Agnel Charities'

Fr. C. Rodrigues Institute of Technology, Vashi, Navi-Mumbai

Department of Information Technology

Internal Assessment I

Academic Year: 2022-2023 (SH 2022)

Semester: V **Time : 1 Hour** **Date : 26/08/2022**

Subject Code: ITC501 **Subject Name: IP** **Maximum Marks :20**

Note -	**Assume suitable data wherever applicable**

Q.1		**Attempt any 5 questions.**	**Marks**	**CO**	**BL**	**PI**
	a	Differentiate between ES5 and ES6.	2	2	2	2.1.2
	b	Show an example of arrow function in ES6.	2		3	2.1.2
	c	Summarize types of Inheritance in ES6.	2		2	2.1.2
	d	Describe ES6 Iterator and Generator.	2		2	2.1.2
	e	Show different types of loops in ES6	2		1	2.1.2
	f	Describe DOM manipulation methods in detail.	2		2	2.1.2
Q.2	a	Show and describe Component of a Web Browser.	5	1	2	2.2.2
		OR				
	b	Differentiate between JSON and XML with example.	5		2	2.2.2
Q.3	a	Describe types of React components in detail.	5	3	2	3.1.3
		OR				
	b	Use of JSX, fragments in React with example.	5		3	3.1.3

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Fr. C. Rodrigues Institute of Technology, Vashi, Navi-Mumbai

Department of Information Technology

Internal Assessment II

Academic Year: 2022-2023 (SH 2022)

Semester: V **Time : 1 Hour** **Date : 01/10/2022**

Subject Code: ITC501 **Subject Name: IP** **Maximum Marks :20**

Note -	**Assume suitable data wherever applicable**

Q.1		**Attempt any 5 questions.**	Marks	CO	BL
	a	Discuss React refs in details.	2	4	2
	b	Show the example of useState( ) in React.	2		3
	c	Show the example of useEffect( ) in React.	2		3
	d	Discuss architecture of flux in detail.	2		2
	e	Differentiate between MVC and Flux	2		2
	f	Discuss Module Bundler. Also discuss Webpack is capable of.	2		2
Q.2	a	Describe callback in node.js.	5	5	2
		OR			
	b	Describe working of event loop in node.js.	5		2
Q.3	a	Recall core features of Express framework. Also discuss advantages of Express.js.	5	6	1
		OR			
	b	Differentiate between Express.js and Node.js.	5		2

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AGNEL CHARITIES'

FR. C. RODRIGUES INSTITUTE OF TECHNOLOGY, VASHI

DEPARTMENT OF Information Technology

SEM : V | **Preliminary Examination (SH-2022)** | **Time: 3 Hours**

SUBJECT : IP | **Max. Marks: 80**

Note :

- **Question No.1 is compulsory.**
- Solve **ANY THREE** questions from the **remaining** five questions.
- Figure to the right indicates full marks.
- Assume suitable data wherever required, but justify the same.

			Marks	L	CO
Q. 1		Solve **ANY FOUR** questions from following. (Each question carries 5 marks)			
	a)	Differentiate between JSON and XML with example.	5	2	1
	b)	Differentiate between ES5 and ES6.	5	2	2
	c)	Describe types of React components in detail.	5	2	3
	d)	Differentiate between MVC and Flux	5	2	4
	e)	Differentiate between Express.js and Node.js.	5	2	6
Q. 2	**a)**	Show and describe Component of a Web Browser.	10	2	1
	b)	What is DOM? Explain different types of DOM.	10	2	1
Q. 3	**a)**	Describe DOM manipulation methods in detail.	10	2	2
	b)	Explain functions in ES6. Give an example of an Arrow function.	10	3	2
Q. 4	**a)**	What are the different lifecycle methods in React?	10	2	3
	b)	Use of JSX, fragments in React with example.	10	3	3
Q. 5	**a)**	Explain React Hooks in detail.	10	2	4
	b)	Explain Express.js Middleware in detail.	10	2	6
Q. 6	**a)**	Describe working of event loop in node.js.	10	2	5
	b)	Describe package.json file.	5	2	5
	c)	How to handle files in node.js.	5	2	5

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Agnel Charities'

Fr. C. Rodrigues Institute of Technology, Vashi, Navi-Mumbai

Department of Information Technology

Internal Assessment I

Academic Year: 2022-2023 **(SH 2022)**

Semester: V | **Time : 1 Hour** | **Date : 26-08-2022**

Subject Code: ITC502 | **Subject Name: Computer Network Security (CNS)** | **Maximum Marks :20**

Note -	**Assume suitable data wherever applicable**

Q.1		**Attempt any 5 questions (2 marks each)**	**Marks**	**CO**	**BL**	**PI**
	a	Compare passive and active security attacks	**2**	**CO1**	2	1.4.1
	b	Encrypt "COMMUNICATE" with Playfair cipher using key "COMPUTER".	**2**		3	2.2.3
	c	Enlist security goals	**2**		1	1.4.1
	d	List different security mechanism	**2**		1	1.4.1
	e	Compare steganography and cryptography	**2**		2	2.2.3
	f	Compare Symmetric key and asymmetric key cryptography	**2**		2	2.2.3
Q.2	a	List different Block Cipher Modes of operation and explain output feedback mode (OFB) with the help of diagram including advantages and disadvantages.	**5**	**CO2**	1	1.4.1
		OR				
	b	Derive the values of n, phi(n) using RSA algorithm with p=7, q=11, e=17, d= 53 and encrypt plaintext message M=8. Also perform decryption.	**5**		3	2.2.3
Q.3	a	Design sample digital certificate and explain each field of it	**5**	**CO2**	3	2.2.3
		OR				
	b	With suitable diagram, explain how Kerberos works.	**5**		2	1.4.1

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Fr. C. Rodrigues Institute of Technology, Vashi, Navi-Mumbai

Department of Information Technology

Internal Assessment II

Academic Year: 2022-2023 **(SH 2022)**

Semester: V | **Time : 1 Hour** | **Date : 01-10-2022**

Subject Code: ITC502 | **Subject Name: Computer Network Security (CNS)** | **Maximum Marks :20**

Note -	**Assume suitable data wherever applicable**

Q.1		Attempt any 5 questions (2 marks each)	Marks	CO	BL
	a	Differentiate between the tunnel mode and transport mode of IPSec.	2	CO4	2
	b	How does PGP encryption work? Describe with suitable block diagram.	2		2
	c	Why is SSL layer positioned between the application layer and the transport layer?	2		1
	d	With neat diagram explain working of SSL record protocol.	2		1
	e	Compare PGP and S/ MIME. Out of PGP and S/MIME, which one would you suggest to use and why?	2		2
	f	Compare Remote access and site-to-site VPN.	2		2
Q.2	a	Compare virus, worm and Trojan horse	5	CO3	2
		OR			
	b	Define DOS attack and list different types of Denial of service attacks and show the way it is performed at network layer	5		1
Q.3	a	Justify how firewall is different than IDS and also mention types of firewall.	5	CO6	2
		OR			
	b	Highlight different types of IDS.	5		2

AGNEL CHARITIES'

FR. C. RODRIGUES INSTITUTE OF TECHNOLOGY, VASHI

SEM: V | DEPARTMENT OF INFORMATION TECHNOLOGY | Time: 1 Hour

SUBJECT: EEB | INTERNAL ASSESSMENT TEST – I (SH2022) | Total Marks: 20

Note :

- ALL questions are **compulsory.**
- Assume suitable data wherever required, but justify the same.

Q. 1		**Attempt any five (02 Marks each)**	L	CO	PI
1.		Define Entrepreneur, Entrepreneurship and Illustrate with a suitable example	2	1	6.1.1
2.		Classify and list the types of Entrepreneurs.	2	1	6.1.1
3.		Anshuman was a corporate manager who started a new initiative for their company ABC which entails setting up a new distinct business unit and board of directors. Identify and illustrate the type of entrepreneurship.	3	1	6.1.1
4.		Entrepreneurship contributes to the economic growth of the country. Identify the contributing factors	3	1	6.1.1
5.		Exemplify social entrepreneurship.	1	1	6.1.1
6.		Define women entrepreneur and Women entrepreneurship with suitable example	1	1	6.1.1
Q. 2		**Attempt any one. (05 Marks each)**			
	A	Illustrate the stages of entrepreneurial process in detail.	2	2	12.1.2
	B	List out the types of startups and infer when an individual should go ahead and establish a particular type of startup.	2	2	12.1.2
Q. 3		**Attempt any one. (05 Marks each)**			
	A	Mohan is planning to start a venture, provide him the diverse ways in which he can initiate the ventures.	3	3	12.1.2
	B	Explore the importance of marketing plan in setting up a business. Organize the steps involved in developing a marketing plan	3	3	12.1.2

----------All the best----------

AGNEL CHARITIES'

FR. C. RODRIGUES INSTITUTE OF TECHNOLOGY, VASHI

SEM: V | **DEPARTMENT OF INFORMATION TECHNOLOGY** | Time: 1 Hour

SUBJECT: EEB | **INTERNAL ASSESSMENT TEST – II (SH2022)** | Total Marks: 20

Note :

- **ALL** questions are **compulsory.**
- Assume suitable data wherever required, but justify the same.

Q. 1		**Attempt any five (02 Marks each)**	L	CO
1.		An individual is planning to start a business he/she needs funding to do so. Identify and list out the financing stages corresponding to the stage of business cycle.	3	4
2.		Summarize the source of finance to start the venture.	2	4
3.		ABC company is a Venture capitalist. Identify the venture capital process to evaluate the business proposal placed by the start-up.	3	4
4.		Exemplify Human Resource Management.	1	4
5.		List out the HR planning phase	1	4
6.		Explain Stategic management and General management	2	4
Q. 2		**Attempt any one. (05 Marks each)**		
	A	Identify a real-world scenario of globalization of E-Business, interpreting the benefits and challenges of global E-Business.	3	5
	B	Identify the different E-Commerce models and corelate it to real world scenarios	3	5
Q. 3		**Attempt any one. (05 Marks each)**		
	A	Explain CRM along with its contemporary trends	2	6
	B	Illustrate core and Extended ERP	2	6

----------All the best----------

AGNEL CHARITIES'

FR. C. RODRIGUES INSTITUTE OF TECHNOLOGY, VASHI

SEM : V

DEPARTMENT OF INFORMATION TECHNOLOGY

Time: 3 Hours

SUBJECT : EEB

Preliminary Examination (SH-2022)

Max. Marks: 80

Note :

- **Question No.1 is compulsory.**
- Solve **ANY THREE** questions from the **remaining** five questions.
- Figure to the right indicates full marks.
- Assume suitable data wherever required, but justify the same.

			Marks	L	CO
Q. 1		Solve **ANY FOUR** questions from following. (Each question carries 5 marks)			
	a)	Illustrate the evolution of entreprenuership	5	2	1
	b)	Explain cooperatives and its types	5	2	2
	c)	Identify the perspectives in business plan preparation	5	3	3
	d)	Examine the source of finance for starting a venture	5	4	4
	e)	Examine and classify E-MarketPlace	5	4	5
Q. 2	a)	Classify and Illustrate the types of entrprenuers.	10	2	1
	b)	Compare and Contrast proprietorship , partnership and cooperation based on distinct parameters.	10	2	2
Q.3	a)	Manohar wants to start a venture. He is studying the various options available. Identify the different options available and suggest to Manohar so he can take the decision on the method to initiate the venture.	10	3	3
	b)	A Shimla based venture capitalist company has received multiple business plan. Identify the criteria utilized by them for evaluating the new-venture proposal and the venture capital process they follow to complete the deal.	10	3	4
Q.4	a)	Outline and Explain E-governement, types and its benefits	10	2	5
	b)	Ilustrate the push, pull supply chain model and outline the elements of SCM	10	2	6
Q.5	a)	ABC company is shifting from the traditional procurement to E-procurement. Identify and suggest to the company the drivers of E-procurement and the basic components of the E-procurement sysytems.	10	3	6
	b)	Small scale industries are the driving force of the country's economic growth. Identify the factors which help the SSI to contribute to the economy.	10	3	2
Q.6	a)	Illustrate Human Resource Management emphasing on the Planning, Job Analysis, Training , Recriutment and Selection	10	2	4
	b)	Explain M-Commerce highlighting the attributes, advantage , disadvantage and its application.	10	2	5

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Fr. CRIT, Vashi
Internal Assessment Test – I
Department of Information Technology

Subject: Software Engineering **Date: 29/08/22**
Marks: 20 **Duration: 1 Hr**

Q-1	Attempt any five questions: (2 marks each)	L	CO	PI
(A)	Define characteristics of software that makes it different from hardware.	1	1	1.3.1
(B)	State layered structure of Software Engineering	1	1	1.3.1
(C)	Recall the differences between SCRUM and Kanban Model.	1	1	1.3.1
(D)	State the differences between waterfall model and incremental model.	1	1	1.3.1
(E)	List the levels in Capability Maturity Model (CMM).	1	1	1.3.1
(F)	State Spiral model of software development	1	1	1.3.1
Q-2	**Attempt any one : (5 marks each)**			
A	Write about the types of feasibility study in detail.	**2**	2	2.1.2
	OR			
B	Explain types of requirements.	**2**	2	2.1.2
Q-3	**Attempt any one : (5 marks each)**			
A	Discuss function point estimation with an example.	**2**	3	2.1.3
	OR			
B	Describe COCOMO model with an example.	**2**	3	2.1.3

----- All The Best -----

Fr. CRIT, Vashi
Internal Assessment Test – II
Department of Information Technology

Subject: Software Engineering **Date: 03/10/22**
Marks: 20 **Duration: 1 Hr**

Q-1	**Attempt any five questions: (2 marks each)**	L	CO
(A)	Define refactoring process with example.	1	4
(B)	State qualities of good software design.	1	4
(C)	Recall the differences between Cohesion and Coupling	1	4
(D)	State the different types of Abstraction in software design with examples.	1	4
(E)	List the different types of cohesion in software design.	1	4
(F)	State different architectural styles in software design.	1	4
Q-2	**Attempt any one : (5 marks each)**		
A	Discuss the different categories of risks.	2	5
	OR		
B	Explain RMMM plan for risk management.	2	5
Q-3	**Attempt any one : (5 marks each)**		
A	Discuss principles of software testing.	2	6
	OR		
B	Write about software testing and its types.	2	6

----- **All The Best** -----

AGNEL CHARITIES'

FR. C. RODRIGUES INSTITUTE OF TECHNOLOGY, VASHI

SEM : V	DEPARTMENT OF INFORMATION TECHNOLOGY	Time: 3 Hours
SUBJECT : Software Engineering	Preliminary Examination (SH-2022)	Max. Marks: 80

Note :

- **Question No.1 is compulsory.**
- Solve **ANY THREE** questions from the **remaining** five questions.
- Figure to the right indicates full marks.
- Assume suitable data wherever required, but justify the same.

			Marks	L	CO
Q. 1		Solve **ANY FOUR** questions from following. (Each question carries 5 marks)			
	a)	Recall any five Software Application domains with example.		1	1
	b)	State the differences between waterfall and incremental model.		1	1
	c)	Memorize about Capability Maturity Model.		1	1
	d)	State layered structure of Software Engineering		1	1
	e)	Recall the differences between SCRUM and Kanban Model.		1	1
Q.2					
	a)	Dicuss the difference between White Box and Black Box testing.	10	2	6
	b)	Explain software reverse engineering in detail.	10	2	6
Q.3					
	a)	Discuess what is FTR in SQA? What are it's objectives? Explain steps in FTR.	10	2	5
	b)	Explain SQL Process with its benefits.	10	2	5
Q.4					
	a)	Classify the different types of cohesion in software design.	10	2	4
	b)	Describe Software architectural styles	10	2	4
Q.5					
	a)	Describe Function point Estimation technique in detail.	10	2	3
	b)	Explain COCOMO model.	10	2	3
Q.6					
	a)	Write an SRS document for online student feedback system.	10	3	2
	b)	Illustrate what is feasibility study? Explain types of feasibility study in detail.	10	3	2

************All the best************

Fr. C. Rodrigues Institute of Technology, Vashi.
Department of Information Technology
Internal Assessment Test-I (August-2022)

Class: V IT **Max. Marks: 20**
Subject: ADSA **Duration: 1 Hr.**

Q1.	Answer any FIVE out of SIX sub-questions (02 marks each)	Marks	CO	BL	PI
a)	Estimate the time complexity of the following function. $T(n) = 27\ T(n/3) + n^3 \log n$	2M	CO1	3	1.4.1
b)	Define Big Ω notation. Which bound is represented by Big Ω notation.	2M	CO1	1	1.4.1
c)	State properties of an algorithm.	2M	CO1	1	1.4.1

d)	Find the Time complexity of following Iterative algorithm :
	`For ( j = 1 ; j <= n/2 ; j ++ )`
	`  For ( k = 1 ; k <= n ; k = k * 2 )`
	`  print ( " Hello")`
		2M	CO1	3	1.4.1

e)	Find the Space complexity of following algorithm :
	`A( int a [ n ], int n )`
	`{`
	`int I, j;`
	`int B[n][n]`
	`for ( I = 1 to n )`
	`for ( j = 1 to n )`
	`B [ i ][ j ] = a [ i ];`
	`}`
		2M	CO1	3	1.4.1

f)	Define the terms Time Complexity and Space Complexity	2M	CO1	1	1.4.1
Q2. a	Illustrate the construction of a B tree by the insertion of following nodes in a B Tree of order 3 : 120, 190, 54, 180, 04, 70, 24, 34, 45, 75, 112, 67.	5M	CO2	3	2.2.3
	OR				
Q2.b	Build a MIN Heap by inserting the elements "40, 48, 60, 30, 62, 50, 25 " and then Perform deletion of root node from the resulting MIN Heap.	5M	CO2	3	2.2.3
Q3.a	Summarize the pseudocode to Form a recurrence relation and **Estimate** the time complexity of MIN MAX algorithm using Divide & Conquer approach.	5M	CO3	2	2.2.3
	OR				
Q3.b	Summarize the pseudocode to Form a recurrence relation and **Estimate** the time complexity of MERGE SORT algorithm using Divide & Conquer approach.	5M	CO3	2	2.2.3

**********ALL THE BEST **********

Fr. C. Rodrigues Institute of Technology, Vashi.
Department of Information Technology
Internal Assessment Test-II (October-2022)

Class: V IT
Subject: ADSA

Max. Marks: 20
Duration: 1 Hr.

Q1.	Answer any FIVE out of SIX sub-questions (02 marks each)	Marks	CO	BL
a)	Discuss the approach used by Greedy Technique for Problem Solving. Which kind of problems are solved by using Greedy Technique?	2M	CO3	2
b)	Construct an optimal schedule using Job sequencing with deadlines that gives maximum profit.	2M	CO3	3

Jobs	J4	J1	J3	J2	J5	J6
Deadlines	2	5	3	3	4	2
Profits	300	200	190	180	120	100

c)	Identify and list the problems that can be solved using Greedy Technique.	2M	CO3	1
d)	Solve the following Knapsack problem using Greedy method. W = 45	2M	CO3	3

Item (Oi)	A	B	C	D
Value (Pi)	50	140	60	60
Size (wi)	5	20	10	12

e)	Why Greedy technique does not work for the normal **0/1** knapsack problem when we must take all of an item or none of it? Justify your answer with suitable example.	2M	CO3	2
f)	Apply Greedy technique to find Optimal merge pattern for the given files, f_1, f_2, f_3, f_4, f_5 **and** f_6 with **30, 5, 15 , 25, 20, 10** number of elements respectively.	2M	CO3	3
Q2. a	Apply Rabin-Karp algorithm to Find whether the input text T contains the given pattern (195) or not. Assume q =13. **T =**	5M	CO5	3

1	3	0	1	9	5	3

OR

Q2.b	Discuss about Genetic algorithm as an advanced optimization algorithm.	5M	CO5	2
Q3.a	Compare Divide and conquer and Dynamic Programming techniques of problem solving with suitable example.	5M	CO4	2

OR

Q3.b	What is Travelling Salesman problem? Discuss Dynamic programming approach of solving Travelling Salesman problem.	5M	CO4	2

**********All the Best **********

AGNEL CHARITIES'

FR. C. RODRIGUES INSTITUTE OF TECHNOLOGY, VASHI

SEM : V | DEPARTMENT OF Information Technology | Time: 3 Hours

SUBJECT : ADSA | Preliminary Examination (SH-2022) | Max. Marks: 80

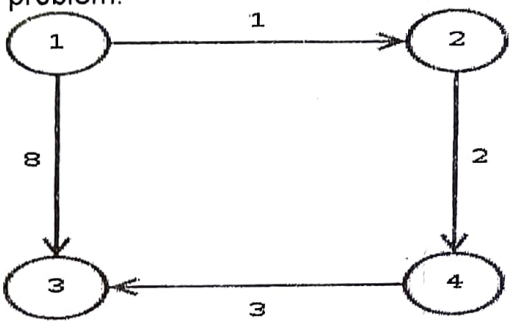
Note :

- Question No.1 is compulsory.
- Solve ANY THREE questions from the **remaining** five questions.
- Assume suitable data wherever required, but justify the same.

			Marks	L	CO
Q. 1		Solve **ANY FOUR** questions from following. (Each question carries 5 marks)			
	a)	Estimate the time complexity for the following function. $T(n) = 9T(n/3) + n^2 \log n$	5M	3	CO1
	b)	State properties of Red Black Tree with suitable diagram.	5M	1	CO2
	c)	Construct an optimal schedule using Job sequencing with deadlines that gives maximum profit.	5M	3	CO3
	d)	Write a note on Optimum Binary Search Tree (OBST).	5M	2	CO4
	e)	Apply Rabin-Karp algorithm to Find whether the input text T contains the given pattern (624) or not. Assume q =13.	5M	3	CO5
Q. 2	a)	Define the Asymptotic notations with suitable diagrams.	10M	1	CO1
	b)	Describe different methods used for solving recurrences.	10M	2	CO1
Q. 3	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.	10M	3	CO2
	b)	Explain B+ Tree and **Illustrate** the construction of a B+ tree by the insertion of following nodes in a B+ Tree of order 3 : **47, 52, 63, 70, 76, 50, 55, 80, 73.**	10M	3	CO2

Jobs	A	B	C	D
Profits	20	10	40	30
Deadlines	4	1	1	1

2	8	6	2	4	7	0

Q. 4	a)	Analyze the Time complexity of Quick Sort using Divide and Conquer also Write the algorithm for Quick Sort using Divide and Conquer strategy.	10M	4	CO3
	b)	Describe Knapsack problem. Apply Greedy technique to solve the following instance of Knapsack problem. **Profit (Pi) = {20, 30, 66, 40, 60} , Weight (Wi) = {10, 20, 30, 40, 50}, Given: n = 5, W = 100, Find an Optimal solution that gives maximum profit.**	10M	3	CO3
Q. 5	a)	Apply All Pair Shortest Path algorithm to solve following problem. 	10M	3	CO4
	b)	Elaborate on Matrix Chain Multiplication with suitable example.	10M	2	CO4
Q. 6	a)	Illustrate the process of finding LCS to find the Longest Common Subsequence for the following set of strings: ABCDGH AEDFHR	10M	3	CO5
	b)	Describe P, NP, NP-Hard and NP-Complete problems.	10M	2	CO5

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