



# United International University (UIU)

## Dept. of Computer Science & Engineering (CSE)

**Exam Name: Final Term Exam**      **Trimester: Fall 2023**

**Course Code: PMG 4101, Course Title: Project Management**

Total Marks: **40**

Duration: 2 hours

*Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules.*

**Answer all the questions.**

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*Consider the following Scenario:*

You are leading an intermediate project to develop a comprehensive Medical Management System named "**HealthTrack**" for healthcare professionals of Bangladesh. You have a medium sized team consisting of both senior developers and interns. The system aims to streamline and enhance various functions related to patient records, medical inventory, and transactions within the healthcare facility. Breaking down the scenario, healthcare professional can add new patient records to the system, the system allows users for updating existing patient records and enabling users to add new medical items to the inventory. Healthcare professionals can inquire about a patient's medical history and can check the availability of specific medical items. The system generates different types of reports such as patient summary report, medical inventory report and transaction receipts. The patient record will be stored in the database. Patient record includes patient name, gender, date of birth and appointment date. The system maintains a file for tracking medical items where each medical item consists of information like item name, buy date and expiry date. For generating transaction receipts, the Transaction Track table in the database records transaction details, including transaction type, received amounts, and transaction date. The system interfaces with a government-regulated Health Statistics database to retrieve and update public health data. In addition, the system interfaces with a third-party Telemedicine Platform to integrate remote consultation records. Assume that moderate complexity in inputs, outputs, inquiries, and high complexity in external files.

1. Find the DET (Data Element Type) and RET (Record Element Type) for the calculation of ILF (Internal Logical Files) and determine the complexity of ILF for the above scenario. Suppose all the technical complexity factors are Moderate in nature. Determine the Function Point value for the scenario. [CO3]      2+3= 5
2. Define Change Control concept. Discuss the steps (basic course of events) and alternate steps for change management/control those should be followed in a software project management process. [CO4]      1+4 = 5
3. Develop a Gantt chart for the above project scenario and mention the different assumptions or consideration need to be considered (e.g., weekly holidays and government holidays) for making a pragmatic estimation. [CO5]      5

4. Write down the major steps in Inspection review technique (basic flow). Provide a comparative analysis among two of the following review techniques: Code Reviews, and Pair-Programming. [CO4] 2+3 = 5
5. If a project manager wants to achieve the Level V - CMMI Maturity Level, what are the compliance/rubrics/guideline he needs to follow during a software project development. Mention the principle of ISO 9000. [CO4] 3+2 = 5
6. a) Justify the complexity category according to COCOMO of the project described in above scenario. If you want to develop the above mentioned project in “C” language where average lines of code needed for per function point is 128, then find the all the COCOMO parameters. (You have to use the generated function point from Question 1).  
b) Define DMAIC concept in perspective of six sigma optimization method. [CO5] 3+2 = 5

FunctionUnits	Simple	Avg	Complex
EI	3	4	6
EO	4	5	7
EQ	3	4	6
ILF	7	10	15
EIF	5	7	10

PROJECT TYPE	a	b	c	d
Organic	2.4	1.05	2.5	0.38
Semidetached	3	1.12	2.5	0.35
Embedded	3.6	1.2	2.5	0.3

RETS	Data Element Types (DETs)		
	1-19	20-50	51+
1	L	L	A
2 to 5	L	A	H
6 or more	A	H	H

7. Group wise final research report submission and presentation on a contemporary research topic related to software Project Management. The research work must cover problem statement, research objectives, comprehensive literature review, existing methodologies analysis, proposed methodology for solving the problem or research, experimental results and discussions, conclusion and future directions, and references. **(Do not answer this question, already completed in classroom).** [CO6] 10