UNIVERSITI TEKNOLOGI PETRONAS

FINAL EXAMINATION
MAY 2024 SEMESTER

COURSE	:	**TEB2073/TEB3053 - IS PROJECT MANAGEMENT/IT PROJECT MANAGEMENT**
DATE	:	**30 JULY 2024 (TUESDAY)**
TIME	:	**9:00 AM - 12:00 NOON (3 HOURS)**

INSTRUCTIONS TO CANDIDATE

1. This is an open-book final examination. Students can refer to online/offline resources including learning materials, textbooks, and other reading materials to answer the questions.

2. Answer **ALL** questions in the Answer Booklet.

3. Begin **EACH** answer on a new page.

4. Indicate clearly answers that are cancelled, if any.

5. Where applicable, show clearly steps taken in arriving at the solutions and indicate **ALL** assumptions, if any.

6. **DO NOT** open this Question Booklet until instructed.

Note:

i. There are **SEVEN (7)** pages in this Question Booklet including the cover page and the Appendix.

ii. **DOUBLE-SIDED** Question Booklet.

Universiti Teknologi PETRONAS

1. Please read the following scenario and answer the questions

As a Project Manager, you are requested to identify possible risks for a Hospital Management System – Equipment Management (HMS-EM) project. The HMS-EM is an information system that is intended for use in hospitals. Client-server architecture and a centralized database of equipment information will be considered in developing this system.

a. Evaluate **FOUR (4)** types of risks associated with the HMS-EM project. Provide a detailed explanation of each risk type.

[12 marks]

b. Propose mitigation strategies for the identified risks. Analyse how these strategies can minimize the impact on the project.

[8 marks]

2. A project has been defined to contain the following list of activities along with their times for completion:

TABLE Q2: List of activities

Activity No.	Activity	Expected completion time (weeks)	Dependency
1	Requirements collection (T1)	5	-
2	Screen design (T2)	6	1
3	Report design (T3)	7	1
4	Database design (T4)	2	2, 3
5	User documentation (T5)	6	4
6	Programming (T6)	5	4
7	Testing (T7)	3	6
8	Installation (T8)	1	5, 7

a. Construct a graphical representation of the project activities. Use this information to evaluate the critical path and the project completion time.

[10 marks]

b. Assess the flexibility of non-critical activities and determine the allowable delay without affecting the overall project timeline

[5 marks]

c. Discuss the implications of activity dependencies on the project schedule. Provide examples from the given data.

[5 marks]

3. Please read the following scenario and answer the questions.

MEMOIS company is a successful information technology company in the software application development. The company is headquartered in Ampang, Kuala Lumpur. Mr. Muhamad, a senior application development manager in the company, has been assigned as a project manager to manage a new safety-alarm system project. The duration of the project is two years, and software standards will be used in this project. Mr. Muhamad and his team use the Rational ClearCase tool to provide configuration management for hardware and software designs. With the tool's support, it helps the developers to manage changes in their safety-alarm system project. Mr. Muhamad has prepared project communication management to ensure that the project coordination and communication will run smoothly.

a. Propose a change management process model that can be applied in managing changes for the safety-alarm system project and explain how it would be implemented.

[10 marks]

b. Discuss the significance of **TWO (2)** software standards in the context of the safety-alarm system project and explain how software standards can facilitate the implementation of change management process.

[10 marks]

4.   Please read the following scenario and answer the questions.

As a Project Manager, you are requested to identify possible risks for a University Library Management System – Digital Resource Management (ULMS-DRM) project. The ULMS-DRM is an information system intended for use in universities to manage digital resources such as e-books, research papers, and multimedia content. It will employ cloud-based architecture and an integrated user authentication system to ensure secure access to digital resources.

a.   Evaluate FOUR **(4)** types of risks associated with the ULMS-DRM project. Provide a detailed explanation of each risk type.

[12 marks]

b.   Propose mitigation strategies for the identified risks to minimize the impact on the project.

[8 marks]

5. Read the following description and answer all the questions below using the COCOMO model.

Consider a database system needed for an office automation project. This project is neither a complex nor simple system. The personnel cost is $1300 per person/month. The requirements document shows 4 modules needed and sizes are estimated as follows:
- Data entry: 6000 LOC
- Data update: 7000 LOC
- Query: 9000 LOC
- Report generator: 8000 LOC

The project manager rates project details as follows; all others are nominal (1.0):
- Product Complexity: low
- Database size: high
- Storage Constraint: high
- Applications Experience: high
- Programmer capabilities: high

[**NOTE:** Please refer to Appendix for additional information.]

a. Assess the project type for the office automation database system and calculate the total effort in person-months using the COCOMO model.

[8 marks]

b. Estimate the development time for the project in months and compute the total cost, explaining the significance of the calculated cost.

[7 marks]

c. Appraise the importance of accurate cost estimation in project management.

[5 marks]

-END OF QUESTION-

SOFTWARE PROJECTS	A	B	C	D
Organic	2.4	1.05	2.5	0.38
Semi Detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

SOFTWARE PROJECTS	A	B
Organic	3.2	1.05
Semi Detached	3.0	1.12
Embedded	2.8	1.20

Project Characteristics Table

Cost adjustments for computing the EAF (Effort Adjustment Factor)

	v.low	low	nominal	high	v.high	ex.high
product attributes						
required software reliability	0.75	0.88	1.00	1.15	1.40	
database size		0.94	1.00	1.08	1.16	
product complexity	0.70	0.85	1.00	1.15	1.30	1.65
computer attributes						
execution time constraints			1.00	1.11	1.30	1.66
main storage constraints			1.00	1.06	1.21	1.56
virtual machine volitility	0.87	1.00	1.15	1.30		
computer turnaround time		0.87	1.00	1.07	1.15	
personnel attributes						
analyst capability	1.46	1.19	1.00	0.86	0.71	
applications experience	1.29	1.13	1.00	0.91	0.82	
programmer capability	1.42	1.17	1.00	0.86	0.70	
virtual machine experience	1.21	1.10	1.00	0.90		
programming language experience	1.14	1.07	1.00	0.95		
project attributes						
use of modern programming practices	1.24	1.10	1.00	0.91	0.82	
use of software tools	1.24	1.10	1.00	0.91	0.83	
required development schedule	1.23	1.08	1.00	1.04	1.10	