Occupational Certificate: Project Manager

SAQA ID 101869 | NQF Level 5 | 240 Credits

Knowledge Module 04 — Project Time Management

NQF Level 5 | 8 Credits

SUMMATIVE ASSESSMENT

Open-book Knowledge Assessment — completed individually at the end of the Knowledge Module

Learner name: _____ **Date:** _____

Facilitator/Assessor: _____

Assessment Information

Time allowed: [to be confirmed by the facilitator]
Core total: 100 marks (Questions 1–7) **Pass mark:** 70% (70/100) — confirm against your provider's assessment strategy
Bonus: up to 20 additional marks (Case Study) — added to your raw score for Questions 1–7 and does not count against you

Instructions to the learner

- This is an OPEN-BOOK assessment — you may refer to your Knowledge Module Guide and your own notes, but it must be completed individually, without discussing answers with other learners.
- Answer ALL questions in Section 1–7 in the spaces provided; the number of marks is shown after each question and indicates how much detail is expected.
- Where a question asks for a specific number of items (e.g. "any three"), only that number will be marked — do not exceed it.
- The Bonus Case Study at the end is optional but strongly encouraged — because this is an open-book test, it is designed to check that you can apply what you've learned, not just find it in the Guide.
- Write clearly. Marks are awarded for accurate, relevant content, not length.

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Question 1 — KT 01 — Plan Schedule Management (15 marks)

1.1 Define "Plan Schedule Management" and state its key benefit. **[3 marks]**

1.2 List any FOUR of the ten benefits of planning in project management described in the Guide. **[4 marks]**

1.3 Name the FOUR source documents used to plan schedule management. **[4 marks]**

1.4 True or False, with justification: The Schedule Management Plan (SMP) is the actual project schedule itself, containing the baseline dates for each activity. **[2 marks]**

1.5 Name the tool/technique described in the Guide for planning schedule management, and list any TWO of the sources from which this expertise may be provided. **[2 marks]**

Question 2 — KT 02 — Define Schedule Activities (10 marks)

2.1 Name the three most common types of project schedules described in the Guide. **[3 marks]**

2.2 Define what a "milestone" is, according to the Guide. **[2 marks]**

2.3 List the FOUR inputs to the process of defining schedule activities. **[2 marks]**

2.4 List any THREE of the tools/techniques used to define schedule activities. **[3 marks]**

Question 3 — KT 03 — Sequence Activities (15 marks)

3.1 Define "Sequence Activities" and state its key benefit. **[3 marks]**

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3.2 Name the FOUR types of logical relationship used in the Precedence Diagramming Method (PDM), and briefly define ONE of them. **[4 marks]**

3.3 Distinguish between a lead and a lag. **[4 marks]**

3.4 Name any THREE of the four types of dependency, and give ONE example of a mandatory dependency mentioned in the Guide. **[3 marks]**

3.5 True or False: Out of the four types of Project Dependency, only two are ever applicable to a given Project Relationship at the same time. **[1 mark]**

Question 4 — KT 04 — Estimate Activity Resources (15 marks)

4.1 Define "Estimate Activity Resources" and state its key benefit. **[3 marks]**

4.2 List any FOUR of the six inputs used in the process of activity resource estimating. **[4 marks]**

4.3 Name the FIVE tools and techniques used to estimate activity resources. **[5 marks]**

4.4 Name the THREE outputs of the Estimate Activity Resources process. **[3 marks]**

Question 5 — KT 05 — Estimate Activity Duration (15 marks)

5.1 Name any FOUR of the five PMBOK-mentioned methods for estimating activity duration. **[4 marks]**

5.2 Write out the PERT (three-point estimating) formula for expected time, and define each term used in it. **[3 marks]**

5.3 Distinguish between "validated deliverables" and "accepted deliverables". **[4 marks]**

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5.4 Name the FOUR outputs of the activity duration estimation process. **[4 marks]**

Question 6 — KT 06 — Develop Schedule (15 marks)

6.1 Define "Develop Schedule" and state its key benefit. **[2 marks]**

6.2 Name any FOUR of the seven steps for developing a project Master Schedule, in the order they must be undertaken. **[4 marks]**

6.3 Distinguish between "crashing" and "fast-tracking" as schedule compression techniques. **[3 marks]**

6.4 List any THREE of the characteristics a schedule must possess to be effective, according to the Guide. **[3 marks]**

6.5 Name any THREE of the five major scheduling techniques surveyed in the Guide. **[3 marks]**

Question 7 — KT 07 — Control Schedule (15 marks)

7.1 Define "Controlling Schedule" and state what it helps reduce when managed well. **[3 marks]**

7.2 Name the FOUR project baselines described in the Guide. **[4 marks]**

7.3 List any FOUR of the inputs to the process of controlling a project schedule. **[4 marks]**

7.4 Distinguish between "resource levelling" and "resource smoothing", and state which of the two typically changes the project's critical path. **[4 marks]**

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★ Bonus Question — Case Study

20 bonus marks (added to your raw score for Questions 1–7; not required to pass)

Case Study: The Dithaba Digital Learning Hub

Kwena Construction has been appointed to build and equip a new digital learning hub for a rural high school, including a small computer lab. Kwena's project team drew up an activity list before work began. The events below happened, in order, over the life of the project.

The events, in order:

- Before the classroom walls could be built, the concrete foundation slab first had to be laid and cured — there is no way to build the walls without a completed foundation underneath them.
- Kwena's own bricklaying team started building the classroom walls, and on the same day a separate Kwena team started building the perimeter security fence. There was no technical reason the fence team could not have started earlier or independently, but the site supervisor preferred to have fencing go up only once wall-building had begun, purely as a matter of site-security preference.
- Kwena's electricians could not begin any wiring work until the municipality's electricity department had inspected and formally energised the site connection — a step controlled entirely by the municipality, a party outside Kwena's own project team.
- Inside the computer lab, the server cabinet first had to be fully painted and left to cure before Kwena's own IT team could mount the server racks inside it — both of these tasks were carried out by Kwena's own people, with no outside party involved.
- Window installation had originally been planned to start only once wall plastering was 100% complete, but because plastering still had slack in the schedule, the site supervisor allowed the window-fitting team to begin measuring and pre-fitting window frames two days before the very last section of plaster was due to finish drying.
- A purchase order for the computer lab's IT equipment was placed with an outside supplier, whose delivery slip confirmed that the equipment would only arrive 10 working days after the order was placed. That 10-day wait was built into the schedule as time that had to pass before the "install IT equipment" activity could start — no Kwena resources were used or consumed during that wait.
- Midway through the project, the project manager noticed the electricians were behind the schedule baseline because a small crew had been double-booked onto another Kwena site that same week. She shifted their start dates within the float already available to that activity, without changing the overall project finish date, in order to keep demand for electricians level from week to week.
- With the school's opening day fixed and non-negotiable, Kwena's site manager assigned two additional bricklaying teams to the wall-building activity so that it would finish in half the originally planned time, accepting the extra labour cost involved.
- Throughout the project, the wall-plastering activity turned out to have zero float — any delay to it would delay the whole handover date, so the project manager tracked it, together with the project schedule and schedule data, at every weekly review against the approved schedule baseline.

Use the scenario above, together with what you have learned in this Knowledge Module, to answer the following:

B1 Identify THREE different types of dependency illustrated in the scenario (choose from Mandatory, Discretionary, External, Internal). For each one, name the type, identify the matching pair of activities, and give a one-line justification. **[6 marks]**

B2 The window-installation activity started two days before wall plastering finished, while the IT equipment installation had to wait a full 10 working days after the purchase order was placed, with no resources used

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during that wait. Name and explain the scheduling term that applies to EACH of these two situations. **[4 marks]**

B3 Name the schedule compression technique the site manager used when he assigned two extra bricklaying teams to wall-building. Distinguish this technique from the alternative schedule compression technique, and state the added risk that comes with the alternative. **[4 marks]**

B4 When the project manager shifted the electricians' start dates to keep resource demand level without changing the project finish date, which resource optimisation technique was she using? Justify your answer with reference to what happened to the critical path. **[3 marks]**

B5 The project manager tracked wall-plastering, the project schedule and schedule data at every weekly review against the approved schedule baseline. Name TWO of the input documents to Control Schedule that this describes her using. **[3 marks]**

Core total: 100 marks | Bonus: up to 20 marks | Maximum possible: 120 marks

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