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END SEMESTER EXAMINATION, JANURARY- 2024
MCA Semester - I

Course Name: Scripting Languages**Course Code: MCA115****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully.****Q.1. Objective type****(Very Short/ Short Answer, MCQ, One-liners, Fill in the Blanks, True/False) Attempt all. (10 X 2=20)**

a.	How do you create an ordered list in HTML?	CO1	PO1,PO3,PO4
b.	What is the purpose of the <title> element in HTML?	CO2	PO1,PO2,PO4
c.	How do you create an HTML table?	CO4	PO1,PO3,PO4
d.	What is the HTML element for defining the structure of an HTML document?	CO2	PO1,PO2,PO4
e.	How do you create an HTML link that opens in a new tab?	CO3	PO1,PO3,PO4
f.	What is the purpose of the <footer> element in HTML?	CO3	PO1,PO3,PO4
g.	How do you make text bold in HTML?	CO5	PO1,PO2,PO4
h.	What is the HTML element for inserting a horizontal line?	CO4	PO1,PO3,PO4
i.	What is an HTML entity, and how do you use it?	CO3	PO1,PO3,PO4,PO5
j.	How do you add a background color to an HTML element?	CO2	PO1,PO2,PO4

Q.2. Short notes/ Short Answer Type (Attempt any five out of seven)**(5 X 4=20)**

a.	Explain the concept of inheritance in CSS and its impact on style application.	CO1	PO1,PO2,PO3,PO5
b.	What is the role of the "!important" declaration in CSS, and when should it be used?	CO3	PO1,PO2,PO3,PO4
c.	Discuss the differences between inline, internal, and external CSS, including their pros and cons.	CO5	PO1,PO2,PO4,PO5
d.	Describe the CSS position property and its values (static, relative, absolute, fixed).	CO2	PO1,PO3,PO4,PO5
e.	How does the z-index property work, and when is it used in CSS positioning?	CO3	PO1,PO3,PO4,PO5
f.	Explain the concept of CSS floats and how they affect the layout of elements.	CO4	PO1,PO2,PO3,PO4
g.	Discuss the CSS display property and its values, including "block," "inline," and "inline-block."	CO5	PO1,PO3,PO4,PO5

Q.3. Structured Question (Attempt any three out of four)

(3 X 10=30)

a.	(i) Discuss the use of regular expressions in XML schema to validate data formats. (ii) What are the advantages of using XML namespaces, and how do they facilitate data integration? (iii) Explain how XSLT (Extensible Stylesheet Language Transformations) is used to transform XML data.	CO2	PO1,PO3,PO5
b.	(i) Describe the key elements in an XSLT stylesheet, including templates and output methods. (ii) What is XPath, and how does it enable navigation and selection of XML data? (iii) Discuss XQuery and its role in querying and extracting data from XML documents.	CO4	PO1,PO3,PO4,PO5
c.	(i) Explain the differences between the DOM (Document Object Model) and SAX (Simple API for XML) parsing methods. (ii) What is SOAP (Simple Object Access Protocol), and how does it use XML for web services communication? (iii) Describe the components of a SOAP message, including headers and the body.	CO5	PO1,PO2,PO4,PO5
d.	(i) Explain the role of WSDL (Web Services Description Language) in defining web service interfaces. (ii) Discuss the use of XML-RPC and RESTful web services as alternatives to SOAP. (iii) How is XML used in database integration and data interchange between systems?	CO3	PO1,PO2,PO4,PO5

Q.4. Long Answer/ Essay type (attempt any two out of three)

(2 X 15=30)

a.	(i) Explain the concept of RSS (Really Simple Syndication) and how it uses XML for content syndication. (ii) Describe the advantages and use cases of RDF (Resource Description Framework) in semantic web applications. (iii) Discuss XML's role in configuration files and data exchange between different software applications.	CO2	PO1,PO2,PO3,PO4
b.	(i) Explain the XML data binding process and how it generates code from an XML schema. (ii) What is Schematron, and how does it provide a rule-based validation approach for XML documents? (iii) Describe the use of XML in representing and exchanging mathematical content, as in MathML.	CO2	PO2,PO3,PO4,PO5
c.	(i) Explain the role of XML in representing geographic and spatial data using formats like KML (Keyhole Markup Language). (ii) Discuss the challenges and best practices for handling character encoding in XML documents. (iii) How is security implemented in XML, including XML Signature and XML Encryption?	CO5	PO1,PO2,PO3,PO4

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END SEMESTER EXAMINATION, JANURARY- 2024
MCA Semester - I**Course Name: Computer Networks****Course Code: MCA114****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully.****Q.1. Objectives Type****(10 X 2=20)****(Very short/ Short Answer, MCQ, One-liners, Fill in the Blank, True/ False) Attempt all.**

		CO	PO
a.	What is NIC?	1	1
b.	Write two properties of fiber optics	1	1
c.	RARP stands for	2	1
d.	What is the function of Ipconfig?	2	1
e.	Define default gateway	3	1
f.	Subnet mask is abyte number	3	1
g.	Write full form of SSH	5	1
h.	HTTP works at port.....	4	2
i.	STP is different from UTP. True or False	5	2
j.	TelNet is same as SSH. True or False	5	2

Q.2. Short notes / Short Answer Type (Attempt any five out of Seven)**(5 X 4=20)**

a.	Explain Aloha and its uses in access control.	1	1
b.	Draw UDP header and explain it	1	1
c.	What is DNS? Why it is required?	2	1
d.	Draw ring and tree topology. Write two advantages of each	2	2
e.	Write about Class C IP address in detail giving examples	3	12
f.	Write in detail about wireless media.	4	1
g.	Why is framing required? Explain any one method of it	5	2

Q.3. Structured Question (Attempt any three out of four)

(3 X 10=30)

a.	(i), Explain Manchester encoding with the help of example. (ii) How MAN is different from LAN? (iii) Explain Switching. How packet switching is required?	1	2
b.	(i) Write in detail about RSA algorithm (ii) Explain the purpose of FTP (iii) How HTTP works?	2	1
c.	(i) Elaborate Distance Vector Routing Protocol (ii) Why Subnets are required? (iii) Explain any five fields of IP Header	3	12
d.	(i) Why CRC is needed? Explain its working (ii) Explain the working of CSMA (iii) Describe Stop & Wait ARQ protocol	5	2

Q.4. Long Answer / Essay type (Attempt any two out of three)

(2 X 15=30)

a.	(i) What are Hamming code? Calculate the hamming code if the frame is 10011001010 (ii) Discuss the Three way handshake protocol used in Transport layer	2	2
b.	(i), An organization is granted the block 150.10.10.0/16. The administrator wants to create 500 subnets. Find 1. The subnet mask and default mask 2. Numbers of address in each subnet and total hosts (ii) Explain the layered network architecture	3	2
c.	(i) How SMPT and POP works? (ii) Explain classless addressing with help of the examples. Why it required?	5	1

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END SEMESTER EXAMINATION, JANURARY- 2024
MCA Semester - I

Course Name: Computer Organization and Architecture**Course Code: MCA113****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully.****Q.1. Attempt All questions. Each carries equal marks.****(10X2=20)**

a.	Define the system bus and its types.	CO1	PO1
b.	DRAM stands for.....	CO5	PO2
c.	What is an assembler?	CO5	PO1
d.	List out the phases of the instruction cycle.	CO2	PO1
e.	Define MRU.	CO5	PO3
f.	List out CPU basic registers.	CO2	PO1
g.	SIMD stands for.....	CO3	PO1
h.	Define virtual memory.	CO4	PO2
i.	What is page fault?	CO5	PO1
j.	Explain data transfer instructions.	CO2	PO1

Q.2. Attempt any five questions. Each carries equal marks**(5X4=20)**

a.	Define simplex, half-duplex, and full-duplex modes of data transfer.	CO3	PO1
b.	Explain instruction and the instruction cycle with the help of the diagram	CO2	PO2
c.	Explain types of RAM and ROM.	CO3	PO2
d.	Provide an overview of direct memory access (DMA) as a mode of data transfer. How does DMA enhance data transfer efficiency, and what are its key characteristics	CO4	PO2
e.	Describe the microprogrammed control unit.	CO2	PO1
f.	Explain FLYNN's classification of computers.	CO2	PO1
g.	Define assembler and differentiate between assembly language & machine language.	CO3	PO1

Q3. Attempt any three questions. Each carries equal marks.

(3X10=30)

a.	Define stored program architecture. Explain Von Neuman's Architecture of the computer with a block diagram. List out CPU registers and explain the role of Accumulator, MAR, PC, MBR, and IR registers.	CO2	PO2
b.	Explain arithmetic and logic microoperations. Explain all the shift micro-operations. Apply Left Shift, Arithmetic Right Shift, Circular Left, and Circular Right Microoperations on 110101.	CO1	PO1
c.	What is assembly language code? Explain zero address, one address, two addresses, and three address machine instructions. Write the assembly code for the expression $C=A+B$ using all address machines separately.	CO3	PO2
d.	Define 8085 microprocessor. Draw the block diagram of the 8085-microprocessor organization. Explain the role of different components.	CO4	PO2

Q4. Attempt any two questions. Each carries equal marks.

(2X15=30)

a.	What is DMA, explain the components of a Direct Memory Access (DMA) controller with a suitable diagram. Explain all the DMA transfer modes. What is the role of BUS grant, BUS request, DMA request, and DMS ACK?	CO4	PO1
b.	Elaborate memory hierarchy with a neat diagram. Explain the different memory mapping techniques. Consider a 52-bit physical address, where the size of cache memory is 4 MB and the size of the cache block is 512 B, and compute the number of tag bits, if 8-way set associative mapping is used.	CO5	PO2
c.	Define page fault and how demand paging is different from swapping. Explain. Find the total number of page faults of the following page reference stream using MRU, LRU, FIFO, and OPR page replacement algorithms and write your comment by comparing them. The frame size is four. Page reference stream: 2 3 2 2 4 5 6 2 1 2 6 3 6 3 4 5 6	CO5	PO2

Q3. Attempt any three questions. Each carries equal marks.

(3X10=30)

a.	Define stored program architecture. Explain Von Neuman's Architecture of the computer with a block diagram. List out CPU registers and explain the role of Accumulator, MAR, PC, MBR, and IR registers.	CO2	PO2
b.	Explain arithmetic and logic microoperations. Explain all the shift micro-operations. Apply Left Shift, Arithmetic Right Shift, Circular Left, and Circular Right Microoperations on 110101.	CO1	PO1
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Q4. Attempt any two questions. Each carries equal marks.

(2X15=30)

a.	What is DMA, explain the components of a Direct Memory Access (DMA) controller with a suitable diagram. Explain all the DMA transfer modes. What is the role of BUS grant, BUS request, DMA request, and DMS ACK?	CO4	PO1
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c.	Define page fault and how demand paging is different from swapping. Explain. Find the total number of page faults of the following page reference stream using MRU, LRU, FIFO, and OPR page replacement algorithms and write your comment by comparing them. The frame size is four. Page reference stream: 2 3 2 2 4 5 6 2 1 2 6 3 6 3 4 5 6	CO5	PO2
