

# THE NATIONAL UNIVERSITY OF LESOTHO

## DEPARTMENT OF GEOGRAPHY & ENVIRONMENTAL SCIENCE

### ES 431 PROJECT PLANNING & IMPLEMENTATION FOR ENVIRONMENTAL SCIENCE

#### B.Sc. SUPPLEMENTARY EXAMINATIONS

**AUGUST 2012**

**MARKS: 100**

**TIME: 3HRS**

INSTRUCTIONS: Answer **any four** questions

1. Mokoko plc has recently raised M350 000 from shareholders and the directors are considering three ways of using these funds for the benefit of shareholders. Three projects A, B and C are being considered, each involving the immediate purchase of equipment costing M350 000. Only one project can be undertaken and the equipment for each project will have a useful life equal to that of the project, with no scrap value. The company employed Mokoena to appraise the three projects and recommend the one that the company should choose. Mokoena favours Project C, so in his report he recommends Project C because it shows the highest internal rate of return. The following summary is taken from Mokoena's report:<sup>1</sup>

Project	Net Cash flows ('000) years									Internal Rate of return
	0	1	2	3	4	5	6	7	8	
A	-350	100	110	104	112	138	160	180	-	27.5
B	-350	40	100	210	260	160	-	-	-	26.4
C	-350	200	150	240	40	-	-	-	-	33.0

The chairman of Mokoko plc is accustomed to projects being appraised in terms of their net present values and he is consequently suspicious of the use of the internal rate of return as a method of project selection. Accordingly, the chairman approaches you for an independent report on which project to select using the net present value method.

#### YOUR TASK:

Prepare a thoroughly argued advisory report to the chairman advising him on which project to select using the net present value method. The company's cost of capital is 20%. [NB. Round discount factors to the nearest two decimal points] **[25]**

2. The table below lists the activities associated with a hypothetical dairy project involving the construction of a farmhouse. The activities are already logically sequenced.

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<sup>1</sup> Question adapted from Lumby, S. (3<sup>rd</sup> Ed) (1990) Investment appraisal and financing decisions. London: Chapman & Hall.

Preceding Activity	Activity	Duration (weeks)
None	A	6
A	B	8
B	C	5
B	D	4
C	E	14
C	F	9
C	G	6
D, E, F & G	H	5
D	I	6
I	J	11
H, J	K	8

**TASK:**

- i) Construct a network diagram [activity-on-node method] for the farmhouse construction process. [NB. Construction start time is considered as week 0] (10)
  - ii) How many weeks will it take to complete the construction of the farmhouse (3)
  - iii) Identify the CRITICAL PATH and say what it means (4)
  - iv) Briefly indicate the value of project network results in project implementation planning. (8) **[25]**
4. With reference to “The Bovine-Mystique (Fergusson, 1990) or any project with which you are most familiar (indicate full reference), discuss how any one component of the project environment might impact on the success or otherwise of a development project. **[25]**
5. With the aid of examples, show how cost benefit analysis is linked to the following welfare economic theories:
  - i) Public/merit goods (13)
  - ii) Externalities (12) **[25]**
6. You are working for an NGO that is about to provide food relief to an area that has suffered its worst drought in living memory. Not all households in this area are in need of relief food, but your NGO does not know which households are in need. You are asked to prepare a short brief advising the NGO on how to identify those households that need relief food most. With the aid of practical examples from your reading, explain the approach you would emphasize in your brief and the reasons for suggesting this approach. **[25]**
7. You are employed in the Planning and Development Department of the Roma Urban Council. The Planning and Development Committee is working on proposals to improve solid waste disposal in Roma. Public-Private Partnerships (PPPs) are suggested as a possible option. You are asked to prepare a concept note on PPPs to be discussed in the next meeting of the Committee. With the aid of examples from your reading, prepare a thoroughly argued five-point concept note on the strengths of PPPs in the delivery of public sector services. **[25]**