

RHODES UNIVERSITY
DEPARTMENT OF ENVIROMENTAL SCIENCE
EXAMINATION: JUNE 2012
ENVIRONMENTAL SCIENCE 301
PAPER 1

Internal examiners: Mr Chris Upfold

Marks: 100

Dr James Gambiza

Duration: 3 hours

External examiner: Dr Patrick O'Farrell

GENERAL INSTRUCTIONS

1. This paper has three sections (A, B, C). Answer **EVERY SECTION**, noting the choices within sections.
2. Answer each section (A, B, C) in a **SEPARATE** answer book.
3. Read the instructions for each section carefully.
4. **NUMBER ALL ANSWERS CORRECTLY.**
5. Wherever possible use examples to back up your answers.
6. This examination paper has FIVE pages.

PLEASE DO NOT TURN OVER THIS PAGE UNTIL TOLD TO DO SO.

SECTION A (40 marks)

Please answer any FOUR of the following six questions

Question A1 (10 marks)

Justify the need for environmental monitoring.

Question A2 (10 marks)

The project initiating process group is one of the five process groups and is critical for effectively getting the project justified and started. There are four main outputs (deliverables) created during the project initiation stage. Identify any *three* project initiating process group outputs and provide format and content detail for *one* of these outputs.

Question A3 (10 marks)

What are the key features of effective monitoring programmes?

Question A4 (10 marks)

Two important documents that assist the project team as well as the project manager in successfully getting a project underway are the team contract and the stakeholder analysis.

- a. Describe the purpose of the stakeholder analysis, the content of a typical stakeholder analysis document and specify who “owns” the document. **(5 marks)**
- b. Describe the purpose of the team contract, the typical content of the team contract and who “owns” the document. **(5 marks)**

Question A5 (10 marks)

What are the advantages of locally-based monitoring?

Question A6 (10 marks)

When considering the opportunity costs involved in conducting projects and the organisational need to discern between various projects competing for resources, there are numerous techniques that may be applied for selecting one project over another. One such

technique is the **weighted scoring method** of project selection. With the aid of a diagram, explain how a weighted scoring method may be used to compare two or more projects against one another to determine which project/s should be selected?

SECTION B: Project Management Planning (30 marks)

Please answer ONE question

EITHER

QUESTION B1 (30 marks)

You have been invited to a job interview at a respected environmental consulting company, Envirosave. As part of the interview process, you have been tasked to present a report on running effective projects within the environmental consulting environment. You have selected **project planning** as your topic. Write a report (the formatting is unimportant), in which you:

- a. Describe the various processes involved in planning a project.
- b. Identify which tools and techniques are used by the Project Manager and his/her team in determining the project Scope, Time and Cost constraints.
- c. Describe the deliverables (documents) that would be the product of conducting a professional project planning process.

OR

QUESTION B2 (30 marks)

Given the summary data contained in Tables 1 and 2 (*below, on next page*), as well as making reference to the class reading Bradley and Hebert (1997): **The effect of personality type on team performance**, and referring explicitly to the characteristics of Extroverts, Introverts, Sensing Thinkers, Sensing Feelers, Intuitive Thinkers, Intuitive Feelers, Judgers and Perceivers, describe the likely effects of the team's composition on:

- a. Intra-team communication. **(5 marks)**
- b. The team's ability to assimilate information and reach decisions. **(5 marks)**

- c. The team's ability to pay attention to user needs and feelings of other team members. **(5 marks)**
- d. The team's ability to stay on schedule while considering alternative methods of getting the project done. **(5 marks)**
- e. The qualities likely to be displayed by the team leader and the possible impact this would have on the team's effectiveness. **(5 marks)**
- f. The personality composition (all else being equal) of a new team member in order to balance the aggregate Myers and Briggs Type Indicator (MBTI) preferences of the team described in both tables below. **(5 marks)**

SCENARIO

In order to get a clearer understanding of how a project team is likely to work together a survey of the team members' personality preferences can be conducted using a Myers and Briggs Type Indicator (MBTI) survey. The following tables contain results of an IT project teams MBTI survey:

Table 1: MBTI results

| Team members | Age | Preferences |
|--------------|-----|-------------|
| 1 | 37 | ENFJ |
| 2 | 42 | ENFJ |
| 3 | 26 | ENFJ |
| 4 | 36 | ENTJ |
| 5 | 23 | ESFJ |
| Leader | 40 | ESFJ |
| 7 | 23 | ENTJ |
| 8 | 46 | INTJ |
| 9 | 27 | ISTJ |
| 10 | 39 | ISTJ |
| Average | 34 | |

Table 2: MBTI types summary

| MBTI Type | Number | Percentage |
|------------|--------|------------|
| Extroverts | 7 | 70 |
| Introverts | 3 | 30 |
| STs | 2 | 20 |
| SFs | 3 | 30 |
| NTs | 3 | 30 |
| NFs | 3 | 30 |
| Judgers | 10 | 100 |
| Perceivers | 0 | 0 |

SECTION C: Conceptual Basis of Environmental Monitoring (30 marks)

Please answer ONE question

EITHER

QUESTION C1 (30 marks)

Drawing on the paper by Sergeant *et al.* (2012) provide practical advice for implementing long-term ecosystem monitoring.

OR

QUESTION C2 (30 marks)

- a) Discuss the paper by Collins *et al.* (2011) on the integrated conceptual framework for long-term social-ecological research. **(25 marks)**
- b) What are the implications of this framework on the monitoring of social-ecological systems? **(5 marks)**
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END OF EXAMINATION PAPER