RV COLLEGE OF ENGINEERING
(An autonomous Institution affiliated to VTU, Belagavi)
DEPARTMENT OF MATHEMATICS

CIE – I, FIRST SEMESTER, 2021

MASTER OF COMPUTER APPICATIONS

COURSE: MATHEMATICAL FOUNDATION FOR COMPUTER APPLICATIONS

COURSE CODE: 20MAT11
MARKS: 50

DATE: 17.02.2021
TIME: 09.30AM – 11.00AM

Q. NO	PART - B	M	CO	BT L
1.	Using the laws of set theory prove that for any two non-empty subsets A and B of the universal set U, $\overline{A \Delta B} = \bar{A} \Delta B = A \Delta \bar{B}$.	10	3	3
2.	a) Out of 50 students in a classroom: 30 know Pascal, 18 know Fortran, 26 know COBOL, 9 know both Pascal and Fortran, 16 know both Pascal and COBOL,8 know both Fortran and COBOL, 47 know at least one of the three languages. How many students know all three languages and how many students know none of these languages?	5	2	2
	b) Let A = {1, 2, 3, 4} and let R be a relation on A whose matrix is given by $M_R = \begin{bmatrix} 1 & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 \\ 1 & 1 & 1 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}$. Show that M_R is transitive.	5	1	2
3.	a) Given a set S = {2, 3, 6, 12, 24, 36}, define a relation / (division) on S. Show that (S, /) is a poset and draw its Hasse Diagram.	6	3	1
	b) Show that the relation R on the set A of points in a plane given by R = {(P, Q): distance of the point P from the origin is same as the distance of the point Q from the origin}, is an equivalence relation.	4	3	2
4.	Let $A = \mathcal{R} - \left\{\frac{7}{5}\right\}$ and $B = \mathcal{R} - \left\{\frac{3}{5}\right\}$, If $f: A \to B$ and $g: B \to A$ defined by $f(x) = \left(\frac{3x+4}{5x-7}\right)$ and $g(x) = \left(\frac{7x+4}{5x-3}\right)$ then find (i) $f \circ g$ (ii) $g \circ f$ (iii) f^2 (iv) g^2.	10	2	2
5.	Show that the function $f: A \to A$ where is $A = R - \left\{\frac{2}{3}\right\}$ defined as $f(x) = \left(\frac{4x+3}{6x-4}\right)$ is bijective. Hence find $f^{-1}(x)$ and obtain (i) $f^{-1}(2)$ (ii) $f^{-1}(-1)$ (iii) $f^{-1}(-2)$.	10	2	3

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RV College of Engineering®, Bengaluru
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Department of Master of Computer Applications

CONTINUOUS INTERNAL EVALUATION (CIE)
FIRST SEMESTER –FEBRAUARY 2021
TEST – I

COURSE CODE: 20MCA15
COURSE TITLE: WEB APPLICATION PROGRAMMING

Answer All Questions

Time: 90 min **Max. Marks: 50**

Faculty In charge: Dr.Vishal C & Dr.Preethi N Patil

Instructions to students: Answer 5 full questions. All questions carry equal marks

Q.No	Question	Marks	CO	BTL
1a.	Define the following terms a)MIME c) Web Server d) Internet	2+2+2	CO1	L2
1b.	Justify how HTML 4.01 is different from HTML5 in building a web application.	4	CO1	L3
2a.	Analyze the different types of methods used in HTTP protocol communication from client to the server	4+4	CO1	L3
2b.	Identify any two types of target attributes and values used in anchor tags of HTML5.	2	CO2	L2
3a.	Analyze the different types of HTML5 form tags and CSS selectors used in designing student bio-data with relevant fields like Name, Address, Gender, Qualification, provision for Uploading photo and phone number.	8	CO3	L3
3b	Compare and Contrast any two features of private and public Internet protocol	2	CO1	L2
4a.	Investigate how different types of LISTS can be used for building a web portal.	2+2+2	CO3	L4
4b.	Illustrate DNS with a neat diagram	1+3	CO2	L2
5a.	Write a html5 code for the following table and apply CSS for the same	4	CO4	L3
5b.	Analyse the different types of semantic elements used in developing employee information portal.	6	CO4	L3

Day	9:00 AM - 1:30 PM	2:15 PM – 4:45 PM
Mon	WAP	WAP LAB
Tue	CN	CN LAB
Wed	Extra Circular Activity	

R,V COLLEGE OF ENGINEERING

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Department of Master of Computer Applications

CONTINUOUS INTERNAL EVALUATION (CIE)

FIRST SEMESTER – February 2021

TEST – 1

Course Code : 20MCA12 **Course Title : Linux Shell Scripting**

Time: 90 Minutes **Max.Marks: 50**

Instructions to students: mention the assumptions while writing the command output

Q.No	Questions	Marks	CO	BTL
1	Summarize the Layer approach of Unix Architecture	5	CO3	L2
2	List the functionalities of the kernel and explain role of kernel	5	CO1, CO2	L1
3	Describe the Unix file system directory structure with detailed explanation of any five directories in a Unix File System.	5	CO2	L2
4.	Discuss the role and importance of an Inode in Unix File System	5	CO2	L1
5	Compare the Absolute and Relative file permission setting techniques with examples (minimum 5 commands and output should be used).	5	CO1, CO3	L3
6	Describe any 5 general purpose utility commands with examples.	5	CO1	L2
7	Demonstrate the process of configuring the git, git repository initialization, staging the files, tracking files and committing the changes to the files usitng git	5	CO1, CO2	L3
8	Write the commands to achieve the following a. clone a repository from the gihub.com using pull b. make changes to the cloned repository c. track the changes done to local repository d. commit the changes to the repository e. push the updated local repository to the remote repo on github.com	5	CO1, CO2	L3
9	List different types of shells and the default environment variables available with BASH **OR** Explain every field of the standard out put of the command : **ls -al**	5	CO1	L1
10	Write a BASH script to create a directory move to the created directory change the owner of one of the file in the moved directory change the group of the directory in which owner was changed create hard and soft link to the files in the directory list all the properties of the files in the directory	5	CO1, CO3	L3

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DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
CONTINUOUS INTERNAL EVALUATION (CIE)
M.C.A FIRST SEMESTER – FEB 2021
Test - 1
Computer Networks
COURSE CODE: 20MCA12

Time: 90 min **Answer All Questions** **Max. Marks: 50**

Q.No	Question	Marks	CO	BTL
1 a)	Explain Computer Networks. Discuss the uses of computer networks.	4	CO1	L2
b)	Explain OSI Reference Model in detail	6	CO1	L2
2 a)	Distinguish between Connectionless and Connection-oriented service	2	CO2	L2
b)	Give an overview of architecture of the Internet which has changed to a great deal along with its exponential growth.	8	CO2	L2
3 a)	Discus the significances of Framing in computer networks.	3	CO1	L2
b)	Assume the sequence of bytes received from Network layer is 1,2,3,4,5,6,7,8,9,0,1,2,3,4,5,6 . Byte count framing method is adopted in DLL and the size of the frames is 5,8,5,8 respectively. Construct the frames accordingly and analyze the effect of a bit change in the count byte.	7	CO3	L3
4 a)	What is digital modulation? Consider a bit stream 10110010, encode this bit stream in NRZ, NRZI, Manchester encoding and [illegible] Manchester encoding method.	5	CO4	L2
b)	A channel is shared among 4 sources using time division multiplexing the input bit stream is as shown in the figure below 00000001 1000 → 10101010 0111 → 10100000 → 10100111 → TDM o/p frames of 16 bits If 4 bits are taken from each input, what is the output stream in the channel.	5	CO4	L3
5 a)	Identify the design issues related to the data link layer	3	CO2	L1
b)	Explain bit stuffing? Assume the sequence of bits to be transmitted is 01101[1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1]10010 include 0 When there is five consecutive incoming 1 bits respectively. Construct the frames accordingly and analyze the effect of a bit change in stuffing and destuffing	7	CO3	L4

Course Outcomes

CO1: Understand fundamental underlying principles of computer networking and enumerate the layers, protocols and routing algorithms

CO2: Identify the design issues, services, interfaces, protocols and flow of data in computer networks

CO3: Implement the protocols and services designed for physical, data link, network, transport and application layers

CO4: Evaluate the principles and protocols in computer networking

Marks Distribution

L1, L2- 26 L3,L4-24 L5,L6-Nil CO1-16 CO2-10 CO3-14 CO4-10

RV COLLEGE OF ENGINEERING
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DEPARTMENT OF MATHEMATICS

CIE – II, FIRST SEMESTER, 2021
MASTER OF COMPUTER APPICATIONS

RICE20MCA1B9

COURSE: MATHEMATICAL FOUNDATION FOR COMPUTER APPLICATIONS

COURSE CODE: 20MAT11 DATE: 17.03.2021
MARKS: 50 TIME: 10.00AM – 11.30AM

Q. NO	PART - B	M	CO	BT L
1.	a) Show that $\sim[\sim[(p \vee q) \wedge r] \vee \sim q] \equiv q \wedge r$ through the laws of logic.	04	2	2
	b) Construct the truth table for the compound proposition $[(p \vee q) \wedge (p \rightarrow r) \wedge (q \rightarrow r)] \rightarrow r$ and write your conclusion.	06	2	1
2.	Establish the validity of the argument given below for the primitive statements p, q, r, s, t, u with appropriate reasons: $p \rightarrow q$ $q \rightarrow (r \wedge s)$ $\sim r \vee (\sim t \vee u)$ $p \wedge t$ $\therefore u$	10	3	4
3.	a) Simplify the compound proposition $\neg[\neg[(p \vee q) \wedge r] \vee \neg q]$, where p, q and r are primitive statements. Truth	05	3	3
	b) Give a direct proof of the statement: if $n = ab$, where a and b are positive integers, then $a \leq \sqrt{n}$ or $b \leq \sqrt{n}$.	05	3	2
4.	a) State the converse, inverse, and contrapositive of the compound proposition: "If ABC is a triangle then $\|AB\|^2 + \|BC\|^2 = \|AC\|^2$".	04	1	2
	b) Show that the premises: A student in Section A of the course has not read the book. Everyone in Section A of the course passed the first exam. Imply the conclusion: Someone who passed the first exam has not read the book.	06	4	2
5.	a) Calculate the mean and standard deviation for the following data:	04	2	3
	b) The following data were obtained in an experiment. Fit a straight line of the form $y = a + b\,x$ by the method of least squares.	06	2	2

x	6	7	8	9
f	3	6	9	13

x	5	10	15	20	25
y	16	19	23	26	30

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R.V COLLEGE OF ENGINEERING

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Department of Master of Computer Applications

CONTINUOUS INTERNAL EVALUATION (CIE)

MCA FIRST SEMESTER – March 2021

TEST – II

20MCA12 Linux Shell Scripting

Faculty : Dr BRP and Dr DK

Time: 90 Minutes **Max.Marks: 50**

Instructions to students: Mention the assumptions while writing the command output

Answer all Five questions

Q.No	Questions	Marks	CO	BTL
1a	Describe how the following character class options are expanded by the shell with example for each. * ? [ijk] [x-z] [!ijk]	5	CO3	L2
1b	Demonstrate the standard input and output redirections associated with shell using wc and cat commands OR Demonstrate the usage of file descriptors associated with any two standard streams and shell with examples	5	CO3	L1
2a	Explain the commands that will use standard input or standard output OR Explain the commands that will not use standard input or standard output	5	CO2	L1
2b	Prove that the Unix pipes reduces efforts while handling multiple standard input and output stream in a pipeline with examples OR Prove that tee command can be more efficient in handling multiple standard input and standard output with examples	5	CO4	L4
3a	Considering an employee database with 4 fields empid, empname, empdept, empsalary Demonstrate sorting the employee records based on primary key and secondary using sort command with output.	5	CO2, CO3	L3
3b	Summarize the process of extracting particular column or fields using cut command	5	CO2, CO3	L3
4a	List and demonstrate any 5 BRE character class usages along with grep command	5	CO3	L3
4b	List and demonstrate any 5 options used with grep command	5	CO3	L3
5a	Prove that sed's 'address action' internal commands supports line addressing **or** context addressing **or** substitution(prove any one only)	5	CO2, CO3	L4
5b	Prove that Extended Regular Expressions are supported by grep/egrep	5	CO2, CO3	L4

Course Outcomes :

After going through this course, the student will be able to:

CO1: Understand how to write shell scripts from basic to advanced level

CO2: Analyze and Identify high-level steps such as verifying user input to automate repetitive tasks

CO3: Apply shell scripting techniques and standards using filters for pattern matching on plain text data and variety of system log files

CO4: Develop effective and interactive scripts using functional blocks, operating system and networking utilities to manage complex and repetitive tasks in real time scenarios

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DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
Test - II
OBJECT ORIENTED PROGRAMMING
COURSE CODE –20MCA14
Semester – I Sec - A& B II Internals March 2021

Answer All Questions

Time: 90 min **Max. Marks: 50**

Q. no	Question	Marks	CO	BTL
1.	a)Define the following terms i) Encapsulation ii) Destructor iii) Constructor iv)Inheritance b)Demonstrate the class member visibility in Object Oriented context with a python script	4 6	CO1 CO1	L2 L2
2.	a) Discuss overloading concepts in Python b)Write a program to demonstrate single inheritance in python to find the area of a triangle	5 5	CO2 CO3	L2 L3
3.	a) What is meant by constructor in OOPs. Develop a python module to demonstrate how constructors are used in python to initialize objects of Employee class with attributes name, EMPID, Basic salary and Deductions. Perform the operations to display the net salary b) Apply importing concepts in modules to exchange the values of two numbers with input validation	6 4	CO3 CO3	L3 L3
4.	a)Analyse the difference in creating an array in Numpy using array() function and arrange() function using an example b)What are modules in python? Apply various techniques to implement modules in python	6 4	CO4 CO1	L4 L2
5.	a)Explain how packages can be used in Python with an example program b)Analyse the difference between multiple and multilevel inheritance with suitable example	4 6	CO1 CO1	L2 L3

Course Outcomes
After going through this course, the student will be able to:
CO1: Understand the basic concepts of object oriented programming
CO2: Identify and apply relevant object-oriented concepts in any real world scenario
CO3: Utilize object-oriented concepts to solve any real world problem
CO4: Analyze solutions using OOPs concepts for real world applications

L1,L2- 23	L3,L4- 27	L5,L6-0	CO1-24	CO2- 05	CO3-15	CO4-06

Humanities and Social Sciences Board

104

Date	19th March 2021	Maximum Marks	50
Course Code	20HSS16	Duration	120 Mins
Semester	I Semester- MCA		
PROFESSIONAL PRACTICE			

Sl. No.	Questions	M	BT	CO
Q.1a.	How many of the following numbers are divisible by 3 but not by 9. 4320, 2343, 3474, 4131, 5286, 5340, 6336, 7347, 8115, 9276	2	2	1
1b.	What is the units digit in the product (33^65 * 66^59 * 77^71)?	4	3	1
1c.	The number of consecutive zeros at the end of 77! x 42! is	4	3	1
Q.2a.	In how many different ways can the letters of the word 'OPTICAL' be arranged so that the vowels always come together?	2	2	1
2b.	How many 3 digit numbers can you form using 2,3,5,6,7 and 9, which are divisible by 5 and none of the digits repeat?	4	3	1
2c.	In an examination 10 questions are to be answered choosing at least 4 from each of part A and part B. If there are 6 questions in part A and 7 in part B, in how many ways can 10 questions be answered ?	4	3	1
Q.3a.	If a man walks to his office at ¾ of his usual rate, he reaches office 1/3 of an hour late than usual. What is his usual time to reach office?	2	2	1
3b.	Two trains of equal length, running with the speeds of 60 and 40 kmph, take 50 seconds to cross each other while they are running in the same direction. What time will they take	4	3	1

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	to cross each other if they are running in opposite directions?			
3c.	A train leaves Delhi at 9 a.m. at a speed of 30 kmph. Another train leaves at 2 p.m. at a speed of 40 kmph on the same day and in the same direction. How far from Delhi, will the two trains meet?	4	3	1
Q.4a.	What are the different ways in which you can motivate your team members?	2	1	2
4b.	Compare and contrast extrinsic and intrinsic motivation.	4	3	2
4c.	Draw a diagram of Maslow's Hierarchy of Needs and explain each level.	4	2	2
Q.5a.	List any 4 types of oral communication.	2	1	2
5b.	List out and explain the points you need to keep in mind for each of them	4	1	2
5c.	List and explain 5 differences between Hearing and Listening.	4	1	2

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max Marks	4	6	16	24	2	16	32	0	0	0

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DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
CONTINUOUS INTERNAL EVALUATION (CIE)
MCA FIRST SEMESTER – MARCH 2021
Test - II

Course Title: Computer Networks
Course Code: 20MCA13

Time: 90 min **Answer All Questions** **Max. Marks: 50**

Q.No	Question	Marks	CO	BTL
1 a)	What are the two basic strategies of dealing with errors? Explain.	4	CO2	L1
b)	Apply CRC for the given data and generator polynomial and arrive at the frame to be sent by the sender with checksum Data frame-100100 Generator Polynomial: $x^3 + x^2 + 1$	6	CO3	L3
2 a)	Define:Piggybacking.	2	CO2	L1
b)	Describe the states of sending and receiving windows for three bit sequence number during the following cases applying sliding window protocol. (i) Initial state (b)After the first frame has been sent. (c) After the first frame has been received. (d) After the first acknowledgement has been received.	8	CO2	L2
3 a)	Analyze the working of Go Back N and Selective repeat protocols for the following events (i) Network Layer ready (ii) Frame arrival (iii) Checksum error (iv) Timeout	10	CO2	L2
4 a)	Analyze the throughput of Pure ALOHA and slotted ALOHA protocols for three different values of G(attempts per unit time)	6	CO3	L4
b)	Evaluate the probability of successful transmission for a k(attempt to transmit) value 4 and G(attempts per unit time)=2.0	4	CO4	L3
5 a)	Describe the working of CSMA with collision detection.	5	CO2	L2
b)	Discuss the Ethernet frame format.	5	CO1	L2

Course Outcomes

CO1: Understand fundamental underlying principles of computer networking and enumerate the layers, protocols and routing algorithms

CO2: Identify the design issues, services, interfaces, protocols and flow of data in computer networks

CO3: Implement the protocols and services designed for physical, data link, network, transport and application layers

CO4: Evaluate the principles and protocols in computer networking

Marks Distribution

L1, L2- 34 L3,L4-16 L5,L6-Nil CO1-5 CO2-29 CO3-12 CO4-4

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Department of Master of Computer Applications

CONTINUOUS INTERNAL EVALUATION (CIE)
FIRST SEMESTER –FEBRAUARY 2021
CIE – II

COURSE CODE: 20MCA15
COURSE TITLE: WEB APPLICATION PROGRAMMING

Time: 90 min ***Answer All Questions*** **Max. Marks: 50**

Faculty In charge: Dr.Vishal C & Dr.Preethi N Patil

Instructions to students: Answer 5 full questions. All questions carry equal marks

Q No	Questions	Marks	CO	BTL
1a	Describe why Bootstrap is a promising framework for web design	05	CO2	L2
1b	With syntax and diagram, Describe the basic grid structure of Bootstrap. With the help of a code snippet, illustrate how to modify its structure for a medium device to display 2 rows. 1st row has 2 columns and 2nd row has 3 columns	2+3	CO1, CO3	L1, L3
2a	Define Jumbotron. Illustrate the effects of applying jumbotron through (i) .container, (ii) .container-fluid (use code snippets and sketch the output)	1+4	CO1, CO3	L1, L3
2b	With example show how to make an image responsive in bootstrap. Explain various classes of Bootstrap used in displaying heading.	2+3	CO2, CO1	L2, L1
3a	Explain contextual classes. Demonstrate by applying them to panel/cards headings	1+4	CO1, CO3	L1, L3
3b	Explain Bootstrap collapsible and navbars with examples and usage	2+3	CO1	L1
4a	Explain any two Bootstrap variables and mixins with syntax and examples	2+2	CO1	L1
4b	Define a "well-formed XML" and "valid XML"	2	CO1	L1
4c	Show how namespace is used to resolve name conflicts in xml	4	CO3	L3
5a	Design and demonstrate internal and external DTD for validating the student information	4	CO4	L4
5b	Analyse the below xml structure and design xml-schema validator <?xml version="1.0" encoding="UTF-8"?> <student> <name>John Mathew</name> <age>25</age> <addr> <city>New York</city> <pincode>53333</pincode> </addr> <ph>9343434</ph> </student>	6	CO4	L4

Course Outcomes:
After going through this course, the student will be able to:

CO1: Illustrate the fundamentals of web programming
CO2: Apply the mark-up and layout design to build web applications
CO3: Analyze appropriate content and scripting language concepts
CO4: Implement event handling and visualization techniques for dynamic real world environment

RV COLLEGE OF ENGINEERING
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DEPARTMENT OF MATHEMATICS
CIE – III, FIRST SEMESTER-2021
MASTER OF COMPUTER APPICATIONS
MATHEMATICAL FOUNDATION FOR COMPUTER APPLICATIONS (20MAT11)

DATE: 19.04.2021 **TIMES: 09.30 AM – 11.00 AM**

MARKS: 50

Q.NO			M	CO	BTL
1	a	Estimate the chlorine residual in a swimming pool after it has been treated with chemicals by fitting an curve of the form $y = AB^x$ using least square method to the following data. Number of hours X: 2, 4, 6, 8, 10, 12 Chlorine residual part/ million Y: 1.8, 1.5, 1.4, 1.1, 1.1, 0.9	6	3	4
	b	Three machines A, B, C produces 50%, 30% and 20% of the items in a factory. The percentage of defective outputs is respectively 3%, 4% and 5%. An item is selected at random. What is the probability that it is defective? What is the probability that it is from machine A?	4	2	2
2		The following data is obtained in the study of the number of absentees and the final grades of the five students in statistics class Number of absentees X: 6, 2, 15, 9, 12 Final grade Y %: 82, 86, 43, 74, 58 Compute the correlation coefficient for the above data and also find the regression lines of x on y. Represent the values in tabular form.	10	4	3
3	a	The probability density function of a discrete random variable X is given below: x: 0, 1, 2, 3, 4, 5, 6 P(X = x): k, 3k, 5k, 7k, 9k, 11k, 13k Find (i) k; (ii) $P(X \geq 5)$; (iii) $P(2 \leq X \leq 5)$;	5	2	2
	b	The mean and variance of a binomial variate are respectively 16 and 8. Find (i) P(X = 1) (ii) P(X < 2).	5	2	3
4	a	4% of the switches manufactured by a firm are found to be defective. Using Poisson distribution find the probability that a box containing 150 switches contain (i) 2 or more defective switches (ii) less than 2 defective.	5	3	2
	b	For a certain type of computers, the length of time between charges of the battery is normally distributed with a mean of 50 hours and a standard deviation of 15 hours. If a computer is chosen at random, find the probability that the length of time is between 40 and 60 hours and less than 30 hours.	5	3	3
5	a	To test the hypothesis that a coin is fair, the following rule of decision is adopted. Accept the hypothesis if the number of heads in a sample of 100 tosses is between 40 and 60; reject the hypothesis otherwise. Find the probability of occurrence of Type I error.	5	3	2
	b	A coin was tossed 400 times and the head turned up 216 times. Test the hypothesis that the coin is unbiased at 5% level of significance.	5	3	2

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RV COLLEGE OF ENGINEERING®
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DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Test - III

OBJECT ORIENTED PROGRAMMING

COURSE CODE –20MCA14

Semester – I Sec - A& B III Internals April 2021

Answer All Questions

Time: 90 min **Max. Marks: 50**

Q.no	Question	Marks	CO	BTL
1.	a)Define the following terms i) Error ii) Magic Methods iii) Generator iv) Context Managers	4	CO1	L2
	b)write the python program to demonstrate the method overriding with suitable example	6	CO2	L3
2.	a) Discuss the importance of Exception with an example	5	CO2	L2
	b) Write a python script to illustrate ZeroDivisionError Exception in python	5	CO3	L3
3.	a) Develop a python script to demonstrate File operations in python	6	CO3	L3
	b) What is file? Analyse various modes of opening a file in python	4	CO4	L4
4.	a)Identify and explain any three standard exceptions available in python to solve real world Problems	6	CO4	L2
	b) Discuss decorator with a suitable example	4	CO1	L2
5.	a)Demonstrate the usage of any two magic functions available in python	4	CO3	L3
	b)Analyze the difference in execution process between generators and decorators using simple python script with an example	6	CO2	L4

Course Outcomes

After going through this course, the student will be able to:

CO1: Understand the basic concepts of object oriented programming

CO2: Identify and apply relevant object-oriented concepts in any real world scenario

CO3: Utilize object-oriented concepts to solve any real world problem

CO4: Analyze solutions using OOPs concepts for real world applications

L1,L2- 19	L3,L4- 31	L5,L6-0	CO1-08	CO2- 17	CO3-15	CO4-10

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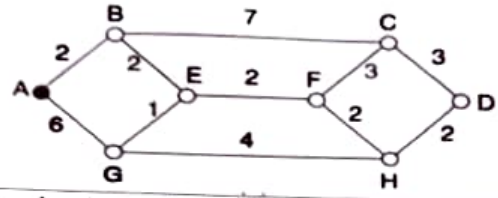
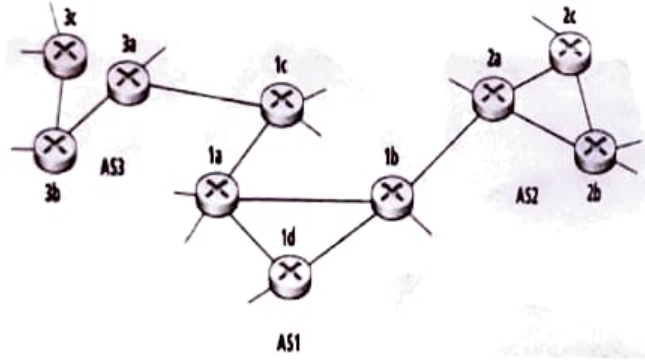
DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
CONTINUOUS INTERNAL EVALUATION (CIE)
MCA FIRST SEMESTER – APRIL 2021
Test - III

SCARFCS

Course Title: Computer Networks
Course Code: 20MCA13
Time: 90 min **Max. Marks: 50**

Answer All Questions

Q.No	Question	Marks	CO	BTL
1 a)	Explain routing with Datagram network and Virtual circuit network	6	CO2	L1
b)	Compare datagram and virtual-circuit networks	4	CO2	L2
2 a)	Describe the common requirements of routing algorithms.	4	CO2	L2
b)	Illustrate Dijkstra's shortest path routing algorithm for the network given below considering A as the source node. 	6	CO3	L4
3 a)	Differentiate non adaptive and adaptive routing.	2	CO2	L2
b)	Consider the following network configuration. Compute the hierarchical Routing tables for the nodes 1c and 3b. 	8	CO3	L4
4 a)	Define Flooding along with its benefits and limitations.	6	CO2	L2
b)	Justify the principles of Choke packet for congestion avoidance in a network	4	CO4	L2
5 a)	Define Tunneling along with its application in WAN with the block diagram	5	CO3	L2
b)	Illustrate transparent and non-transparent fragmentation in Internetworking.	5	CO2	L2

Course Outcomes

CO1: Understand fundamental underlying principles of computer networking and enumerate the layers, protocols and routing algorithms
CO2: Identify the design issues, services, interfaces, protocols and flow of data in computer networks
CO3: Implement the protocols and services designed for physical, data link, network, transport and application layers
CO4: Evaluate the principles and protocols in computer networking

Marks Distribution

L1, L2- 36 | L3,L4-14 | L5,L6-Nil | CO1-0 | CO2-23 | CO3-19 | CO4-8