PAPER ID-411614

Subject Code: RCAI101

Roll No: | | | | | | | | | | | | | |

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
PROGRAMMING IN C

Time: 3 Hours ***Total Marks: 70***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2*7 = 14**

a.	Briefly differentiate between While and do-While loop.
b.	Differentiate between local and global variable.
c.	Explain type conversion in C.
d.	Mention any two advantages of using functions in C.
e.	Discuss the advantages of algorithm.
f.	Compare and contrast between compiler and interpreter.
g.	Mention the rules for variable naming in C.

SECTION B

2. Attempt any *three* of the following: **7*3 = 21**

a.	Draw a flowchart and write the algorithm for finding GCD of two numbers.
b.	Write a program in C to calculate the sum of digits of a 3 digit number using arithmetic operators. **(Note: No loop should be used)**
c.	Write a Program to print the following pattern. * *** ***** *******
d.	Write a program in C to print all Armstrong numbers from 1 to 500.
e.	Explain the call-by-value mechanism by using suitable example.

SECTION C

3. Attempt any *one* part of the following: **7*1 = 7**

a.	What is a Computer? Draw a block diagram of a Computer and explain each of its components.
b.	Describe the various problem solving techniques.

4. Attempt any *one* part of the following: **7*1 = 7**

a.	What are various data types used in C language? Illustrate their declaration and usage.
b.	Explain the standard input/output functions in C.

PAPER ID-411614

Roll No: | | | | | | | | | | | | | |

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
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5. Attempt any *one* part of the following: 7*1 = 7

a.	Explain the role of precedence and associativity of an operator? Solve the expression based on operator precedence: 1+2*3/6-4
b.	Explain logical operators with examples.

6. Attempt any *one* part of the following: 7*1 = 7

a.	Write a C program to find the roots of a quadratic equation using switch statement.
b.	Write a C program which reads 2 integer numbers and an operator and finds their sum, difference, multiplication and division separately based on the value of operator entered.

7. Attempt any *one* part of the following: 7*1 = 7

a.	Write a C program using a function **prime_check()**, to check whether a given number is prime. The function returns 1 if the number is prime or 0 otherwise.
b.	Explain the purpose of storage classes? Explain all storage classes with suitable examples.

Roll No: | | | | | | | | | | | | | |

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
OFFICE AUTOMATION

Time: 3 Hours ***Total Marks: 70***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2*7 = 14

a.	How can you insert dates into the footer in the PowerPoint presentation?
b.	Name the commonly used MS Office tools?
c.	Steve draws a picture on the computer. But he is not satisfied with he is drawings. So he wants to change its color and edit the picture. Which programs he should use to do the same and why?
d.	Describe Graphic database.
e.	What is the purpose of Recycle Bin? How it helps to prevent accidental deletes?
f.	Define Data Redundancy.
g.	What do you mean by Page Margins?

SECTION B

2. Attempt any *three* of the following: 7*3 = 21

a.	Write shortcut keys for the following i) To go to the next cell. ii) To edit a cell iii) To undo the editing of contents in a cell iv) To cut cell contents v) To copy cell contents
b.	How is cross-referencing created in MS Word?
c.	Explain the various Excel formatting tips and techniques.
d.	Explain the use of Excel's function wizard. Explain some of the Mathematical and Text function in Excel.
e.	Explain the followings: (i) Reports , (ii) Forms

SECTION C

3. Attempt any *one* part of the following: 7*1 = 7

a.	What is Cell referencing? Differentiate between relative and absolute cell reference.
b.	What is slide timing? What effect does it create at the time of slide show? Differentiate between automatic slide show and normal slide show.

4. Attempt any *one* part of the following: 7*1 = 7

a.	Explain the Linking of Importing and Exporting Records in MS Access.
b.	Explain the procedure to insert photo, video and sound in a power point presentation.

5. Attempt any *one* part of the following: 7*1 = 7

a.	Describe the following terms- i.) Microsoft Excel ii.) Worksheet iii.) Sheet

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
OFFICE AUTOMATION

	iv.) Cell v.) Active Cell vi.) Cell Range
b.	Explain the procedure to create and delete custom list.

6. Attempt any *one* part of the following: 7*1 = 7

a.	Explain in detail about following features of MS word. i.) Formatting of documents ii.) Auto correct iii.) Bullet and number list
b.	Explain all steps involved in making and saving a file in MS word.

7. Attempt any *one* part of the following: 7*1 = 7

a.	How to insert a picture into a master slide and how are the automatic slide numbering done inside your presentation?
b.	Is it possible to insert video into a word document? If yes how can the users insert video into a word file?

PAPER ID-411463

Subject Code: RCAI103

Roll No: | | | | | | | | | | | | | |

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
FUNDAMENTALS OF COMPUTER

Time: 3 Hours ***Total Marks: 70***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2*7 = 14**

a.	Why computer is known as data processing system?
b.	Name the few protocols used for email on the internet.
c.	Differentiate between LAN, WAN and MAN.
d.	Why operating system is important for computer system?
e.	What is an IP address? Write down the different classes of IP Address.
f.	How can you measure the quality of algorithm?
g.	Define Mainframe computer? Give the name of any one mainframe computer.

SECTION B

2. Attempt any *three* of the following: **7*3 = 21**

a.	Draw a block diagram of basic components of a computer system. Explain each component of computer system.
b.	Define algorithm and its characteristics. Write algorithm to find out the factorial of a given number?
c.	What is an Operating System? Explain all the types of operating systems.
d.	Explain different functions of each layer of the OSI model with the help of diagram.
e.	Discuss the architecture and functioning of the internet.

SECTION C

3. Attempt any *one* part of the following: **7*1 = 7**

a.	Explain different generations of computers.
b.	Write short notes on: (a) FTP (b) SMTP (c) TELNET

4. Attempt any *one* part of the following: **7*1 = 7**

a.	Explain different topologies in computer networks with the help of diagram.
b.	What is flow chart? Draw a flow chart for find out maximum no. among three numbers.

PAPER ID-411463

Roll No: | | | | | | | | | | | | | |

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
FUNDAMENTALS OF COMPUTER

5. Attempt any *one* part of the following: 7*1 = 7

a.	What do you mean by internet? Explain main characteristics and services of internet.
b.	Define and differentiate between uniprogramming and multiprogramming system. What are their relative advantages and disadvantages?

6. Attempt any *one* part of the following: 7*1 = 7

a.	Explain the term Multimedia and different component of multimedia with the help of an example.
b.	Write four differences between each of the following: (a) impact and nonimpact printers (b) volatile and non-volatile memory

7. Attempt any *one* part of the following: 7*1 = 7

a.	Write four differences between each of the following: (a) Router and Gateway (b) Packet Switching and Circuit Switching
b.	What is Cache Memory? How it reduces the mismatch of processor and main memory speed?

RCAI103 CORRECTION 14.03.21 MORNING

Kindly read question 4(b) as

Describe the difference between HDD, SSHD, and SSD.

PAPER ID-411883

Subject Code: RCAI104

Roll No: | | | | | | | | | | | | | |

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
BUSINESS COMMUNICATION

Time: 3 Hours ***Total Marks: 70***

Notes:

- *Attempt all Sections and Assume any missing data.*
- *Appropriate marks are allotted to each question, answer accordingly.*

SECTION-A	Attempt **All** of the following Questions in brief	Marks**(7X2=14)**
Q1(a)	What is electronic writing process?	
Q1(b)	What are Semantic Barriers?	
Q1(c)	Describe Dictaphone recording in business communication.	
Q1(d)	Mention objectives of communication.	
Q1(e)	What role does Grapevine communication play in an organizational structure?	
Q1(f)	Differentiate between Demonstration & Dramatization?	
Q1(g)	What is meant by minutes of a meeting?	

SECTION-B	Attempt **ANY THREE** of the following Questions:	Marks**(3X7=21)**
Q2(a)	What do you understand by communication? Discuss the process of communication. Differentiate between general and business communication.	
Q2(b)	Suppose you are a reporter and you cover current issues. Write a news Report on any current happening, on the topic of your own choice.	
Q2(c)	What do you understand by barriers to communication?	
Q2(d)	What is Listening comprehension and how can this skill be improved in a learner? How do you determine fluency in Listening?	
Q2(e)	What are the seven Cs of communication?	

SECTION-C	Attempt **ANY ONE** of the following Questions:	Marks **(1X7=7)**
Q3(a)	What is a resume? Prepare a resume along with the covering letter to suit your purpose of pursing the employers for job.	
Q3(b)	What are the essentials of communication which cast effect on others?	

SECTION-C	Attempt **ANY ONE** of the following Questions:	Marks **(1X7=7)**
Q4(a)	What is the importance of Group Discussion in an interview or for taking admission in any professional course? How does it act as an aid in comprehension of an individual's personality?	
Q4(b)	Write a short note on "My experience of travelling by the city bus".	

SECTION-C	Attempt **ANY ONE of the** following Questions:	Marks **(1X7=7)**
Q5(a)	What is a report? How many types of reports are there? Describe the structure of a business report.	
Q5(b)	Write two situations where oral communication is taking place. You may present it in the form of dialogue.	

SECTION-C	Attempt **ANY ONE** of the following Questions:	Marks **(1X7=7)**
Q6(a)	Language acts as an effective tool of communication. Explain.	
Q6(b)	What is the difference between Credit letter & Inquiry Letters	

SECTION-C	Attempt **ANY ONE of the** following Questions:	Marks **(1X7=7)**
Q7(a)	Write a complaint letter to The Jack & Jill Company making a complaint regarding the clothes you bought for your 6 months old nephew. Also inform about the inconvenience you got through and that you want the products to be replaced.	
Q7(b)	Briefly tell about the components which are discussed in minutes of meeting. What is the role of agenda in it?	

PAPER ID-411356

Roll No: | | | | | | | | | | | | | |

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
MATHEMATICS FOR MCA

Time: 3 Hours ***Total Marks: 70***

Notes:

- *Attempt all Sections and Assume any missing data.*
- *Appropriate marks are allotted to each question, answer accordingly.*

SECTION-A	Attempt **All** of the following Questions in brief	Marks **(7X2=14)**
Q1(a)	Evaluate: $\begin{vmatrix} 2 & -1 & 5 \\ 6 & -3 & 4 \\ -8 & 2 & 1 \end{vmatrix}$	
Q1(b)	Find the value of λ for which the vectors $(1, -2, \lambda)$, $(2, -1, 5)$ and $(3, -5, 7\lambda)$ are linearly dependent.	
Q1(c)	If $y = A \sin nx + B \cos nx$, prove that $\frac{d^2y}{dx^2} + n^2y = 0$.	
Q1(d)	Find the P.I. of $(D^2 + 4)y = cos2x$.	
Q1(e)	Classify the P. D. E. $4u_{xx} - 3u_{xy} + 2u_{yy} - 7u_x + u_y = 0$.	
Q1(f)	Find the Laplace Transform of $\frac{sinat}{t}$. Does the Laplace Transform of $\frac{cosat}{t}$ exists?	
Q1(g)	State Convolution Theorem.	

SECTION-B	Attempt **ANY THREE** of the following Questions	Marks **(3X7=21)**
Q2(a)	Find the inverse of the matrix M by applying elementary transformations $M = \begin{bmatrix} 0 & 2 & 1 & 3 \\ 1 & 1 & -1 & -2 \\ 1 & 2 & 0 & 1 \\ -1 & 1 & 2 & 6 \end{bmatrix}$	
Q2(b)	(i) State and prove Euler's Theorem on homogeneous function. ii) If $u = f(y - z, z - x, x - y)$, prove that $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} + \frac{\partial u}{\partial z} = 0$.	
Q2(c)	Solve : $\frac{dx}{dt} = 3x + 8y$, $\frac{dy}{dt} = -x - 3y$ $with$ $x(0) = 6$, $y(0) = -2$.	
Q2(d)	Draw the graph and find the Laplace transform of the triangular wave function of period 2c given by $f(t) = \begin{cases} t, & 0 < t \le c \\ 2c - t, & c < t < 2c \end{cases}$	
Q2(e)	Using Laplace transformation, solve the differential equation $\frac{d^2x}{dt^2} + 9x = \cos 2t$, if $x(0) = 1$, $x\left(\frac{\pi}{2}\right) = -1$.	

SECTION-C	Attempt **ANY ONE** following Question	Marks **(1X7=7)**
Q3(a)	Investigate , for what values of λ and μ do the system of equations $x + y + z = 6$, $x + 2y + 3z = 10$, $x + 2y + \lambda z = \mu$ have (i) no solution (ii) unique solution (iii) infinite solutions?	
Q3(b)	Find the eigen values and eigen vectors of the matrix $A = \begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}$.	

SECTION-C	Attempt **ANY ONE** following Question	Marks **(1X7=7)**
Q4(a)	If $y = e^{mcos^{-1}x}$, show that $(1 - x^2)y_{n+2} - (2n + 1)xy_{n+1} - (n^2 + m^2)y_n = 0$.	
Q4(b)	If $y_1 = \frac{x_2x_3}{x_1}$, $y_2 = \frac{x_1x_3}{x_2}$, $y_3 = \frac{x_1x_2}{x_3}$, then show that $\frac{\partial(y_1, y_2, y_3)}{\partial(x_1, x_2, x_3)} = 4$.	

PAPER ID-411356

Roll No: | | | | | | | | | | | | | |

MCA-INT
(SEM I) THEORY EXAMINATION 2021-22
MATHEMATICS FOR MCA

SECTION-C	Attempt **ANY ONE** following Question	Marks **(1X7=7)**
Q5(a)	Solve : $(D^2-1)y = 2x^4 - 3x + 1.$	
Q5(b)	Solve: $r - 2s = sinx.\cos 2y$	

SECTION-C	Attempt **ANY ONE** following Question	Marks **(1X7=7)**
Q6(a)	Find the Laplace Transform of the function $F(t) = \begin{cases} 1, & 0 \le t < 1 \\ t & 1 \le t < 2 \\ t^2 & 2 \le t < \infty \end{cases}$.	
Q6(b)	Express the function $F(t) = \begin{cases} t-1 & 1 < t < 2 \\ 3-t & 2 < t < 3 \end{cases}$ in terms of unit step function and obtain its Laplace transformation.	

SECTION-C	Attempt **ANY ONE** following Question	Marks **(1X7=7)**
Q7(a)	Find the inverse Laplace transform of function $\frac{14p+10}{49p^2+28p+13}$.	
Q7(b)	Use convolution theorem to evaluate $L^{-1}\left(\frac{p}{(p^2+4)^2}\right)$.	