



QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH  
FINAL SEMESTER REGULAR EXAMINATION OF FIRST SEMESTER - THIRD YEAR, 2022 OF 20 BATCH, B.S (IT)

SUBJECT: ADVANCED OBJECT ORIENTED PROGRAMMING

Dated: 08.06.2023

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) Define polymorphism also define method overloading and method overriding with example in java	2	C2	2	05
	(b) Differentiate Interface and abstract class with program example.	2	C2	2	05
Q. 02	(a) List and define collections In java.	3	C3	3	05
	(b) Write a program in java which stores five student names in ArrayList and print them.	3	C3	3	05
Q. 03	(a) Write java code for the following UML diagram	4	C4	3	05
	<pre>classDiagram     class Animal {         +age: int         +gender: String         +talk(): void         +walk(): void     }     class Duck {         +breastColor: String = "yellow"         +swim(): void         +quack(): void     }     class Fish {         +swimUp: int         +swimDown: int         +swim(): void     }     class Zebra {         +color: String         +run(): void     }     Animal &lt; -- Duck     Animal &lt; -- Fish     Animal &lt; -- Zebra</pre>	2	C2	2	05
	(b) Define following terms: 1- Inheritance 2- Access Modifiers 3- Super keyword				

*The End*



NAWABSHAH UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH  
FINAL SEMESTER REGULAR EXAMINATION OF FIRST SEMESTER - THIRD YEAR, 2023 OF 20-BATCH, B.S (IT)

SUBJECT: IT PROJECT MANAGEMENT

Dated: 12.06.2023

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	(a) Summarize the processes of Project Integration Management with their outputs and shows when they occur in a typical project.	1	C1	1	06
	(b) List Agile methodologies and illustrate spiral life cycle model.				
Q. 02	(a) Define main contents of project "scope statement".	1	C1	1	06
	(b) List the methods for collecting requirements.	2	C2	2	06
Q. 03	(a) Summarize four main processes and outputs involved in project cost management and shows when they occur in a typical project.	2	C2	2	06
	(b) What functions can u perform with PM software?	3	C2	3	06
Q. 04	(a) Define the following key concepts: i. Milestone ii. Emotional Intelligence iii. Sunk Cost iv. Earned Value Management (EVM) v. SWOT analysis vi. Requirements Traceability Matrix (RTM) vii. Cost Baseline viii. Contingency reserves	3 2	C1 C1	3 2	06 08
	(b) Differentiate RAM responsibility assignment matrix (RAM and RACI Chart.	2	C3	2	04
Q. 05	(a) Describe Thamhain and Wilemon's ways: to have Influence on projects.	3	C2	2	06
	(b) Define the five factors that play role of dysfunctioning of a team.	3	C2	2	06

The End



QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH  
FINAL SEMESTER REGULAR EXAMINATION OF FIRST SEMESTER - THIRD YEAR, 2022-23 BATCH - B.S (IT)  
SUBJECT: SOFTWARE REQUIREMENT ENGINEERING

Dated: 29.05.2023

Maximum Marks: 60

Time Allowed: 3 Hours

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

Q. No.	QUESTION	CLQ	Knowledge Level	PLO	Marks
Q. 01	Discuss the following properties of requirements model? 1. Internal Consistency 2. Non-Ambiguity 3. External Consistency 4. Minimality 5. Completeness 6. Redundancy	2	C2	2	12
Q. 02	Explain requirements validation, also define the techniques used to overcome the issues occurring during this phase.	2,3	C3	3	12
Q. 03	How C.A.S.E is useful for requirement engineering process, justify by providing differences with Manual and automated techniques used in Requirement engineering process.	3	C3	3	12
Q. 04	Describe generic architecture for CASE tools also draw its diagram.	3	C3	3	12
Q. 05	Explain the Repository for Requirement Engineering and its functions?	3	C3	3	12

The End





Dated: 01.06.2023

SUBJECT: SYSTEM AND NETWORK ADMINISTRATION  
Maximum Marks: 60

Time Allowed: 3 Hours

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

Q. #		QUESTION	CLO	PLO	MARKS
Q. 01		What is a service which a typical server provides to users? Describe the principles for designing a service.	2	3	(12)
Q. 02	(a)	With the help of a diagram, explain the different steps involved in booting a Linux machine. Also describe the spontaneous system processes.	2	3	(06)
	(b)	Describe the purpose of following Linux Commands with suitable examples. i. df ii. du iii. top iv. uptime v. ps vi. free	3	4	(06)
Q. 03		Write Linux commands to perform following operations: 1. Create a user named Madadgar with home directory. 2. Sets expiry date of above named user account to 20-06-2024. 3. Create groups SNA, DBMS and Security. 4. Concatenate the contents of 22IT, 21IT and 20IT files to Students file. 5. Allows read permission to group only on file Students. 6. Allows read and write permission to user, group and others on file Students	3	4	(12)
Q. 04		What is shell scripting? Describe different shells of Linux. Write shell script to perform the following tasks: i. Prints hostname. ii. Prints current working directory. iii. Creates empty files named Salary, Income and Tax. iv. Prints odd numbers from 1 to 50.	3	4	(12)
Q. 05	(a)	What is capacity planning? State the capacity planning challenges. Enlist the challenges involved in capacity planning.	2	3	(06)
	(b)	Define the term "Monitoring" and what is the motivation behind monitoring? Describe real-time monitoring. What is the role of alerting systems in monitoring?	2	3	(06)

The End



Dated: 05.06.2023

SUBJECT: DATABASE SYSTEM  
Maximum Marks: 60

Time Allowed: 3 Hours

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

CLO For PLO Mark

Q. No. QUESTION

Q.01 (a) Given the relation with sample data below, find all possible functional dependencies. 3 C2 3 06

ID	Name	Major	Quiz1	Quiz2	Quiz3	Quiz4	Total	Grade
001	Harry	Magt	95	90	80	100	365	A
002	Parvaneh	Magt	100	100	100	100	400	A
007	Ron	Magt	80	100	70	100	350	B+
001	Chubby	Service	95	95	95	95	380	A
002	Sarwan	Education	90	90	90	100	370	A
009	Adus	Management	100	100	90	100	390	A

(b) Describe the concept of functional dependencies. 1 C2 2 06

Q.02 (a) We have a relational model represented as a relational schema and its functional dependencies given as below: 3 C2 3 06

TRANSCRIPT (ID, fName, lName, major, majorDescription, courseID, courseDescription, courseGrade)

FD1: ID, courseID → fName, lName, major, majorDescription, courseDescription, courseGrade

FD2: ID → fName, lName, major, majorDescription — *Partial*

FD3: courseID → courseDescription — *Partial*

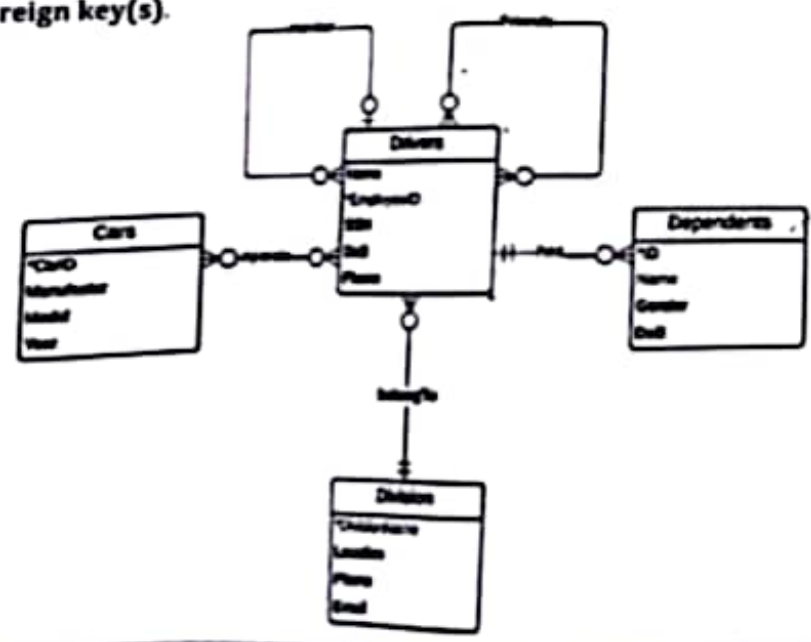
FD4: major → majorDescription

A: Normalize it to 2NF

B: Check all the relations you got from A. Are they in 3NF? If not, normalize them to 3NF.

(b) Database normalization is an essential process, describe the process briefly. 1 C2 2 06

Q.03 (a) Translate the ERD to a Relational Model. Make sure you represent the Relational Model by a set of Relational Schemas, and explicitly represent the primary key(s) and foreign key(s). 2 C5 4 06





Q. 01	(b)	Describe the properties of a Relation.	2	C5	4
Q. 04	(a)	Suppose you have created the following tables in your database.	3	C2	3
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Customer ID</p> <p>Customer Name</p> <p>Address</p> <p>Country</p> <p>Phone</p> <p>Order Date</p> <p>Salesperson</p> <p>Region</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Customer ID</p> <p>Invoice ID</p> <p>Order Date</p> <p>Subtotal</p> <p>Discount</p> <p>Region</p> <p>Salesperson</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Invoice ID</p> <p>Product ID</p> <p>Unit Price</p> <p>Qty</p> <p>Extended Price</p> <p>Product Name</p> <p>Total</p> <p>Total in Stock</p> <p>Order Date</p> </div> <div style="border: 1px solid black; padding: 5px; width: 25%;"> <p>Product ID</p> <p>Product Name</p> <p>Unit Price</p> <p>Stock</p> <p>Category</p> <p>Discount</p> <p>Total in Stock</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>Customers table</span> <span>Invoices table</span> <span>Line Items table</span> <span>Products table</span> </div>					
<p>Use these tables to write the SQL queries for the following statements.</p> <ol style="list-style-type: none"> <li>List the customerid, companyname, and country for all customers NOT in Pakistan.</li> <li>List the productid, productname, and unit price if it is less than 100 Rs.</li> <li>List all customer whose names start with "am".</li> <li>List each order and its Total Value (unitprice * quantity) for all orders shipping into France.</li> </ol>					
	(b)	What does the "on delete cascade" mean in SQL? What choices you have about "on delete" option?	3	C2	
Q. 05	(a)	In the context of large-scale databases, how does the CAP theorem describe the limitations of distributed databases?	1	C2	
	(b)	ACID properties are important principles of database technology. But NOSQL database follow BASE properties. How these set of principles differ?	1	C2	

Invoice ID

Product ID

Unit Price

City

Extended Price

Product Name

Total

Total in Stock

Order Date

Line Items table

Product ID

Product Name

Unit Price

Stock

Category

Discount

Total in Stock

Products table

Use these tables to write the SQL queries for the following statements.

The End

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

**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – THIRD YEAR (5<sup>TH</sup> SEMESTER) 2023, 20-BATCH, B.S (IT)**

**SUBJECT: SOFTWARE REQUIREMENT ENGINEERING**

**Dated: 06.03.2023**

**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
Q. 01	The requirement engineering process involve certain steps that must be followed to collect the entire specifications about the project Explain each of them briefly with suitable example?	1	C1	1	10
Q. 02	Define Requirements Engineering in the Operational Specification Model justify by providing at least one example?	1	C1	1	10
Q. 03	Explain the Framework for Requirements Engineering Processes?	2	C1, C2	2	10

**The End**



SUBJECT: DATABASE SYSTEMS

Dated: 09.03.2023

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																																
Q. 01	<p><b>STUDENT</b></p> <table><tr><th>Names</th><th>Student Number</th><th>Class</th><th>Major</th></tr><tr><td>Khalid</td><td>17</td><td>1</td><td>CS</td></tr><tr><td>Saleem</td><td>8</td><td>2</td><td>CS</td></tr></table> <p><b>COURSE</b></p> <table><tr><th>Course name</th><th>Course number</th><th>Credit hours</th><th>Major</th></tr><tr><td>Intro to Computer Science</td><td>CS1310</td><td>4</td><td>CS</td></tr><tr><td>Data Structures</td><td>CS3320</td><td>4</td><td>CS</td></tr><tr><td>Discrete Mathematics</td><td>MATH2410</td><td>3</td><td>MATH</td></tr><tr><td>Database</td><td>CS3380</td><td>3</td><td>CS</td></tr></table> <p>Specify the following queries in SQL on the above database:</p> <ol style="list-style-type: none"><li>Retrieve the names of all students majoring in 'CS' (computer science).</li><li>Insert a new student, &lt;'Ahmed', 25, 1,'Math'&gt;, in the database.</li><li>Insert a new course, &lt;'Knowledge Engineering', 'CS4390', 3, 'CS'&gt;.</li></ol>	Names	Student Number	Class	Major	Khalid	17	1	CS	Saleem	8	2	CS	Course name	Course number	Credit hours	Major	Intro to Computer Science	CS1310	4	CS	Data Structures	CS3320	4	CS	Discrete Mathematics	MATH2410	3	MATH	Database	CS3380	3	CS	1	C2	2	10
Names	Student Number	Class	Major																																		
Khalid	17	1	CS																																		
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Course name	Course number	Credit hours	Major																																		
Intro to Computer Science	CS1310	4	CS																																		
Data Structures	CS3320	4	CS																																		
Discrete Mathematics	MATH2410	3	MATH																																		
Database	CS3380	3	CS																																		
Q. 02	<p>Read and understand the ERD below, and answer the questions:</p> <pre>graph TD     Supervisors[Supervisors] -- supervises --&gt; Drivers[Drivers]     Cars[Cars] -- operates --&gt; Drivers     Drivers -- has --&gt; Dependents[Dependents]     Drivers -- belongs to --&gt; Division[Division]     Drivers -- has --&gt; DetailProfile[DetailProfile]</pre> <ol style="list-style-type: none"><li>What are the entities in the ERD?</li><li>Translate this ERD to a list of statements. Make sure you address the cardinality and participation using correct terms may, must, one and only one, one or more, etc.</li></ol>	2	C2	3	10																																
Q. 03	<p>Read the following statements and draw the Entity Relationship Diagram using Crow's Foot Notation.</p> <p>The ER Model is as below:</p> <ol style="list-style-type: none"><li>A clinic must have one or more doctors; A doctor may belong to one or more clinics.</li><li>A patient may visit one or more doctors; A doctor may take one or more patients.</li><li>A doctor may have one and only one assistant nurse; An assistant nurse must work for one or more doctors.</li><li>A patient must have one and only one history record; A record must belong to one and only one patient.</li><li>Now you can draw the ER Diagram based on the ER Model.</li></ol>	2	C2	3	10																																

The End





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

**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – THIRD YEAR (5<sup>TH</sup> SEMESTER) 2023, 20-BATCH, B.S (IT)**

**SUBJECT: ADVANCED OBJECT ORIENTED PROGRAMMING**

**Dated: 10.03.2023**

**Maximum Marks: 10**

**Time Allowed: 45 Minutes.**

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

Q. No.	Question	CLO	Taxonomy Level	PLO	Marks
Q. 01	(a) Write differences b/w JAVA and C++.	1	C1	1	03
	(b) List and define at least three features of JAVA.	1	C1	1	02
Q. 02	Define Class, Object, Inheritance, Abstraction and Coupling.	1	C1	1	05
Q. 03	Write JAVA code for the following UML diagram. <pre>classDiagram     class Person {         +name: str         +phoneNumber: str         +emailAddress: str         +purchaseParkingPass()     }     class Address {         +street: str         +city: str         +state: str         +postalCode: int         +country: str         +getAddress()         +setAddress(str)     }     class Student {         +studentNumber: int         +averageMark: int         +getDisplayName()         +getDisplayName()     }     Person --&gt; Address     Student -- &gt; Person</pre>	2	C1	1	05

**The End**



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

**MID-SEMESTER EXAMINATION OF FIRST SEMESTER – THIRD YEAR (5<sup>TH</sup> SEMESTER) 2023, 20 BATCH, B.S (IT)**

**SUBJECT: SYSTEM AND NETWORK ADMINISTRATION**

**Dated: 08.03.2023**

**Maximum Marks: 20**

**Time Allowed: 1 Hour,**

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

Question		CLO	Taxonomy Level	PLO
Q. 01	What is system administration? Discuss the role and responsibilities of a system administrator. Define the responsibilities of following administrators: i) Database Administrator ii) Network Administrator iii) Web Administrator	1	1	2
Q. 02	What are the requirements of a good system administrator? Why documentation is important for a system administrator? Discuss in brief the internal wiki and request / ticketing systems.	1	1	2
Q. 03	Being a system administrator, enlist your responsibilities with respect to user account management, hardware management and backup policies.	1	1	2

**The End**



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

**MID-SEMESTER EXAMINATION OF FIRST SEMESTER - THIRD YEAR (5<sup>TH</sup> SEMESTER) 2023, 20-BATCH, B.S (IT)**

**SUBJECT: IT PROJECT MANAGEMENT**

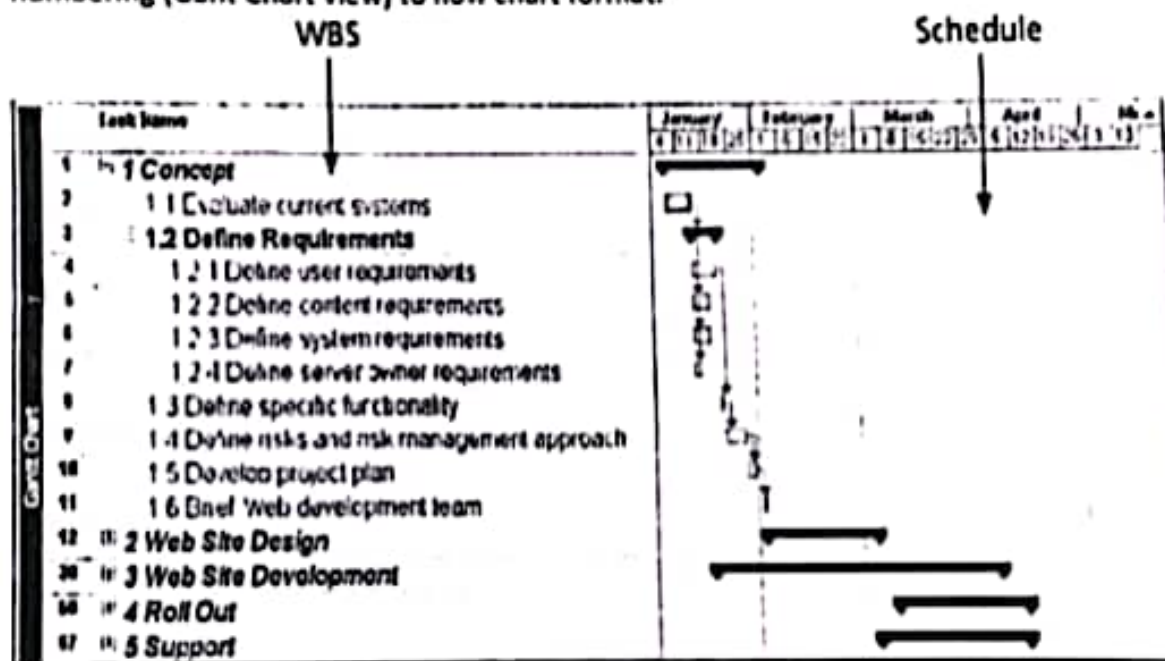
**Dated: 13.03.2023**

**Maximum Marks: 20**

**Time Allowed: 01 Hour.**

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

- Q. 01** (a) Define project management. Illustrate project management framework. 07  
(b) Why Should IT students should study project management? How this course helps you in professional life or career. 03
- Q. 02** (a) Map project management process groups to knowledge areas (Briefly describe what happens in each of the 5 PM process groups). 07  
(b) Describe different methods of requirement collection. 03
- Q. 03** (a) Convert the following diagram of "Intranet Project" from tabular format with PMI numbering (Gant Chart view) to flow chart format. 05



- (b) Draw template of "Kick of meeting agenda".

**Good Luck**