7.	_____ stores are used to store information about networks, such as social connections.
Option A:	Key-value
Option B:	Wide-column
Option C:	Document
Option D:	Graph
8.	Fragmentation technique in which every column of a table is assigned to one or more fragments as a result of fragmentation is called
Option A:	Vertical fragmentation
Option B:	Horizontal fragmentation
Option C:	Hybrid fragmentation
Option D:	Mixed fragmentation
9.	What are the advantages of Replication of data in Distributed database?
Option A:	Availability, Increased parallelism, Cost of updates
Option B:	Availability, Parallelism, Increased data transfer
Option C:	Availability, Parallelism, Reduced data transfer
Option D:	Availability, Parallelism, consistency
10.	The data Warehouse is
Option A:	read only.
Option B:	write only.
Option C:	read write only.
Option D:	none

□

Q.2, Q.3 & Q.4



Q2	Solve any Two Questions out of Three	10 marks each
A	Consider a data warehouse for weather related data like region, date and temperature. Using this example explain all the OLAP operations.	
B	List various fragmentation techniques in distributed databases and explain any one in detail.	
C	What is general purpose of the data warehouse architecture? Explain the architectural components of Datawarehouse with suitable diagram	

Q3	Solve any Two Questions out of Three	10 marks each
A	Explain star and snow flake schema. Specify their pros and cons.	
B	Explain CAP theorem. Compare and contrast SQL and NoSQL.	
C	Explain Query optimization approaches.	

Q4.	Solve any Two Questions out of Three	10 marks each
A	Explain challenges in ETL functions.	
B	Describe Temporal databases with suitable example.	
C	Explain key value store	

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Examinations Commencing from 22nd November 2021 to 5th January 2022

Program: **Information Technology**

Curriculum Scheme: Rev2019

Examination: TE Semester V

Course Code ITDO5012 and Course Name: Advanced Data Management Technologies
Time: 2 hour 30 minutes Max. Marks: 80

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

0212_IT_Sem-V_R19_ADSA_Shah & Anchor Kutchhi Engineering College

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Engineering College

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

2) MCQ correct options and subjective question answers to be written on A4 size papers. Scan all pages of answer papers of Q.1 to Q.4 and create single file in pdf format to upload in the link given.

Q.1) 1 to 5

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	The asymptotic notation used to determine Average case running time of an algorithm is:
Option A:	Big Oh
Option B:	Big Omega
Option C:	Big Theta
Option D:	Small Theta
2.	Time Complexity for Merge Sort algorithm using Divide and Conquer is
Option A:	$O(n)$
Option B:	$\Theta(n \log n)$
Option C:	$O(\log n)$
Option D:	$O(n^2)$
3.	If a problem can be broken into <u>subproblems</u> which are reused several times, the problem possesses <u>property</u> .
Option A:	<u>Overlapping subproblems</u>
Option B:	Optimal substructure
Option C:	Memorization
Option D:	Greedy
4.	Identify the data structure used for multilevel indexing :
Option A:	B Tree
Option B:	B+ -tree
Option C:	AVL Tree
Option D:	Red-black Tree
5.	Identify the correct technique used for solving fractional Knapsack problem.
Option A:	Greedy Technique
Option B:	Divide and conquer
Option C:	Dynamic programming
Option D:	Cannot be solved

Q.1) 6 to 8

6.	Which of the following statement is True for TSP.
Option A:	In TSP, we know that Hamiltonian Tour exists
Option B:	In TSP, many Hamiltonian tours exist
Option C:	In TSP, we find a minimum weight Hamiltonian Cycle.
Option D:	In TSP, we find a maximum weight Hamiltonian Cycle.
7.	To merge two files containing m and n records respectively using Greedy Optimal Merge Pattern, the number of comparisons needed to merge them is :
Option A:	$m - n$
Option B:	$m + n$
Option C:	$m * n$
Option D:	m / n
8.	Best case number of comparisons to for a Naïve string matching algorithm is :
Option A:	$O(m*(n-m+1))$
Option B:	$O(m*n)$
Option C:	$O(n)$
Option D:	$O(1)$

Q.1) 9 to 10

9.	Predict an optimal schedule using Job sequencing with deadlines that gives maximum profit.						
	Jobs	J1	J2	J3	J4	J5	J6
	Deadlines	4	2	3	3	3	3
	Profits	60	50	26	42	20	84
Option A:	1—2—6--3.						
Option B:	4—2—6--1.						
Option C:	3—2—6--4.						
Option D:	4—5—6--2.						
10.	State which of the following options is True:						
Option A:	P is set of problems that can not be solved by a deterministic Turing machine in Polynomial time.						
Option B:	NP is set of decision problems that can be solved by a Non-deterministic Turing Machine in Polynomial time.						
Option C:	NP is subset of P						
Option D:	P, NP, NP-Hard and NP-Complete are not related						

Q.2

Q2	Solve any Four out of Six	5 marks each
A	Define the Asymptotic notations with suitable diagrams.	
B	Explain different methods used for solving recurrences.	
C	Analyze Time complexity of Binary Search using Divide and Conquer. Also write the algorithm for the same.	
D	Describe Genetic algorithms and its importance.	
E	Explain approximate algorithms with a suitable example.	
F	Describe NP-Hard and NP-Complete	

Q.3

Q3		Solve any Two Questions out of Three	10 marks each														
A	Apply All Pair Shortest Path algorithm to solve following problem.																
	<p>Illustrate the process of finding LCS to find the Longest Common Subsequence for the following set of strings:</p> <p>ABCDGH AEDFHR</p>																
C	Solve the following Knapsack problem using Greedy method. $W = 45$																
	<table border="1"> <thead> <tr> <th>Item (O_i)</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>Value (P_i)</td> <td>50</td> <td>140</td> <td>60</td> <td>60</td> </tr> <tr> <td>Size (w_i)</td> <td>5</td> <td>20</td> <td>10</td> <td>12</td> </tr> </tbody> </table>	Item (O_i)	A	B	C	D	Value (P_i)	50	140	60	60	Size (w_i)	5	20	10	12	
Item (O_i)	A	B	C	D													
Value (P_i)	50	140	60	60													
Size (w_i)	5	20	10	12													

Q.4

Q4		Solve any Two Questions out of Three	10 marks each
A	Explain B Tree and Illustrate the insertion operation in a B tree of degree 3 by inserting following data values. 16,70,30,10,18,22,24,5,75,9,7,2,12.		
	Explain Matrix Chain Multiplication problem.		
C	Demonstrate the use of adjacency matrix method to find the topological sorting order for following graph.		

4. Upload your answer papers *

Files submitted:

5. Have you uploaded required pdf file of answers? *

Mark only one oval.

Yes

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Examinations Commencing from 22nd November 2021 to 5th January 2022

Program: Information Technology

Curriculum Scheme: Rev2019

Examination: TE Semester V

Course Code: ITDO5014 and Course Name: Advanced Data Structure & Analysis (ADSA)

Time: 2 hour 30 minutes

Max. Marks: 80

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

0212_IT_Sem-V_R19_ADMT_Shah & Anchor Kutchhi Engineering College

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* Required

1. Email *

2. Enter your Name *

3. Enter your Seat Number *

0212_IT_Sem-
V_R19_ADMT_Shah &
Anchor Kutchhi
Engineering College

1) The Question Paper will have MCQs (for 20 marks) and Subjective/Descriptive Questions (for 60 marks).

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Q.1) 1 to 5

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	The representation of query in form of a data structure is classified as
Option A:	Query graph
Option B:	Query tree
Option C:	Scanner tree
Option D:	Parser tree
2.	The data is stored, retrieved & updated in _____.
Option A:	OLAP.
Option B:	OLTP.
Option C:	SMTP.
Option D:	FTP.
3.	The data structure in big data is.....
Option A:	structured, semi-structured and unstructured
Option B:	semi-structured and unstructured
Option C:	structured and unstructured
Option D:	strictly unstructured
4.	Semi-structured data is information that does not resides in _____
Option A:	RDBMS
Option B:	file
Option C:	HDFS
Option D:	NOSQL
5.	The feature of big data that refers to the quality of the stored data is
Option A:	Variety
Option B:	Volume
Option C:	Variability
Option D:	Veracity

Q.1) 6 to 10

6.	Which of the following is a wide-column store?
Option A:	Cassandra
Option B:	Riak
Option C:	MongoDB
Option D:	Redis
7.	_____ stores are used to store information about networks, such as social connections.
Option A:	Key-value
Option B:	Wide-column
Option C:	Document
Option D:	Graph
8.	Fragmentation technique in which every column of a table is assigned to one or more fragments as a result of fragmentation is called
Option A:	Vertical fragmentation
Option B:	Horizontal fragmentation
Option C:	Hybrid fragmentation
Option D:	Mixed fragmentation
9.	What are the advantages of Replication of data in Distributed database?
Option A:	Availability, Increased parallelism, Cost of updates
Option B:	Availability, Parallelism, Increased data transfer
Option C:	Availability, Parallelism, Reduced data transfer
Option D:	Availability, Parallelism, consistency
10.	The data Warehouse is
Option A:	read only.
Option B:	write only.
Option C:	read write only.
Option D:	none

□

Q.2, Q.3 & Q.4



Q2	Solve any Two Questions out of Three	10 marks each
A	Consider a data warehouse for weather related data like region, date and temperature. Using this example explain all the OLAP operations.	
B	List various fragmentation techniques in distributed databases and explain any one in detail.	
C	What is general purpose of the data warehouse architecture? Explain the architectural components of Datawarehouse with suitable diagram	

Q3	Solve any Two Questions out of Three	10 marks each
A	Explain star and snow flake schema. Specify their pros and cons.	
B	Explain CAP theorem. Compare and contrast SQL and NoSQL.	
C	Explain Query optimization approaches.	

Q4.	Solve any Two Questions out of Three	10 marks each
A	Explain challenges in ETL functions.	
B	Describe Temporal databases with suitable example.	
C	Explain key value store	

4. Upload your answer papers *

Files submitted:

5. Have you uploaded required pdf file of answers? *

Mark only one oval.

Yes

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Examinations Commencing from 22nd November 2021 to 5th January 2022

Program: **Information Technology**

Curriculum Scheme: Rev2019

Examination: TE Semester V

Course Code ITDO5012 and Course Name: Advanced Data Management Technologies
Time: 2 hour 30 minutes Max. Marks: 80

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