

Course Name & Section _____ Date _____

Student's Name _____ Roll No. _____ Section _____

Rough
Work

Part No.

Q. 5
- a) No, Planning would've helped.
Communication?

- b) Project Manager. He/she would identify which process ~~to~~ model to use and assign tasks to the resources and planned according to schedule.

g) Requirements,
Design,
Coding,
Testing,
Deployment.

h) Tools	
1/2 Maria	ask questions
1/2 Nadia	use case diagrams
1/2 Ali	class diagrams
1/2 Nadleem	user interfaces
1/2 Moeen	develop website
1/2 Haider	testing

e) Tools. Comm: MS. Team, Team View,
Req. Meet / G.R, Zoom / Skype.

F.E Design: Dreamweaver, Illustration,
S/w B.E Design: Figma, Justinmind, Canva.
class diagrams: Rational Rose, Visio, All UML

Req. E/MT: Rational Requisite Pro, ClearQuest
O SRMT.

IDEs. UC Diagram: Visio / MS word.
Implementation: VS Code, Dev C++, Sublime Text

Testing: JUnit, NUnit, etc.

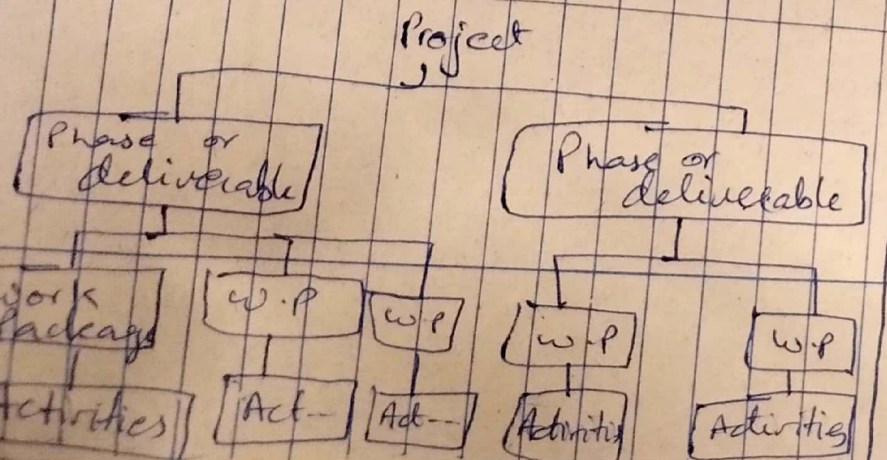
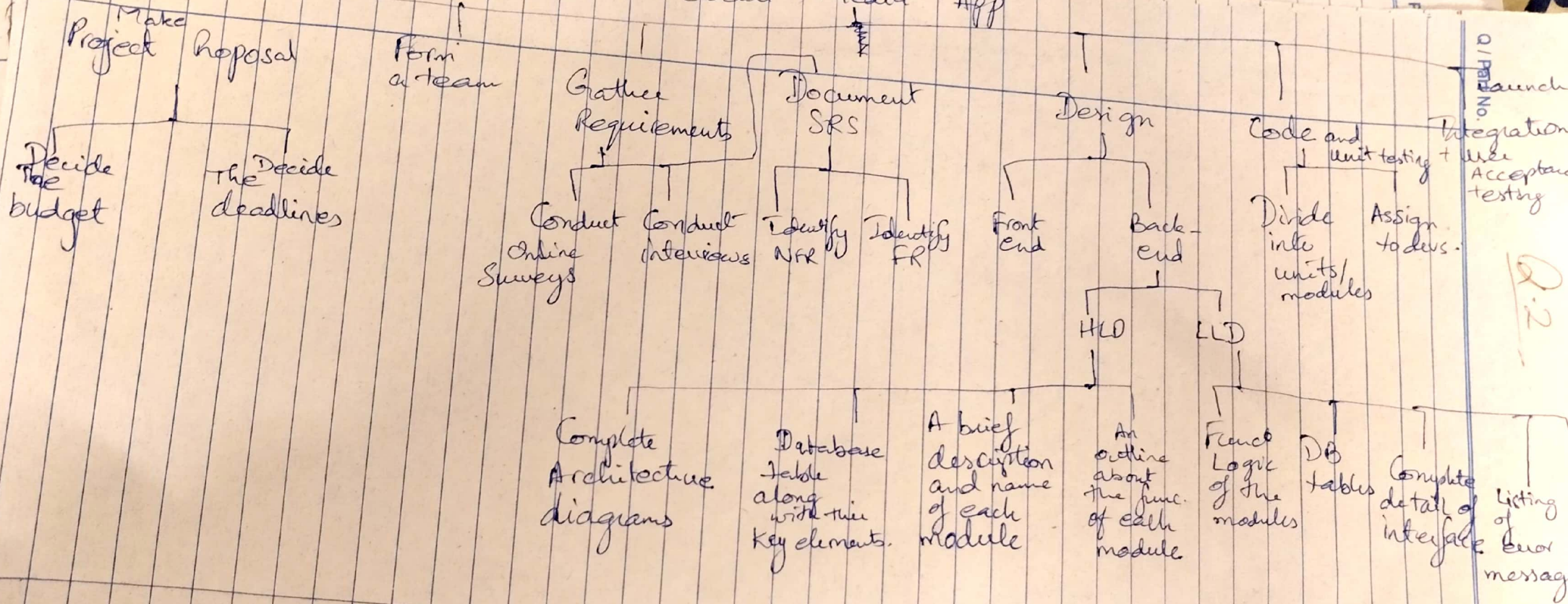
- Q-3, c)
- The owners of the company / investors.
 - The software team.
 - Children (end-users)
 - Parents.
 - Google Playstore.

3, f) corrective maintenance / Technical debt.

3, g) Problems:-

- ① When user reported a ^{missing feature} problem they had to go back to the all ~~SPS~~ and see if it was the previous phases and find out which phase had left out that feature.
- ② Communication Challenges, within team and the stakeholders.
- ③ Lack of documentation / change management / version control.
- ④ Manage client expectations.
- ⑤ ~~Bringing in~~ Doing all the rework within 2 months (Faster).
- ⑥ Incur extra cost which was not planned during estimation.
- ⑦ Convincing the investors to bear the cost.

Social Media App



* A workbreakdown structure should not have around

Rough Work

organize their software team accordingly and divide their work in 30-day time boxes. Using your knowledge about Agile and Scrum, fill in the table below (Parts a – h). [8 marks]

Scrum concept (marked in bold)	Name for this concept
They identified and recorded all the features of the system in order of priority. The features of the product will include placing orders, customizing pizzas, tracking delivery status, and maybe even a loyalty program.	a) <i>Product Backlog</i>
They selected a subset of these features to be developed in each 30 days.	b) <i>Sprint Backlog</i>
The time period of 30 days to develop this subset.	c) <i>time box / Sprint</i>
A fifteen-minute daily meeting to keep everyone on track	d) <i>Scrum / Scrum meeting / Standup meeting</i>
A person in charge of the project , who leads meetings and guides the team in the right direction	e) <i>Scrum Master</i>
A client stakeholder for whom the system is being built and who maintains the feature list with priorities	f) <i>Product Owner</i>
The small group of developers who distribute the work among themselves	g) <i>Scrum team / Dev-team</i>
The work product (an operational software) at the end of each 30 days.	h) <i>Increments / sprint increment / release</i>

CLO#1: Describe the importance of Software Engineering practices in Software Industry

Q5. A software team developing an e-commerce website divided their software development work among their six team members. They had 6 months to develop the software. As soon as the project started, they performed the following actions in parallel: [Total 23 marks]

Ali started making class diagrams, Haider started testing, Maria started asking questions to the prospective end users, Nadeem started making the user interfaces for the website, Moeen started developing the website, Nadia started making the use case diagrams

Keeping this information in mind answer the following questions (Parts a - e):

- Was it the right approach to start all these actions in parallel? If not, which process framework activity would help in arranging them in the right order? (2 marks)
- If we add a person in the software team to aid that process framework activity (identified in part a), what would his/her job role be called? Explain briefly. (3 marks)
- Write down the phases of Waterfall SDLC. (4 marks)
- Identify in which order these actions should have been conducted, if the Waterfall model was to be used. (5 marks)
- Name the software tools to aid each of these activities (one tool per activity). (4 marks)
- If the requirements of the e-commerce website to be developed were unclear and fuzzy, which process model should've been chosen? Write down 2 advantages and 2 disadvantages of that process model. (5 mark)

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MCQ5. The psychological state of "flow" can be best defined as:

- a. It is a state achieved by consuming large amounts of caffeine, to do overtime
- b. For some procrastinators it is a state achieved just before a deadline.
- ☒ c. It is a condition of deep, nearly meditative involvement during work, in which one is largely unaware of the passage of time.
- d. It is a state achieved by customers during the sale season.
- e. It is a condition in which the software team gets when the client is satisfied by their end product.

MCQ6. Quality attributes do NOT include:

- a. Interoperability
- b. Maintainability
- c. Consistency
- ☒ d. Probability
- e. Usability

MCQ7. Which of the following is NOT an advantage of Open Source Software:

- a. Lower costs
- ☒ b. Higher costs
- c. Security
- d. Stability
- e. Flexibility

MCQ8. Ethical practice means:

- a. Inserting bugs into a program
- b. Writing quick and dirty code to meet a schedule
- c. Shipping defective software
- d. Shipping software that does not meet the agreed-upon specifications
- ☒ e. Removing all bugs before shipping the software.

MCQ9. Which of the following is NOT an advantage of the software production process:

- a. It ensures on time delivery
- b. It reduces costs
- c. It improves quality
- ☒ d. It helps in jelling the team
- e. It enables better control

MCQ10. _____, _____, _____ and _____ are the four Ps of project management:

- a. Plan, Provide, Perform, Process
- ☒ b. People, Product, Process, Project
- c. Project, Prepare, Protect, Plan
- d. Perform, Produce, Prepare, Provide
- e. People, Plan, Process, Prototype

Q1.2 Draw the Scope Triangle.

[5 marks]

Q1.3. Write down two unhappy consequences of overtime. Describe each of them in one line.

[4 marks]

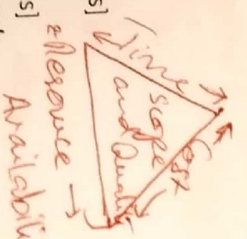
Burnout + High Turnover.

CLO #5 Apply the Divide and Conquer principle to decompose a software project into smaller work items

Q2. Make a Work Breakdown Structure (WBS) for the following scenario:

[15 marks]

An entrepreneur planned to develop a social media app. He needed to get funding from an investor for which he had to make a project proposal to convince the investor that his idea had high growth



Introduction to Software Engineering (SE1001)

Final Exam

Date: May 29th 2024

Course Instructor(s)

Ms. Kiran Khurshid

Total Time (Hrs): 2.5

Total Marks: 90

Total Questions: 5

SOLUTION

11

Roll No

Section

Student Signature

Attempt all the questions. Give to-the-point answers and manage the length of your answer according to the marks allocated to it.

Attempt Q1.1, Q3f) and Q4. on the question paper and attach it with the answer sheet.

CLO #3 Discuss key Software Engineering Principles

Q1.1 MCQs. Choose the most suitable option in the MCQs given below and write down your selected option in the given table. Cutting/overwriting/choosing more than one option will not be accepted. [10 marks]

MCQ1	MCQ2	MCQ3	MCQ4	MCQ5	MCQ6	MCQ7	MCQ8	MCQ9	MCQ10
a	e	b	e	c	d	b	e	d	b

MCQ1. Different activities connected together in a timeline form a path in a software project plan. The critical path is the one in which if an activity gets delayed it will delay the project.

- ☒ a. True
- ☐ b. False

MCQ2. Process framework activities do not include:

- ☐ a. Communication
- ☐ b. Planning
- ☐ c. Modeling
- ☐ d. Construction
- ☒ e. Training

MCQ3. _____ shows how the framework activities and the actions and tasks that occur within each framework activity are organized with respect to sequence and time.

- ☐ a. Class diagram
- ☒ b. Process flow
- ☐ c. Time-box
- ☐ d. Sprint
- ☐ e. Scrum

MCQ4. A project manager's task is/are:

- ☐ a. Innovating
- ☐ b. Directing
- ☐ c. Monitoring
- ☐ d. Staffing
- ☒ e. All of the above

Planning / PM Tools: Jira,
MS Project
Online (Matchware)
Wrike
MS Planner.

f) Prototyping / Evolutionary / Incremental:
∴ Reqs are clear

~~Spinal~~
∴ Reqs. are complete
Users are aware
of their needs.

Q. 3 a) Timeliness — The s/w was delivered
on time but with incomplete
functionality. Bad estimation

② Visibility — They documented up to the
SRS but there was no visibility
beyond it.

②b) Yes, it seems to be waterfall model.
or No, because of low visibility.

c) Because it lacked some functionality
and had bad quality as the user
was dissatisfied.

d) ^{causes} They ~~cor.~~ The software mainly failed
because the user was not kept
involved ~~throughout~~ the development
process.
⑤ The software team did not plan/
estimate well.

Avoiding by : • Using an incremental or
agile process
• ~~Using~~ By better project management
(scheduling + estimation) by assigning someone as a
project manager.