University of Central Punjab
Faculty of Information Technology
Mid Term Exam (CSSE3113): Introduction to Software Development (ISD)

Duration	Semester	Percent Weight	Total Marks
1h 30m	FALL 2022	20%	20

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INSTRUCTIONS

1. This is a **CLOSED BOOK** and **CLOSED NOTES** exam; Cheat sheet is **NOT ALLOWED**.
2. Attach this question paper with your answer sheet.
3. There is a total of **6 questions**, and **2 printed pages (or one page with two printed sides)**.
4. **CALCULATOR SHARING IS NOT ALLOWED.**
5. Providing multiple solutions to a question is not allowed. If multiple answers are found, only the first un-crossed will be checked, and the remaining will be ignored.

Q1. Consider a software development project that consists of the following activities: **[2+2+2]**

- Activity A....15 day   essential before any other work can begin
- Activity B....17 days   must follow A and D and be complete before C starts
- Activity C....14 days   must follow B and be complete by the end of the project
- Activity D....10 days   essential before any other work can begin
- Activity E....12 days   must follow D and G and be complete by the end of the project
- Activity G....8 days   essential before any other work can begin
- Activity H... 9 days   must follow G and be complete before I starts
- Activity I... 11 days must follow H and be complete by the end of the project

For the above-mentioned activities:
- Draw the Activity Graph
- Calculate the Critical Path
- Calculate Early Start, Late Start and Slack Time for all paths

Q2. A Team is developing a software where the following requirements are important: **[2]**
a) Medium-term project commitment,
b) Users are unsure of their needs,
c) Requirements are complex,
d) Want to release software in phase wise
e) Significant changes are expected.

Suggest a software development model for developing such type of software, support your answer with valid reason.

Q3. Consider a 'Login' Page Functionality. [3]
- On entering correct combination of ID, Password and Captcha, user should be able to login successfully.
- On entering correct combination of ID and Password but invalid Captcha, user will be asked to re-enter Captcha.
- On entering correct combination of ID and Captcha but invalid Password, user will be asked to re-enter Password.
- On entering correct ID, but both of Captcha and Password are incorrect, user will be asked to re-enter Password and re-enter Captcha.
- On entering incorrect ID, irrespective of other conditions, user will be displayed INVALID USER error.

Prepare a Decision table for the given scenario.

Q4. Wassermann has given multiple key factors that have changed the software development. One of the factors is TIME TO MARKET. Explain with example how TIME TO MARKET changed software development. [2]

Q5. A software development company ABC is developing a software for XYZ client. The project manager, Mr. Basit, assigned the tasks to the teams as follow: [3]

- The first team consisting of Aneel, Hashim and Babar, shall go to client XYZ for identifying their needs and understand what they are requesting for. After meeting, details are shared with Jawad and Aslam for finalizing the designs based on shared details. Jawad and Aslam shared their document with Kashif and Sajid for the development of System Architecture. They prepared the document and shared it with Ammar and Usama for construction of System. After the construction, the system is handed over to Daniyal and Husnain for checking whether the system meets with the document which was sent by Jawad and Aslam or not. Finally, Umer and Munir help the ABC company to understand the operations of the developed software.

For the ABC company, identify:
- the roles of Team members.
- Phases in which they work for.

Q6. Convert the following requirements: [4]

- On average, 06 cars per minute should enter UCP between 7:45am to 8:15am.
- A normal computer harddisk has mechanical component while solid state drive does not. This ensures fast speed of solid state hard drives.
- Every day on my way to office I count 10 cars.
- I use facebook and watch TV at the same time. This ensures multitasking.

NOTE: If requirement is testable, convert it to not testable, if requirement is not testable, convert it to testable.