



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

MID-SEMESTER EXAMINATION OF SECOND SEMESTER - THIRD YEAR (6TH SEMESTER) 2023-20 BATCH B.S.(CS)

SUBJECT: COMPILER CONSTRUCTION

Dated: 06.10.2023

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) What is the primary purpose of a compiler, and what is the main purpose of the front-end module in a compiler, explain its two primary components?	1	C1	2	05
	(B) Explain the key difference between a syntax tree and an abstract syntax tree (AST), and how does a two-pass compiler differ from a one-pass compiler.	1	C2	2	05
02	What is the role of the optimizer in a three-pass compiler, Additionally, how does the run-time system interact with the compiled code during program execution?	1	C1	2	10
03	(A) What is the purpose of lexical analysis in the compilation process, and how does it relate to the concept of tokens? Provide an example of a token from a programming language.	1	C1	2	05
	(B) Explain the term "ad-hoc lexer" in the context of compiler design	1	C2	2	05

***** Good Luck *****



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

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – THIRD YEAR (5TH SEMESTER) 2023, 20 BATCH B.S (CS)

SUBJECT: COMPUTER 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	Taxonomy Level	PLO
01 (a)	Describe and give examples of multiple networks used in our daily life and explain their significance and applications.	1	C2	2
01 (b)	Discuss the various network topologies commonly used in computer networks, highlighting their advantages and disadvantages.	1	C2	2
02	Explain the fundamental rules and protocols for communication in computer networks, including the TCP/IP protocol suite and the OSI model. Highlight the key layers and their functions in ensuring reliable data transmission.	2	C2	2
03	Explain the concept of media access control in computer networks and provide examples of common media access control methods, such as CSMA/CD, CSMA/CA and Token Passing using suitable diagrams. Discuss the advantages and disadvantages of these methods.	2	C2	2

The End



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

Mid-Semester Examination of Second Semester - Third Year (5th Semester) 2023-20 Batch B.S (CS)

SUBJECT: WEB ENGINEERING

Date: 03.10.2023

Maximum Marks: 20

Time Allowed: 01 Hour

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

Question No.	Question	CLO	Taxonomy level	PLO	Marks
Q. 01	a) Define PHP? What does PHP Code look like? What is PHP Environment?	1	C1	2	(03)
	b) What is difference between echo and print in PHP?	1	C4	2	(03)
	c) Name and define comments and variables in PHP?	1	C1	2	(04)
Q. 02	a) List possible operators in PHP? Name types and examples.	1	C1	2	(03)
	b) Describe PHP control structures?	1	C2	2	(03)
	c) Describe function creation in PHP? Give suitable example	1	C2	2	(04)
Q. 03	a) Explain PHP forms? Give suitable example.	1	C2	2	(03)
	b) State \$get, \$post and \$request methods in PHP?	1	C1	2	(03)
	c) Discuss PHP sessions? Describe its importance in Web Engineering?	1	C1	2	(04)

---THE END---



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

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – THIRD YEAR (5TH SEMESTER) 2023, 20 BATCH, B.S (CS)

SUBJECT: NUMERICAL COMPUTING

Dated: 04.10.2023

Maximum Marks: 20

Time Allowed: 01 Hour

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

1. (a) Explain geometrically the bisection iteration method for solving algebraic and transcendental equations. (00)
(b) Find square root of 5 upto 4 decimal points, using Newton-Raphson method. (00)
2. (a) Define order of convergence of the iteration method. What is the order of convergence of bisection, secant and Newton-Raphson methods. (00)
(b) Using bisection method solve the following equation. Carry out five iterations

$$x^3 - 9x + 1 = 0. \quad C$$

The real root is in the interval $[2, 4]$. (00)

3. Solve the following equations, up to 2 decimal points, using any suitable iteration method. The interval of the root is given.

1. $2x - \log x - 7 = 0$ in $[3, 4]$ ✓

2. $e^x - \ln x - 20$ in $[3, 4]$

3. $3x - e^x = 0$ in $[1, 4]$

Best of luck!

QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH
MID-SEMESTER EXAMINATION OF SECOND SEMESTER – THIRD YEAR (6TH SEMESTER) 2023, 20-BATCH, B.S (IT / CS)

SUBJECT: TECHNICAL AND BUSINESS WRITING

Date: 05.10.2023

Maximum Marks: 20

Time Allowed: 01 Hour.

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

Sl. No.	Question	CLO	Taxonomy Level	PLO	Marks
	Discuss the role of Persuasive writing in creative Writing.	1	C1	10	10
	What is the importance of Technical Writing in academic life? Discuss in detail.	1	C1	10	10
	Write a short note on the following: (A) Business Writing (B) Brain Storming (C) Topic Sentence	2	C1	10	10

The End



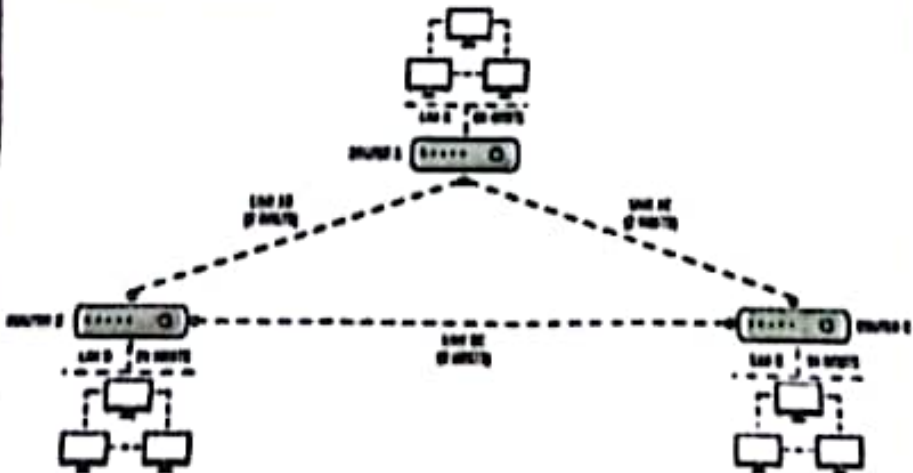
SUBJECT: COMPUTER NETWORKS

Dated: 17.11.2023

Maximum Marks: 60

Time Allowed: 3 Hours.

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

Q. No.	QUESTION	CLO	Taxonomy Level	PLO	Marks
Q. 01	Identify and explain the major common fields found in IPv4 and IPv6 headers. Which basic processes/functions are used by the Network layer to accomplish end-to-end transportation?	3	C4	3	
Q. 02	Compare a host routing table to routing table in a router. Explain how host devices use routing tables to route packets to itself, to a local destination, or a default gateway. Use necessary diagrams as well.	3	C4	3	
Q. 03	(a) Explain the characteristics of the TCP and UDP protocols, including the port numbers and their uses. (b) Explain the TCP session establishment and termination process with suitable diagram.	2	C2	2	
Q. 04	Draw a sample network topology and explain the role of DHCP. Provide a step-by-step explanation of how DHCP works to assign IP addresses and other parameters dynamically. Write the set of CISCO commands to configure DHCP service for a LAN.	4	C4	3	
Q. 05	Imagine you were recently hired as a Network Engineer for an organization. Using the VLSM technique, design IP plan for the organization with an IP range of 192.168.1.0/24. The organization's network consists of three local area networks: LAN A, LAN B, and LAN C as shown in the figure below. These three LANs are connected with three serial links: Link AB, Link BC, and Link AC. Calculate and document the Network addresses, Host address ranges, and Broadcast addresses for each LAN and serial links. 	5	C4	4	

The End



1. Find forward and backward difference table for the following values.

x	1	3	5	7	9	11
y	3	14	19	21	23	28

Also compute y at $x = 2, 12$.

2. (a) Solve the following system of linear equations by LU triangular method.

$$2x - 3y + 10z = 3$$

$$-x + 4y + 2z = 20$$

$$5x + 2y + z = -12$$

- (b) Solve the following system of equation by Gauss elimination method.

$$3x + y - z = -3$$

$$2x - 8y + z = -5$$

$$x - 2y + 9z = 8$$

3. (a) Explain geometrically the bisection iteration method for solving algebraic and transcendental equations.
(b) Solve $3x - e^x = 0$ in $[1, 4]$ numerically.
4. (a) Find a cubic polynomial which takes the following set of values:
 $(0, 1), (1, 2), (2, 1), (3, 10)$.
(b) What is the relation between forward difference operator Δ and shift operator E .
5. What is difference between Gauss-Jacobi method and Gauss-Seidel method of iterations. Solve the following system of linear equations using Gauss-Jacobi method. Write at least 5 iterations.

$$8x - 3y + 2z = 20$$

$$4x + 11y - z = 33$$

$$6x + 3y + 12z = 35$$

Best of luck!



QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH
FINAL SEMESTER REGULAR EXAMINATION OF SECOND SEMESTER - THIRD YEAR, 2023 OF 20 BATCH, B.S (CS)

SUBJECT: WEB ENGINEERING

Dated: 21.11.2023

Maximum Marks: 60

Time Allowed: 3 Hours.

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

Q. No.	QUESTION	CLO	Proficiency Level	PLO	Marks											
Q.01	(a) What is PHP? How you will Install PHP? What do you need for Installation of PHP?	1	C2	1	04											
	(b) Describe variables and constants in PHP.	2	C2	2	04											
	(c) Describe functions in PHP with example.	3	P3	2	04											
Q.02	(a) What do you mean by Web application(s) in web engineering? What is Browser/Server Communication? What do you mean by PHP Server?	1	C2	1	06											
	(b) Create a PHP file(s) for login page with possible invalid or password mismatch messages in page, if successful login may jump to welcome page.	3	C2	3	06											
Q.03	(a) What is web? How it is different from internet? Describe briefly the internet growth.	1	C2	1	04											
	(b) What is difference between static and dynamic pages? What is need of client-side programming?	1	C2	1	04											
	(c) What is Hyperlinking in HTML? How you will link image so that page is displayed after clicking on image write html code for it? How you will jump to portion of html page with multiple places using hyperlinking in html.	2	P3	2	04											
Q.04	(a) What are tables in html? What are frames in html? Write the main tags needed for frames and tables in html. What is border, rowspan and colspan attributes of table in html.	1	C2	2	04											
	(b) Write an html code for following table in html. <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td>HEAD1</td> <td>HEAD2</td> <td>HEAD3</td> </tr> <tr> <td>one</td> <td>two</td> <td>three</td> </tr> <tr> <td>four</td> <td colspan="2">five</td> </tr> <tr> <td></td> <td>six</td> <td>seven</td> </tr> </table>	HEAD1	HEAD2	HEAD3	one	two	three	four	five			six	seven	3	P3	3
HEAD1	HEAD2	HEAD3														
one	two	three														
four	five															
	six	seven														
Q.05	(a) What are possible types of List and CSS in html?	1	C2	1	04											
	Write a Note on three of the following a) History of the Web b) JavaScript vs JScript vs VBScript c) User defined functions in JavaScript d) JavaScript data types & variables e) JavaScript Operators.	1	C2	1	12											

The End

The End

**SUBJECT: COMPILER CONSTRUCTION****Dated: 01.12.2023****Maximum Marks: 60****Time Allowed: 03 Hour****NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

Q.No .	QUESTION	CLO	Taxonomy Level	PLO	Marks
Q.01	(A) What are the different phases of a compiler? How does each phase contribute to the process of translating high-level programming languages into executable code?	1	C1	2	06
	(B) What is the role of regular expressions (RE) in defining tokens for lexical analysis in compiler construction? Provide a simple example of a RE for identifying a common token in a programming language	1	C1	2	06
Q.02	(A) How are Finite Automata (FA) utilized in the design of compilers? Discuss the concept of state graphs in the context of Finite Automata. Provide a step-by-step construction of a state graph for a simple language recognizer.	2	C2	2	06
	(B) Explain the concept of table encoding for representing Finite Automata, providing examples to illustrate how this encoding method is employed in the implementation of lexical analysis within a compiler.	2	C2	2	06
Q.03	In the context of parsing techniques, what is the significance of predictive parsing? How does it contribute to the efficiency and simplicity of top-down parsers?	3	C4	4	12
Q.04	How do Nondeterministic Finite Automata (NFA) and Deterministic Finite Automata (DFA) play distinct roles in the construction of compilers? Provide a detailed comparison between NFA and DFA, highlighting the advantages and disadvantages of each. Also, Explain the process of converting Regular Expressions (RE) to NFA.	3	C2	5	12
Q.05	How does DFA minimization contribute to the optimization of lexical analyzers in compiler construction? Discuss the importance of minimizing DFA in the design of efficient lexical analysis. Provide example to illustrate how DFA minimization enhance the performance and maintainability of compilers.	4	C1	5	12

The End

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



FINAL SEMESTER REGULAR EXAM. OF SECOND SEMESTER - THIRD YEAR (5TH SEM) 2023 OF 20 BATCH. B.S (IT/CS)

SUBJECT: TECHNICAL AND BUSINESS WRITING

Dated: 28.11.2023

Maximum Marks: 60

Time Allowed: 3 Hours.

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

Q. No.	QUESTION	CLO	Taxonomy Level	PLO	Marks
Q. 01	Discuss the importance of developing good paraphrasing skills to avoid plagiarism.	1	C1	1	12
Q. 02	What are the key elements of a successful presentation? Discuss in detail	2	C10	2	12
Q. 03	What are the different types of report? List and explain them.	3	C10	3	12
Q. 04	How do you develop brain storming skills? Discuss in detail.	2	C10	1	12
Q. 05	Write short note on the following: A. Teacher Centered Method B. Student Centered Method. C. Inquiry based Method	2	C1	1	12

Good Luck