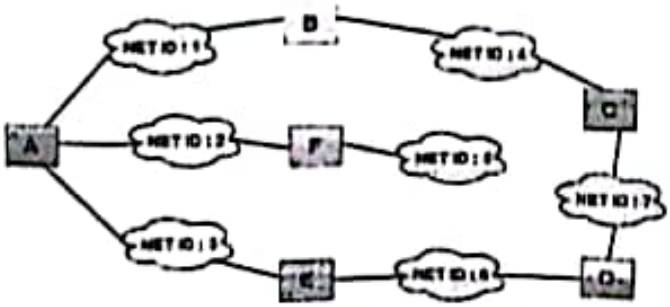
QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

FINAL SEMESTER REGULAR EXAMINATION OF FIRST SEMESTER – FIRST YEAR, 2023 OF 21-BATCH, B.E (CS)

SUBJECT: COMPUTER COMMUNICATION AND NETWORKS

Dated: 17.11.2023 Maximum Marks: 60 Time Allowed: 3 Hours.

NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		QUESTION	CLOs	Taxonomy Level	PLOs	Marks
Q. 01	(a)	Consider the initial data "1010" intended for transmission. Apply Hamming Code. If the 4th bit changes from 0 to 1 upon reception, recompute the parity bits.	02	C3	1	06
	(b)	Compare the fundamental principles of secret key encryption and public key encryption technique.	02	C4	1	06
Q. 02	(a)	Discuss the functionalities and operation of the following network layer protocols: 1. Address Resolution Protocol (ARP) 2. Internet Control Message Protocol (ICMP) 3. Open Shortest Path First (OSPF)	02	C2	1	06
	(b)	Explain the significance of IP addressing and subnetting in the network layer and how they facilitate efficient data routing.	02	C2	1	06
Q. 03	(a)	Explain the working of distance vector routing (DVR) algorithm. Construct a table illustrating the routing information for routers A using DVR.  	03	C2	3	06

	(b)	**Discuss** the importance and functions of the transport layer in computer networking, focusing on how TCP and UDP protocols enhance an efficient and reliable communication. Provide examples of scenarios where each protocol is best suited and highlight key differences between TCP and UDP.	*03*	*C2*	*3*	*C*
Q. 04	(a)	**Discuss** following Application Layer protocols and **explain** how these protocols contribute to effective communication and network management at the Application Layer. 1. DNS (Domain Name System) 2. SMTP (Simple Mail Transfer Protocol) 3. IITTP (Hypertext Transfer Protocol)	*03*	*C2*	*3*	*C*
	(b)	**Describe** how VPNs operate, including the concept of tunneling. Highlight the primary advantages of VPNs over dedicated networks employing frame relay, leased lines, and traditional dial-up connections.	*03*	*C2*	*3*	*C*
Q. 05		**Explain** any 04 of the following terms 1. Cloud computing and cloud security 2. Wireless Network 3. Mobile ahdoc Network 4. IPV4 and IPV6 5. Client server architecture and P2P network	*03*	*C2*	*3*	*1*

The End

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

FINAL SEMESTER REGULAR EXAMINATION OF SECOND SEMESTER – SECOND YEAR 2023 OF 21-BATCH, B.E (CS)

SUBJECT: OPERATING SYSTEMS

Dated: 28.11.2023 Maximum Marks: 60 Time Allowed: 3 Hours.

NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		QUESTION	CLOs	Taxonomy Level	PLOs	Marks
Q. 01	(a)	Differentiate between the short-term scheduler and the long-term scheduler. Also, discuss the scheduling algorithm optimization criteria through which a scheduling algorithm is selected.	2	C4	1	06
	(b)	Discuss the following scheduling schemes along with their problems. 1. FCFS 2. Priority scheduling 3. SJF 4. RR	2	C2	1	06
Q. 02	(a)	Describe the four conditions that if held simultaneously, may cause a Deadlock. Also, elaborate on how a resource allocation graph can help us in deadlock detection.	2	C2	1	06
	(b)	Discuss the following. 1. Deadlock detection 2. Deadlock avoidance	2	C2	1	06
Q. 03	(a)	Differentiate between logical address space and physical address space. Also, define the base and limit registers.	3	C4	3	04
	(b)	Discuss paging along with address translation scheme and paging hardware. Illustrates the paging model of logical and physical memory.	3	C2	3	04
	(c)	Apply your knowledge to calculate the fragmentation where the Page size = 2,048 bytes and Process size = 72,766 bytes. Discuss the worst-case fragmentation and average fragmentation. (Hint: 35 pages + 1086 bytes).	3	C3	3	04
Q. 04	(a)	Discuss in detail the Virtual memory and the virtual address space. What is demand paging and what are its benefits? Why valid-invalid bits are used?	3	C2	3	06
	(b)	Define Page replacement and why we need it. What is page fault? Discuss the following page replacement algorithms. 1. First In First Out 2 Least Recently Used	3	C1	3	06
Q. 05	(a)	Discuss the following disk scheduling methods and illustrate the head start position and subsequent movement for better understanding. 1. First Comes First Serve 2. Shortest Seek Time First 3. SCAN	3	C2	3	06
	(b)	Define the following security violation methods. 1. Masquerading 2. Replay attack 3. Man-in-the-middle attack 4. Session hijacking	3	C1	3	06

FINAL SEMESTER REGULAR EXAM: OF SECOND SEMESTER – SECOND YEAR (4TH SEM:) 2023 OF 21-BATCH, B.E (CS)

SUBJECT: WEB ENGINEERING-I

Dated: 24.11.2023 Maximum Marks: 60 Time Allowed: 3 Hours.

NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	QUESTION	CLOs	Taxonomy level	PLO	marks
Q.01 (a)	What are the different methods to include JS code in an html file?	2	C3	3	04
(b)	Write JS code to print your Roll ID on browser screen.	2	C3	3	04
(c)	Describe HTML cookies with an example and it's role in web site session management.	2	C3	3	04
Q.02 (a)	Describe different types of loops provided by JavaScript with examples.	2	C3	3	04
(b)	Write JS code to print sum of first 100 natural numbers using for loop.	2	C3	3	04
(c)	Write JS code to validate the following registration form. Use any id for the form elements. **Registration Form** User Id: [Required and must be of length 5 to 12.] Password: [Required and must be of length 7 to 12.]	2	C6	3	04
Q.03 (a)	Describe lifecycle of a PHP web request in detail using block diagram.	3	C3	3	04
(b)	Write a PHP script to print "Hello from web server" in browser window.	3	C3	3	04
(c)	Describe explode() function with an example.	3	C3	3	04
Q.04 (a)	Describe indexed array and associative array with declaration examples.	3	C3	3	04
(b)	What are the different methods to send form data to web server?	3	C3	3	04
(c)	Write a PHP script to display lines of a text file (as a bulleted list) using foreach loop.	3	C3	3	04
Q.05	Consider the below given table (personal) in "students" database. Roll_Id First_Name Last_Name Gender fp01 Danish Solangi Male fp02 Kanwal Sehto Female 1. Write a PHP script to : a) Open a database connection using mysqli interface b) Insert the following values in the above table: ['fp03', 'sam', 'durrani', 'Male'] c) Close the connection. 2. Write a PHP script to : a) Open a database connection to students database using mysqli b) Fetch all the records from the 'personal' table using select query c) Print all the records using any loop d) Close the connection	3	C6	3	12

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

FINAL SEMESTER REGULAR EXAMINATION OF SECOND SEMESTER – SECOND YEAR, 2023 OF 21-BATCH, B.E (CSE)

SUBJECT: COMPUTER ACHITECTURE AND DESIGN

Dated: 21.11.2023 Maximum Marks: 60 Time Allowed: 03 Hours.

NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		QUESTION	CLO	Taxonomy Level	PLO	Marks
Q. 01	(a)	Define the importance of interfacing with practical examples? Explain time shared common bus and multiport memory.	2	C2	2	04
	(b)	Elaborate how DMA bypasses CPU and speeds up the memory operation with a neat schematic? Explain about Direct Memory Access Controller and its mode of data transfer.	2	C2	2	04
	(c)	A computer uses RAM chips of 1024*1 capacity. Then (i) How many chips are needed and how should their address lines be connected to provide a memory capacity of 1024 bytes. (ii) How many chips are needed to provide a memory capacity of 16 Kbytes?	2	C2	2	04
Q. 02	(a)	Discuss in detail Register Stack and Memory stack?	2	C2	2	
	(b)	A computer responds to an interrupt request signal by Pushing on to Stack, the contents of PC and current PSW (Program Status Word) then reads a new PSW from memory, from a location given by an interrupt address symbolized by IAD. The first address of the service program is taken from memory at location IAD+1 (i) Write the sequence of micro operations for the interrupt cycle. (ii) Write the sequence of micro-operations for return from interrupt instruction.	2	C2	2	04
Q. 03	(a)	Justify how parallel processing improves the performance of multiprocessing environment?	2	C2	2	04
	(b)	Provide an overview of pipelining? Define its importance in high speed applications.	2	C2	2	04
	(c)	Illustrate the behavior of a pipeline using space-time diagram. Suppose A non-pipeline system takes 50ns to process a task. The same task can be processed in a six – segment pipeline with a clock of 10 ns. Determine speedup ratio of the pipeline for 100 tasks?	2	C2	2	04
Q. 04	(a)	Explain how Assembly language is related to Machine language? Define in detail Instruction fields in assembly language.	3	C3	3	06
	(b)	Define with the help of instruction codes mapping of Assembly language and High Level Language.	3	C3	3	06
Q. 05		Write notes on the following: (i)Associative Memory and brief out its hardware organization with diagram. (ii)Vector processing with its examples? (iii)Symmetric and Asymmetric multiprocessing.	2,3	C2,C3	2,3	12

Good Luck

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – SECOND YEAR (4TH SEMESTER) 2023, 21-BATCH, B.E (CS)

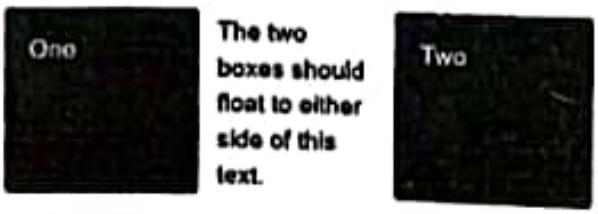
SUBJECT: WEB PROGRAMMING-I

Dated: 04.10.2023 Maximum Marks: 20 Time Allowed: 01 Hour.

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		Question	CLO	Taxonomy Level	PLO	Marks

01	(a)	Consider the following HTML:
		
		`<!DOCTYPE html>`
		`<head>`
		`<h1>Mowgli's Magical Muffins</h1>`
		`<link src=''mypage.css'' type=''text/css'' rel=''stylesheet'' />`
		`</head>`
		`<body>`
		`<p>`
		`For Doggies' Best Friends:`
		`</p>`
		`<ul>`
		`<li>Multi-grain Melody</li>`
		`<li>Merry-Mint-Chip</li>`
		`</ul>`
		`For Doggies:`
		`<ul>`
		`<li>The Malt-ese</li>`
		`<li>Malamint Magic<li>`
		`<li>Meow Meows</li>`
		`</ul>`
		`</body>`
		`</!DOCTYPE html>`
		
		This HTML document won't validate, and would generate errors and warnings in the W3C Validator. Make at least 5 modifications to the above HTML to make it pass the validation.
			1	C1	1	05

	(b)	i. Create a webpage that prints your name in green color. ii. Create a webpage and sets its title to "This is Midterm exam". iii. Create a webpage that prints two lists with any information you want. One list should be an ordered list, the other list should be an unordered list. iv. Create a webpage that prints two paragraphs in two different fonts. A paragraph can contain any text. v. Create a webpage that prints a definition list with any 5 items.	1	C1	1	05
02	(a)	Explain CSS box model using diagram.	1	C1	1	03
	(b)	Write an HTML/CSS to float the two elements 'One' and 'Two' with a class of float1 and float2 left and right, respectively. The text should then appear between the two boxes, as in the image below: 	1	C1	1	04
	(c)	Describe the document flow of block and inline elements using diagram.	1	C1	1	03

P.T.O

03	(a)	a) Consider the following HTML:
		
		`<html>`
		`  <head>`
		`  <title>CSE Course Web Page</title>`
		`  </head>`
		`  <body>`
		`  <header id="title-1">`
		`  <h1 id="title-2"><em id="em-1">All the CSE Course Stuffff Ever</em></h1>`
		`  </header>`
		`  <p id="subtitle-1">Topics:</p>`
		`  <ul id="list-1">`
		`  <li id="topic-1">What is the Internet</li>`
		`  <li id="topic-2">How to do the Internet</li>`
		`  <li id="topic-3">How to make the Internet</li>`
		`  <li id="topic-4">Make cool projects:`
		`  <ol id="list-2">`
		`  <li id="hw-1">Make Pies</li>`
		`  <li id="hw-2">Watch Lion King</li>`
		`  <li id="hw-3">Read <em id="em-2">rly rly rly</em> fast</li>`
		`  <li id="hw-4">Push squares around</li>`
		`  <li id="hw-5">Catch 'em all!</li>`
		`  </ol>`
		`  </li>`
		`  </ul>`
		`  <div id="div-1">`
		`  <img id="img-1" src="mowgli.jpg">Our course mascot!</img>`
		`  </div>`
		`  </body>`
		`</html>`
		
		Write the ID's of the elements selected by each of the given selectors:
		1. p :
		2. ol li :
		3. li em :
		4. ul > li :
		5. li li :
			1	C1	1	05

	(b)	Write an HTML document to demonstrate anchor links to different sections within a document. You can create few sections in the document and the links for them at the top.	1	C1	1	03
	(c)	Differentiate between span and div element.	1	C1	1	02

Good Luck

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – SECOND YEAR (4th SEMESTER) 2022-21 BATCH, B.E (CS)

SUBJECT COMPUTER COMMUNICATION AND NETWORKS

Dated: 02.10.2023 Maximum Marks: 20 Time Allowed: 01 Hour.

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		Question	CLO	PLO	Taxonomy Level	Marks
Q. 01	a)	Explain the role and purpose of the Physical layer in the OSI model.	CLO1	1	C2	3
	b)	Discuss the different types of transmission media used in computer networks. Compare and contrast guided and unguided media, provide examples of each.	CLO1	1	C2	3
	c)	Explain the concept of transmission impairments and their impact on data transmission. Discuss common types of impairments, such as attenuation, noise, and distortion.			C2	4
Q. 02	a)	Compare (any four) of the following terms: 1. Single bit error and burst error 2. Pulse amplitude modulation and Pulse Code modulation 3. Time division multiplexing and Frequency division multiplexing 4. Message switching and packet switching 5. Half and Full duplex mode 6. Local area Network and Wide Area Network	CLO1	1	C4	5
	b)	Discuss the following methods to control the flow of data in data link layer. 1. Stop-and-wait 2. Sliding window		1	C2	5
Q. 03	a)	Suppose the original data is 11100 and divisor is 1001. Perform cycle redundancy check (CRC) on sender and receiver side. Moreover, again perform CRC on receiver side by changing bit number 3 from 1 to 0 and show how the error will be identified.	CLO1	1	C2	5
	b)	Consider the bit stream 11100110 and convert it into NRZ-L, NRZ-I and RZ encoding schemes.	CLO1	1	C2	5

The End

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – SECOND YEAR (4TH SEMESTER) 2023, 21-BATCH, B.E (CS)

SUBJECT: OPERATING SYSTEMS

Dated: 05.10.2023 Maximum Marks: 20 Time Allowed: 01 Hou

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		Question	CLO	Taxonomy Level	PLO	Mark
01	(a)	List the names of various Operating System services. Also, explain System calls in detail.	1	C1	3	05
	(b)	Discuss the following. 1. Process control block 2. Interrupt vector 3. Monitors	1	C2	3	05
02	(a)	Illustrate and explain various Process states and transitions.	1	C3	3	05
	(b)	Explain the reasons for Inter-process communication between cooperating processes. Differentiate between the two models of IPC, that is, Shared memory and Message passing.	1	C2	3	05
03	(a)	Discuss the critical section problem and the requirements for a solution to a critical section problem.	1	C2	3	05
	(b)	Describe the Dining-Philosophers Problem and its solution (Dining-Philosophers Problem algorithm). What is the problem with this algorithm?	1	C2	3	05

Good Luck

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

FINAL SEMESTER REGULAR EXAM: OF SECOND SEMESTER – SECOND YEAR (4TH SEM:), 2023 OF 21-BATCH, B.E (CS)

SUBJECT: COMPUTER GRAPHICS

Dated: 01.12.2023 Maximum Marks: 30 Time Allowed: 02 Hours.

NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		QUESTION	CLO	Taxonomy Level	PLO	Marks
Q. 01	(a)	Write major steps of Mid-point circle generation and Brasenham's circle drawing Algorithm	2	C2	2	05
	(b)	plot the first octant of a circle centered at origin having radius 10 units	2	C2	2	05
Q. 02		Attempt any FOUR of the following: 1. Shadow mask Display 2. Point clipping and line clipping 3. Cohen-Sutherland Line Clipping 4. Low level and high level techniques of Animation 5. RAMDAC 6. Raster Display Graphics and vector Graphics	2, 3	C2,C3	2,3	10
Q. 03	(a)	Derive the equation to move an object without deformation and rotate it with respect to an angle in 2D plan	3	C3	3	05
	(b)	Draw a triangle with coordinates A(2,1), B(5,1) and C(4,4). Enlarge the triangle with 3 units in x and 2 units in y and find out its new coordinates.	3	C3	3	05

Good Luck

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – SECOND YEAR (4TH SEMESTER) 2023, 21-BATCH, B.E (CS)

SUBJECT: COMPUTER ARCHITECTURE AND DESIGN

Dated: 03.10.2023 Maximum Marks: 20 Time Allowed: 01 Hour.

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		Question	CLO	Taxonomy Level	PLO	Ma
Q. 01	(a)	Explain the concepts of Inter register transfer, logic and shift micro-operations with suitable examples. Make the block diagram of the hardware that implements the following register transfer statement: T2: R2←R1, R1←R2	1	C1	1	0
	(b)	Explain briefly Instruction Cycle and Machine Cycle.	1	C2	1	0
Q. 02	(a)	How interrupts pause/suspend the normal execution of a program? Explain three main types of interrupt: (i)Hardware (ii)Mask able (iii)Software	1	C1	1	0
	(b)	Define addressing modes. Explain Why computer uses addressing mode technique.	1	C1	1	0
Q. 03		Explain the following terms: i. Instruction Set Architecture (ISA) ii. Common Bus System for Registers iii. SRAM and DRAM? iv. Stored Program Organization	1	C1,C2	1	1

Good Luck

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – SECOND YEAR (4TH SEMESTER) 2023, 21-BATCH, B.E (CS)

SUBJECT: COMPUTER GRAPHICS

Dated: 06.10.2023 Maximum Marks: 10 Time Allowed: 45 Minutes.

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Sr. No.	Questions	CLOs	Taxonomy Level	PLO	Marks
1(a)	What is Computer Graphics? Discuss usage of CG in some real time applications.	1	C1	1	2
1(b)	Attempt any THREE of the following. (a) Flat panel display vs CRTs (b) Vector scan display vs Raster scan display (c) Interlaced vs non-interlaced raster scan display (d) Horizontal retrace vs vertical retrace (e) Bitmap vs Pixmap				3
2	Discuss line Drawing DDA Algorithm in detail and rasterize the line from (3,5) to (12,9) using DDA Algorithm.	2	C2	2	5
3	Write major steps of Bresenham's Line drawing Algorithm rasterize the line from (6, 7) to (9, 11) using Bresenham's Algorithm.	2	C2	2	5