



UNDERGRADUATE UNIVERSITY EXAMINATIONS

SCHOOL OF MANAGEMENT AND LEADERSHIP

DEGREE OF BACHELOR OF ARTS IN DEVELOPMENT STUDIES

PMT 302: PROJECT MANAGEMENT TOOLS AND TECHNIQUES

DATE: 15TH APRIL 2026

DURATION: 3 HOURS

MAXIMUM MARKS: 70

INSTRUCTIONS:

1. Write your registration number on the answer booklet.
2. **DO NOT** write on this question paper.
3. This paper contains **SIX (6)** questions.
4. Question **ONE** is compulsory.
5. Answer any other **THREE** questions.
6. Question **ONE** carries **25 MARKS** and the rest carry **15 MARKS** each.
7. **Write all your answers in the Examination answer booklet provided.**

QUESTION ONE

Read the Case Study below carefully and answer the questions that follow:

SOLAR HOME PROJECT - PLANNING AND RESOURCE MANAGEMENT

Solar Home Ltd., a mid-sized renewable energy company in Kenya, aims to launch a new line of affordable solar panels for rural households. The management recognizes that effective project planning and proper resource management are essential for the success of the project. To design, produce, and distribute 1,200 solar panels within six months, ensuring quality, cost-effectiveness, and timely delivery.

Project Planning:

- i. **Defining Scope:** Key deliverables include solar panel prototypes, production schedule, marketing campaign, and distribution strategy.
- ii. **Timeline & Scheduling:** A Gantt chart mapped all activities: R&D, production, quality testing, marketing, and distribution.
- iii. **Risk Assessment:** Risks identified include supply delays, equipment breakdown, and budget overruns. Contingency plans were prepared.
- i. **Resource Allocation:**
 - ii. **Human Resources:** Engineers, production staff, marketing personnel, and logistics teams were assigned specific roles.
 - iii. **Financial Resources:** A budget of KES 12 million was allocated for materials, labor, marketing, and contingency.
 - iv. **Material Resources:** Contracts were finalized with suppliers for solar cells, batteries, and installation kits to ensure timely delivery.

Implementation:

Weekly progress reviews using project management software ensured adherence to timelines and budget. Regular team meetings promoted clear communication and swift problem-solving.

Outcome:

The project was completed on time, within budget, and achieved high customer satisfaction. Key success factors included proactive risk management, clear role assignments, and efficient use of resources.

Required:

- a) Imagine you are the project manager for the SolarHome project. Explain how effective project planning could influence the success of the project and describe the steps you would take to ensure it is well-planned **(10 Marks)**
- b) Using the SolarHome project case study, identify and explain the strategies that helped ensure efficient use of resources. Support your answer with examples from the project. **(5 Marks)**
- c) Referring to the SolarHome project case study, explain how the project team could have responded if a major supplier failed to deliver materials on time. Include specific strategies to mitigate such delays. **(10 Marks)**

QUESTION TWO

- a) Examine important factors that managers should take into account when estimating projects to ensure that the dates are both realistic and reachable **(7 marks)**
- b) Given the following activities with their optimistic, most likely, and pessimistic time estimates, calculate the expected time for each activity and determine the project duration using PERT: **(8 Marks)**

Activity	Optimistic (O)	Most Likely (M)	Pessimistic (P)
A	2	4	6
B	3	5	9
C	1	2	3

QUESTION THREE

- a) Referring to a project you are familiar with; identify three key performance indicators (KPIs) you would use to monitor its progress and success. Explain how

each KPI would provide insights into the project's advancement and help in decision-making. **(6 marks)**

- b) Describe strategies that have been or could be implemented to encourage a constant exchange of innovative ideas among employees **(9 marks)**

QUESTION FOUR

- a) Using a company you are familiar with, develop a sustainability plan it could implement. In your answer, identify specific strategies or actions for environmental protection, social responsibility, and long-term economic viability, and explain how each strategy could be monitored for effectiveness. Support your response with examples from the company or similar organizations **(7 marks)**

- b) Describe the significance of creating a sustainability plan. In your answer, explain how the plan supports operational efficiency, enhances corporate reputation, and ensures long-term growth. **(8 marks)**

QUESTION FIVE

- a) Explain three typical accountability problems that project managers run with throughout the course of a project **(9 marks)**

- b) Enumerate techniques you would employ to successfully address and reduce accountability challenges, explaining how each technique would improve project transparency and trust among stakeholders **(7 Marks)**

QUESTION SIX

- a) Evaluate the main steps or stages included in the Project Cycle Management (PCM) process **(12 marks)**

- b) Using a project you are familiar with, describe project scheduling and explain how it was applied to allocate resources, set timelines, and monitor progress **(3 marks)**