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**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

**PROGRAMME: BSC IN AGRICULTURAL & BIOSYSTEMS
ENGINEERING**

COURSE CODE: ABE 401

TITLE OF PAPER: LAND EVALUATION AND PLANNING

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER
QUESTIONS**

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GRANTED BY THE CHIEF INVIGILATOR**

SECTION I: COMPULSORY QUESTION

Question One

- a. Explain what land evaluation is and why is it important? **10 marks**
- b. Explain how land capability classification is different from land suitability classification, indicating the conditions under which each of them may be applicable. **20 marks**
- c. Using examples, explain what land utilisation type is and how is it different from major land uses? **10 marks**
- [40 marks]**

SECTION II: ANSWER ANY TWO QUESTIONS FROM THIS SECTION

Question Two

- a. Using the following information presented in the tables below, identify the best performing land use type. **25 marks**

Table 1: Goals achievement, as a percentage of the best option for each criterion

Land-use type	Return per ha	Return per caput employed	Population carrying capacity	Environmental impact
Annual crops	100	40	100	75
Livestock prod.	46	40	56	60
Irrigated crops	2	8	1	45
Forestry	56	68	40	95

Table 2: Goals achievement, weighted by the decision maker's judgment of the importance of each criterion

Land-use type	Return per ha	Return per caput	Population carrying capacity	Environmental impact	Total goals achievement
Weighting	0.4	0.2	0.2	0.2	1.0
Annual crops					
Livestock prod.					
Irrigated crops					
Forestry					

- b. Explain what a cost benefit ratio is and why it is important in a land use appraisal process?

5 marks**[30 marks]**

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Question Three

- a. Explain why knowledge about land resources, infrastructure and production trends of an area is important for the development of a land use plan? **15 marks**
- b. Discuss how the level of intensity of land evaluation will affect the details of the data that is used in the evaluation exercise? **15 marks**

[30 marks]

Question Four

- a. Discuss any four of the factors that are common causes of land use problems. **20 marks**
- b. Give five reasons why monitoring and evaluation is important when implementing a project? **10 marks**

[30 marks]