

(Please write your Enrollment Number)

Enrollment No. 071

MID-TERM EXAMINATION

(MCA) (Semester : 3)

(October 2024) OFF LINE mode

Subject Code: MCA 207	Subject: Cyber Security	Maximum Marks :30
Time : 1 ½ Hours		

Note: Q1 is compulsory. Attempt any two parts of Q2 and Q3

Q1		(2.5*4=10)	CO Mapping
	a) Explain the role of Security services and mechanisms in mitigating cyber threats.		CO1
	✓ b) Discuss the concept of phishing and how it can be prevented. What makes phishing attacks effective? 2.5		CO1
	✓ c) What is identity theft, and how is it perpetrated online? What are some of the methods to prevent identity theft? 2.5		CO2
	✓ d) Describe the process of password cracking. What are the common techniques attackers use to crack passwords? 2.5		CO2
UNIT I			CO Mapping
Q2	Attempt any two parts	(5*2=10)	
	✓ a) Elaborate on the concept of Social Engineering in cybersecurity. How do attackers manipulate human behavior, and what are the key methods used in social engineering attacks? 2.5		CO1
	b) Discuss the Dark Web and its relationship with cybercrime. How do anonymity networks like TOR and Proxy servers aid in maintaining the hidden nature of activities on the dark web.		CO1
	✓ c) Discuss the various sources of Security threats. How do they target different assets, and what vulnerabilities do they exploit? What are the key differences between active and passive network threats? 1.5		CO1
UNIT II			CO Mapping
Q3	Attempt any two parts	(5*2=10)	
	a) Elaborate on credit card fraud in the context of cybercrime. What are the various techniques used by cybercriminals to commit credit card fraud, and what measures can be taken to combat it?		CO2
	✓ b) Discuss the issue of software piracy and its legal implications. How does software piracy affect businesses, and what are the international laws in place to tackle this problem? ~		CO2
	✓ c) What is cyberstalking? Discuss the psychological, social, and legal implications of cyberstalking. Provide real-life examples of cases where cyberstalking led to significant consequences. ~		CO2



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**MID-TERM EXAMINATION**  
(Course Name :MCA) (Semester :3<sup>rd</sup>)  
(October, 2024) OFFLINE mode

Subject Code:MCA-205

Subject: Software Testing and Quality

Time : 1 ½ Hours

Maximum Marks : 30

Note: Q. 1 is compulsory.

Q1/		(6,4)	CO
(a)	For a system that provides loans to the applicants when it fulfills the following criteria- the age of applicant is between 18 and 65 and the requested loan amount is between Rs.1,00,000 and Rs.5,00,000. Create test cases using <u>Boundary Value Analysis</u> and <u>Worst case testing</u> .		CO2
(b)	Explain: i) V Lifecycle Model ii) Verification and Validation		CO1
Q2	(Attempt any Two Parts ) UNIT-1	(5,5)	CO
(a)	Consider a program to find the product of two numbers (say x and y) and print the product. Its input is any number from interval [200,400]. Apply <u>equivalence class testing</u> to create test cases.		CO2
(b)	Compare i) Constraints in Cause effect Graph Technique ii) Unit, Integration and System Testing		CO1
(c)	Admission to a professional course is subject to the following conditions: 60 >= Marks in Maths <= 100 50 >= Marks in Physics <= 100 40 >= Marks in Chemistry <= 100 If total marks of an eligible candidate are more than 210, he/she will be eligible for B.Tech(CS) course; otherwise he/she will be eligible for B.Tech(IT) course. The program reads the marks in the three subjects and generates the following outputs: (i) Not Eligible (ii) Eligible to B.Tech(CS) course (iii) Eligible to B.Tech(IT) course Apply Decision table based testing to create test cases.		CO2
Q3	(Attempt any Two Parts ) UNIT-2	(5,5)	CO
(a)	Explain: i) 100% branch coverage ii) Cyclomatic complexity using examples		CO1
(b)	Write a program to input two numbers and print them in ascending order. Apply data flow testing to find all du-paths, all definition paths and definition clear paths and create test cases.		CO2
(c)	Compare black box and white box testing. Consider a program to find if a number is prime or not. Create test cases using one structural testing technique.		CO2

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MID-TERM EXAMINATION

(Course Name : ~~Computer Science~~ MCA) (Semester : 3rd )

(October 2024) OFF LINE mode

Subject Code:MCA 201	Subject: Design and Analysis of Algorithms
Time : 1 ½ Hours	Maximum Marks :30

Note: Q1 is compulsory. Attempt any two parts of Q2 and Q3

Q1		(2.5*4=10)
	a) Write the worst case time complexity of Quicksort	
	b) Briefly explain binary search	
	c) What is dynamic programming?	
	d) What is the activity selection problem	
UNIT I		
Q2	Attempt any two parts	(5*2=10)
	a) Solve the recurrence relation $T(n) = 2T(n/2) + n/\log n$ also Write the complete theorem used to solve the above	
	b) Explain Strassen's Matrix Multiplication with an example	
	c) Show the working of quicksort algorithm on the following array [5,3,8,1,4,6,2]	
UNIT II		
Q3	Attempt any two parts	(5*2=10)
	a) Solve the following Knapsack problem using Greedy Approach $P=[11,21,31,33]$ , $w=[2,11,22,15]$ , $c=40$	
	b) Explain Huffman coding with an example	
	c) Find the parenthesis of multiplication of matrices A,B,C,D having dimensions $20 \times 2, 2 \times 10, 10 \times 15, 15 \times 5$ respectively. What is the optimal number of scalar multiplications	



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**MID-TERM EXAMINATION**  
(Course Name : MCA ) (Semester : 3<sup>rd</sup> )  
(October 2024) OFF LINE mode

Subject Code: MCA-223	Subject: Web Based Programming
Time : 1 ½ Hours	Maximum Marks :30

Note: Q1 is compulsory. Attempt any two parts of Q2 and Q3

Q1	Explain the following in the brief:	(2.5*4=10)
<input checked="" type="checkbox"/>	a) HTML Tags	
<input checked="" type="checkbox"/>	b) Web Server	
<input checked="" type="checkbox"/>	c) Asynchronous	
<input checked="" type="checkbox"/>	d) Data Types in JavaScript	
UNIT I		
Q2	Attempt any two parts	(5*2=10)
<input checked="" type="checkbox"/>	a) Explain the CSS box model with a diagram and provide a practical implementation example.	
<input checked="" type="checkbox"/>	b) Create a webpage that uses all three CSS types (inline, internal, external) and all three CSS selectors (element, class, ID).	
	c) Design a responsive webpage using CSS that displays a grid of images. Ensure the grid layout adjusts based on the screen size, showing more columns on larger screens and fewer columns on smaller screens.	
UNIT II		
Q3	Attempt any two parts	(5*2=10)
	a) Write a JavaScript function that checks if a given input is a string. If it's a string, convert it to uppercase and return the result.	
<input checked="" type="checkbox"/>	b) What is a callback in JavaScript? Give an example of a function that uses a callback to handle data fetched from a server.	
	c) What is the HTML DOM in JavaScript? Provide a simple example where clicking a button gets data from a server and displays it on the webpage.	

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**MID-TERM EXAMINATION**  
(Course Name: MCA, Semester: 3<sup>rd</sup>)  
(October 2024) OFFLINE mode

Subject Code: MCA-203	Subject: Big Data and NoSQL
Time : 1 ½ Hours	Maximum Marks :30

Note: Q1 is compulsory. Attempt any two parts of Q2 and Q3

Q1		(2.5*4=10)	CO Mapping
a)	Explain Big Data system and its salient characteristics taking help of any Industry example.	2.5	CO1
b)	What is a Chubby Lock and GFS and where it is used in Big data system.	2.5	CO4
c)	Explain in brief MongoDB and where it is used in a Big Data system.	2.5	CO1
d)	List down various data storage formats in HDFS and explain any two briefly.	2.5	CO2
UNIT I			
Q2	Attempt any two parts	(5*2=10)	
a)	Answer any one from below. (a1) Explain the use of Big Data in Health Care. Take one example to show how big data in it is handled. Or (a2) Explain the use of Big Data in Web Analytics. Take one example to show how big data in it is handled.	5	CO2
b)	Explain with an help of Industry based example what is Unstructured data in Big Data.	5	CO3
c)	What is Big Table. Explain its architecture with help of a simplified architecture diagram.	5	CO2
UNIT II			
Q3	Attempt any two parts	(5*2=10)	
a)	Explain the various steps involved in analyzing Big data with Hadoop.	5	CO2
b)	Explain what is HDFS and what are it salient points in brief.	5	CO2
c)	Explain the Map-Reduce operation of Hadoop in detail.	5	CO2



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**MID-TERM EXAMINATION**  
(Course Name: MCA) (Semester: 3<sup>rd</sup>)  
(October, 2024) OFF LINE mode

Subject Code: HMC-203

Subject: Financial Reporting and Analysis

Time : 1 ½ Hours

Maximum Marks : 30

Note: Q. 1 is compulsory.

Q1	(2.5*4)	CO
a) What are the benefits of IFRS convergence? 1		1
b) Differentiate between cash discount, trade discount and rebate? 2		2
c) Explain any two qualitative characteristics of financial statements? 1.5		1
d) Which of the following will be shown on the credit side in A's capital a/c: 1. capital introduced 2. drawing made by him 3. further capital introduced 4. profit of the period 1.5		2
<b>UNIT-1</b>		
Q2	(5,5)	CO
a) Explain the conceptual framework given by USA's FASB in short.		1
b) Briefly explain separate accounting entity concept with example. 5		1
c) Differentiate between accounting concepts and accounting conventions? 4		1
<b>UNIT-2</b>		
Q3	(5,5)	CO
a) Record the following journal entries in the books of ABC Ltd.		2
Jan 1 bought goods from Ravi Rs. 9,000 1		
Jan 8 goods worth Rs.5,000 were damaged by fire and insurance company accepted claim of Rs.3000 and cash is received from the insurance company.		
Jan 9. purchased goods from A of Rs.50,000 at trade discount 10%. The amount was paid at the time of purchase 1		
Jan 20 Shyam is declared insolvent. Received from his official receiver 50 paisa in a rupee on a debt of Rs.5,000. 1		
Jan 30 goods returned to Ravi Rs 3,500 1		

b) From the following transactions, pass the necessary journal entries in the books of Rahul & Co.  
2021

✓ Jan 1	Rahul started business with cash	100,000
✓ Feb 5	purchased goods	25,000
✓ Feb 20	sold goods	30,000
✓ May 10	purchased goods from S	18,000
✓ May 25	sold goods to R	20,000
✓ June 15	cash given to S	18,000
✓ Oct 28	cash received from R	20,000
✓ Dec 31	Paid salaries	5,000

c) Prepare Balance sheet of A as at 31 march 2023 from the following information:

Capital	₹90,000
Drawings	₹8,000
Cash in hand	₹11,200
Bills receivable	₹5300
Creditors	₹28,800
Debtors	₹18,000
Bills payable	₹3500
Machinery (as on 1 April'22)	₹85,000
Furniture (as on 1 April'22)	₹21,000
Depreciation on machinery	₹8500
Depreciation on furniture	₹2100
Closing stock	₹15,400
Net profit as per profit and loss account	₹31,000





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ANSWER BOOK (16 PAGES)

PRACTICAL / MID-TERM EXAMINATION

E-309  
MCA - (4)

507008

Enrollment No. 07104092023

Examination Mid-Term Date 28 October 2024

Programme MCA

Laboratory / Subject

Principles of Computing & Analysis Paper Code HNC-202

Marks Obtained (in figures)

(in Words)

Signature of the Student

Talari

Signature of Invigilator

Shukla

Signature of External Examiner

Signature of Internal Examiner

(For Official Use Only)

Ques. No.	Marks Obtained					Total
	(a)	(b)	(c)	(d)	(e)	
1	2	1	2	2		8
2	5		2			7
3	4	5				9
4						
Total Marks						25

Total Marks in Words

Twenty five

Name of the Examiner

Prasanna

Signature of the Examiner with date

28/10/24