Occupational Certificate: Project Manager

SAQA ID 101869 | NQF Level 5 | 240 Credits

Knowledge Module 05 — Project Cost 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 1–4) **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 1–4 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 1–4 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 Cost Management (20 marks)

1.1 Define "cost" in your own words, and state how the PMBOK® Guide (as quoted in the Guide) defines Project Cost Management. **[4 marks]**

1.2 Name, in order, the FOUR processes of Project Cost Management listed in the Guide. **[4 marks]**

1.3 List any THREE of the Seven Principles of Effective Cost Management named in the Guide. **[3 marks]**

1.4 List any FOUR of the benefits of cost management planning described in the Guide. **[4 marks]**

1.5 True or False, with justification: In the 4th Edition of the PMBOK® Guide, the terms "precision" and "accuracy" (as elements of the cost management plan) were sometimes muddled, and the 5th Edition corrected the distinction between them. **[2 marks]**

1.6 Name the THREE tools and techniques for cost management planning identified in the Guide, and briefly state the purpose of ONE of them. **[3 marks]**

Question 2 — KT 02 — Estimate Costs (20 marks)

2.1 Define a "cost estimate," and state what a "basis of estimate" report contains. **[4 marks]**

2.2 Distinguish between direct costs and indirect costs, giving one example of each from the Guide. **[4 marks]**

2.3 List any FOUR of the categories of project expense named in the Guide. **[4 marks]**

2.4 Calculate the three-point cost estimate using the Guide's formula (O + (4 × ML) + P) / 6, given a roofing job with an Optimistic estimate of R7,000, a Most Likely estimate of R10,000 and a Pessimistic estimate of R16,000. Show your calculation. **[3 marks]**

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2.5 Name any THREE of the ten cost-estimation tools and techniques listed in the Guide (other than Three-Point Estimation). **[3 marks]**

2.6 True or False, with justification: Analogous estimating is generally more accurate than bottom-up estimating. **[2 marks]**

Question 3 — KT 03 — Project Budgeting Concepts (30 marks)

3.1 Define "project budgeting" in the Guide's own terms. **[2 marks]**

3.2 State the TWO key reasons the Guide gives for why the project budget is important. **[4 marks]**

3.3 List any FOUR of the six pieces of information the Guide says you need to prepare a project budget. **[4 marks]**

3.4 Name the FIVE tools and techniques for determining a budget listed in the Guide. **[5 marks]**

3.5 Distinguish between contingency reserve and management reserve, using the Guide's definitions, and state which of the two the PMBOK® Guide does NOT formally define. **[6 marks]**

3.6 In the Guide's childcare-centre playground example, a plumber's newly installed pipe develops a hairline crack that is only discovered after the drywall has been put up and painted, requiring the drywall to be removed, the pipe replaced, and the drywall replaced/repainted. Would this be paid for using contingency reserve or management reserve? Justify your answer. **[3 marks]**

3.7 Name the THREE outputs of the Determine Budget process listed in the Guide. **[3 marks]**

3.8 True or False, with justification: The cost baseline and the total project funding requirements are the same thing. **[3 marks]**

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Question 4 — KT 04 — Control Costs (30 marks)

4.1 Name, in order, the FOUR process levels used in the Cost Function chart described in the Guide. **[4 marks]**

4.2 List all FOUR of the areas the Guide says a project manager should keep an eye on when practising efficient cost management. **[4 marks]**

4.3 List any THREE of the FIVE tips the Guide gives for successfully managing a project budget and maintaining cost control. **[3 marks]**

4.4 List any THREE of the FOUR benefits of cost-control management outlined by Doeren Mayhew's CPAs and business advisors, as quoted in the Guide. **[3 marks]**

4.5 (a) List any TWO items of information typically found on a source document, per the Guide. (b) Name any TWO examples of source documents given in the Guide. **[4 marks]**

4.6 Distinguish between a Cost Breakdown Structure (CBS) and a Work Breakdown Structure (WBS), as described in the Guide. **[3 marks]**

4.7 In the Guide's worked example, a project is eight months into a year-long, R100,000 project. The baseline says 65% of the budget should have been spent; the earned value calculation indicates two-thirds of the work is complete; and R65,000 has actually been spent. Explain how a project manager uses the budget, schedule, baseline and earned value together to judge whether this project is on track, and state what the project manager must do if these values diverge instead. **[4 marks]**

4.8 True or False, with justification: According to the Guide, the activities associated with cost control are universal and identical across all Project Management function charts. **[2 marks]**

4.9 What does the Guide say cost management is "the subset of"? Briefly explain, in the Guide's own reasoning, why the ability to control simple costs matters for a project manager handling complex projects. **[3 marks]**

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★ Bonus Question — Case Study

20 bonus marks (added to your raw score for Questions 1–4; not required to pass)

Case Study: The AgriCool Cold-Storage Facility

AgriCool Engineering was contracted to build a refrigerated cold-storage facility for a farmers' cooperative. The project charter has been signed, and the team is now finalising its cost estimates and budget before moving into construction. The following events happened, in order:

Early on, before detailed design was available, the estimator took the final cost of a similar cold-storage project completed two years ago and adjusted it for the size of the new site to produce a rough, early cost figure.

- Once the mechanical contractor's productivity rate for installing refrigeration piping became available (expressed as metres of pipe installed per day), the team recalculated the piping cost using the formula: Activity cost = Units of work in the activity / Productivity rate of the resources.
- Because the specific compressor units specified for this facility are new to the firm, with no comparable past project to draw on, the estimator gathered three figures from specialists: an Optimistic cost of R180,000, a Most Likely cost of R240,000, and a Pessimistic cost of R360,000.
- The project sponsor approved a cost baseline of R2,000,000 and set aside an additional 8% of that baseline specifically to cover the risks already recorded in the project's risk register (for example, cold-chain equipment import delays).
- Two months into construction, a design fault was discovered in wall insulation panels that had already been installed — unplanned, in-scope rework that nobody had identified as a risk beforehand — and additional funding had to be authorised to fix it.
- At the six-month review, the schedule baseline indicated that 40% of the R2,000,000 budget should have been spent by this point. The team's earned value calculation showed that only 30% of the physical work was actually complete, yet the accounts showed that R900,000 (45% of the budget) had already been paid out.
- To support that month's payment run, AgriCool's finance officer pulled together the relevant supplier invoices and site staff time cards.

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

B1 Name the cost-estimating technique used in the second event (the adjusted figure from the earlier similar project), and state the condition under which the Guide says this technique is most reliable. **[3 marks]**

B2 Name the cost-estimating technique used in the third event (the piping cost calculated from a productivity rate), and state ONE advantage of this technique listed in the Guide. **[3 marks]**

B3 Using the Guide's three-point estimating formula (O + (4 × ML) + P) / 6 and the Optimistic (R180,000), Most Likely (R240,000) and Pessimistic (R360,000) figures given for the compressor units, calculate the three-point cost estimate. Show your calculation. **[4 marks]**

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B4 Distinguish between the 8% risk set-aside in the fourth event and the additional funding needed for the insulation rework in the fifth event, naming the correct type of reserve for each and stating which one forms part of the cost baseline. **[4 marks]**

B5 At the six-month review, is AgriCool's project on track? Using the Guide's earned value logic (comparing baseline expected spend, earned value/work complete, and actual spend), explain what the figures show and what the project manager should do next. **[4 marks]**

B6 Name TWO source documents from the Guide's list that the finance officer would have used to support the month's payment run in the final event, and state which business transaction each one supports. **[2 marks]**

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

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