



**Strathmore**  
UNIVERSITY

## **STRATHMORE UNIVERSITY BUSINESS SCHOOL**

MASTER OF SCIENCE IN DEVELOPMENT FINANCE

**END OF SEMESTER EXAMINATION**

**MDF 8109: PROJECT FINANCE AND MANAGEMENT**

**Date:** Thursday, 18<sup>th</sup> October 2018

**Time:** 3 Hours

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### **Instructions**

1. This examination consists of **FIVE** questions.
2. Answer Question **ONE** and **TWO** and **ANY OTHER TWO** questions.
3. You are expected to work independently

### **Question 1 (Compulsory) (25 Marks)**

Strathmore University is evaluating the possibility of using project finance to construct hostels that will meet the growing demand for accommodation by its students. The plan is to have a 5-floor building with 100 rooms on each floor accommodating 4 students per room. Each student will pay about sh. 10,000 per month but due to seasonality occupancy is expected to be at 75% p.a. The building is estimated to cost sh.1 billion. Using a Debt: Equity ratio of 80%:20%, any financing cost will have interest of about 15%. Assume that the project is tax exempt as per an agreement with the Kenyan government. Strathmore plans to finance the whole equity in the project and identify providers of debt. Operational costs are estimated at 50% before considering return to debt and equity holders. The debt providers are expected to operate the hostels until the debt is paid, then Strathmore will take over the management of the Hostels. The agreement is that any excess amounts after financing the debt will be paid to Strathmore. It is estimated that construction will be completed in the next two years and then operations commence immediately until about 10 years when the debt is fully paid.

### **Required**

- a) Explain briefly **THREE** benefits and **THREE** challenges of Strathmore using project finance for this project **(12 Marks)**

- b) Draw / Write up a simple structure for the project and explain the role of **FOUR** main participants in the project **(8 Marks)**
- c) Identify **FIVE** sources of finance for debt that Strathmore can use in financing the Project **(5 Marks)**

**Question 2(Compulsory) (25 Marks)**

- a) In the Strathmore project given above (see Question 1), identify **TWO** (One strategic and one operational) project risks during construction and **TWO** (One Strategic and one operational) strategic project risks during operation. Explain the likelihood of the risks arising and their severity using a scale of 1-5 and then recommend the risk mitigation strategies that can be used to address these risks. **(16 Marks)**
- b) The Nairobi County government is in talks with Strathmore to consider increasing the scope of the project by constructing more than three buildings that can accommodate more University students, especially those from public Universities within the Nairobi County. Describe **FIVE** issues that will be considered by the Nairobi county in its due diligence when appraising the PPP **(9 Marks)**

**Question 3 (20 Marks)**

You have been assigned the Project Manager tasked with planting trees on the plot of land behind the company's new factory. The plan:

- 30 batches of 20 trees (600 trees)
- 5 batches per day (100 trees)
- Budgeted cost per tree is Kshs. 290 (Kshs. 250 per baby tree / Kshs. 40 for the slow release fertilizer)
- The total budget provided is Kshs. 174,000

**After the first day** only 70 trees have been planted (the team hit a patch with stones that had to be removed before the trees could be planted). The total cost spent was Kshs 35,000 (the team had to rent a special machine to help remove the stones which cost Kshs 14,700 for the day)

You are required to report to the steering committee on performance and determine how much time and cost remain.

**Required:**

Using the various Earned Valued Management (EVM) formulas, prepare the report that includes the following

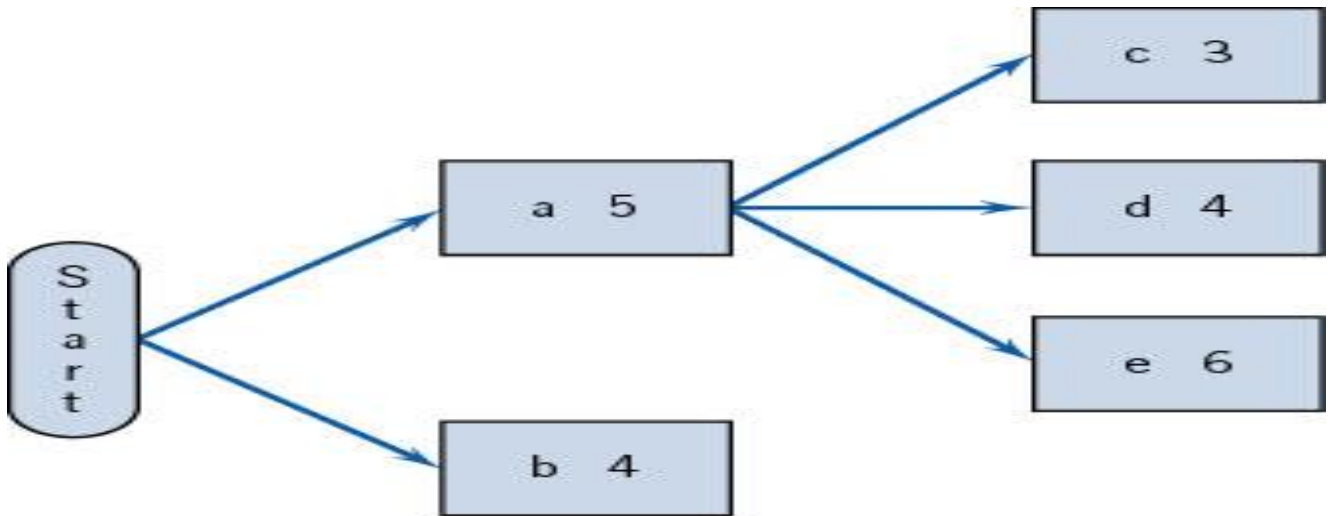
- a) Budgeted Cost (3 Marks)
- b) Earned Value. (3 Marks)
- c) Cost Variance (amount and %) (4 Marks)
- d) Schedule Variance (amount and %) (4 Marks)
- e) Estimate at Completion (cost and schedule) (6 Marks)

**Question 4 (20 Marks)**

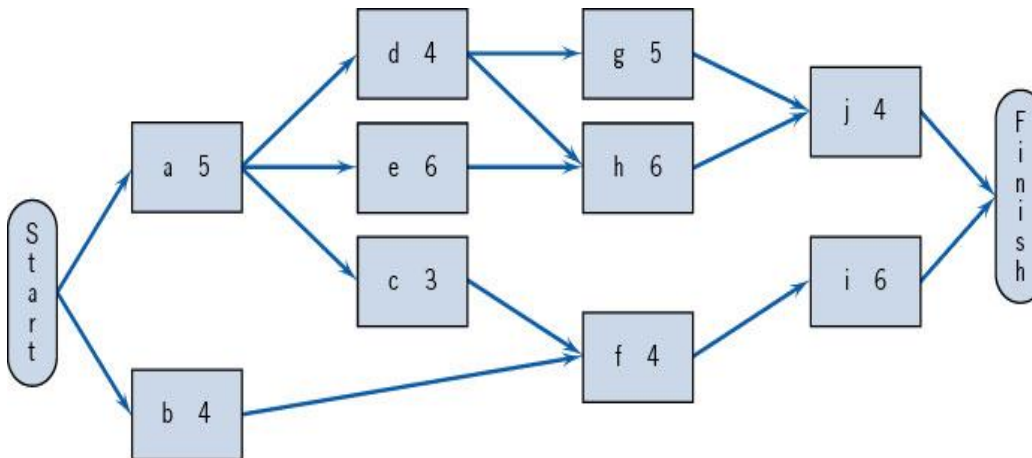
Project Managers have to constantly make decisions about tasks in the critical path of their projects. Mwangay, the Project Manager at a steel manufacturing company is reviewing the following tasks based on the critical path table shown below

Activity	Predecessor or	Duration
a	--	5 days
b	--	4
c	a	3
d	a	4
e	a	6
f	b, c	4
g	d	5
h	d, e	6
i	f	6
j	g, h	4

He has completed Stage 1 of building the network diagram for tasks a, b, c, d, e as shown below.



- a) Define the Critical Path Method and discuss how (CPM) is used by Project Managers? **(10 Marks)**
- b) Mwangay needs to complete the critical path diagram for tasks f, g, h,, i, j and has asked for your assistance. Draw the final network diagram for Mwangay. **(10 Marks)**



**Question 5 (20 Marks)**

- a) As a Project Manager, you have been asked to present to the Project Steering Committee dependency determination as part of the sequencing of activities. Identify and discuss the three kinds of dependencies. Use examples to illustrate you point **(6 Marks)**

- b) In addition, the Project Team is curious to understand the concepts of “leads and lags”. To assist your Project Team, define leads and lags; giving examples of each. **(8 Marks)**
- c) The Board has asked you to explain the different between the two reserves normally added to your Project Budget every time you present the Project Budget. Identify the two (2) types of reserves and discuss each **(6 Marks)**