



United International University (UIU)

Dept. of Computer Science & Engineering (CSE)

Exam Name: Final Term Exam Trimester: Summer 2024

Course Code: PMG 4101, Course Title: Project Management

Total Marks: 50

Duration: 2 hours

Any examinee found engaging in unfair practices will be expelled from the trimester / program as per UIU disciplinary rules.

Answer all the questions.

Consider the following Scenario:

Suppose you are leading the development of an all-in-one travel management platform with moderate complexity designed to simplify the vacation planning process as a project manager of a team composed of individuals with a mix of experience levels on an ongoing project. The project has relatively simple complexity when handling inputs, outputs, and inquiries. While the core interactions within the system are uncomplicated, the challenges primarily arise in managing the high complexity of internal and external data files and their integration into the system. The platform allows users to enter their preferences, which include dates, locations, and the number of travelers to choose from for available travel services. Users provide personal details during the booking process, and they can also request cancellations or provide feedback after completing their trips. Users can ask the system to view available flights based on their criteria. The system maintains a user database that stores profiles, preferences, and travel histories. Once a user completes a booking, they receive an in-app confirmation for flights. The system generates a detailed trip schedule, including flight details, accommodation check-in/check-out times, and scheduled tour activities. After successful payment, users receive a receipt summarizing the amount, transaction details, and applicable booking reference numbers. The system also maintains a comprehensive log of all booking details for flights, rentals, and tours and keeps track of payment transaction records, including amounts, payment methods, and transaction statuses in the system directory. Users receive real-time notifications (via email or mobile alerts) in case of any changes to their booking status, such as flight delays, cancellations, or room availability. The platform interfaces with external airline, vacation rental, and tour operator databases to retrieve real-time availability and pricing. Furthermore, users can check the status of any bookings (current or past bookings) based on the booking date. Additionally, it integrates with a third-party secure payment gateway to process transactions and handles all types of payments. Now, your team is responsible for handling a combination of strict, well-defined requirements and more flexible, evolving ones. All the technical complexity factors from F1 to F6 are *moderate*; F8 and F9 are *average*, and the remaining technical complexity factors are *significant*. The average line of **code required** per function point is **128**.

1. For the above scenario, calculate the total Function Point value (use tables below, if needed). Determine the project complexity according to COCOMO Model. Find the all the COCOMO parameters for the project mentioned in the scenario according to the project's complexity category.

[CO3] 5+5 = 10

2. How change control board (CCB) is formed for software change control perspective comprising different stakeholders of software development group. Write down the purposes, basic course of events, and alternate paths of Change Control process.

[CO4] 4+6 = 10

3. In the building of a software project scheduling shortly brief on the concept dependencies among the activities. Draw a Gantt chart scheduling for the above project scenario by identifying the tasks and tasks' dependency, assumptions like weekly holidays and government holidays etc. for making the schedule a pragmatic one.

[CO5] 3+7 = 10

4. Discuss the purposes, basic course of events, and alternate path of inspection review technique. Compare among inspection vs. walkthrough review methos with respect to selecting for the given scenario.

[CO4] 6+4 = 10

5. Shortly define KPA concept and it's purposes. If you want to achieve the Level IV - CMMI Maturity Level, what are the compliance/rubrics/guideline you need to follow during a software project development? Discuss the DMAIC principles of six sigma optimization method.

[CO3] 2+4+4 = 10

| Function | | | | PROJECT | | | | |
|----------|--------|-----|---------|--------------|-----|------|-----|------|
| Units | Simple | Avg | Complex | TYPE | a | b | c | d |
| EI | 3 | 4 | 6 | Organic | 2.4 | 1.05 | 2.5 | 0.38 |
| EO | 4 | 5 | 7 | Semidetached | 3.0 | 1.12 | 2.5 | 0.35 |
| EQ | 3 | 4 | 6 | Embedded | 3.6 | 1.20 | 2.5 | 0.30 |
| ILF | 7 | 10 | 15 | | | | | |
| EIF | 5 | 7 | 10 | | | | | |