

UNIVERSITY OF SWAZILAND

Faculty of Health Sciences

(BSC) IN ENVIRONMENTAL HEALTH

SECOND SEMESTER MAIN EXAMINATION PAPER 2014

TITLE OF PAPER : ENVIRONMENTAL PHYSICS II

COURSE CODE : EHS 412

DURATION : TWO HOURS

MARKS : 100

INSTRUCTIONS : ANSWER ONLY FOUR QUESTIONS

: EACH QUESTION CARRIES 25 MARKS

: QUESTIONS ONE AND TWO ARE COMPULSARY

: BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR

QUESTION ONE

Discuss H.E.P. as one of the energy resources, under the following themes:

- A. What does the acronym H.E.P. stand for? (1 mark).
- B. How would you classify this energy resource? Is it renewable or non-renewable? (1 mark).
- C. Describe how this source of energy is tapped? (4 marks).
- D. In a tabular form, list five Advantages and five disadvantages of using this energy source. (10 marks).
- E. Explain how this source of energy can be managed sustainably on a national level. (5 marks).
- F. As an environmental health scientist, propose ways of improving its disadvantages? (4 marks).

Total 25 marks

QUESTION TWO

Discuss geothermal energy as one of the renewable energy sources under the following themes

- A. Definition of geothermal energy? (1 marks).
- B. How can a community extract it for use? (5 marks).
- C. In a tabular form enumerate five advantages and five disadvantages of using this source of energy. (10 marks).
- D. How can it be managed sustainably on a national basis? (4 marks).
- E. Propose solutions to its disadvantages. (5marks).

Total 25 Marks

QUESTION THREE

- A. What do you understand by energy efficiency? (1 mark).
- B. As the environmental health officer at UNISWA, you are to advice top management of the university to integrate energy efficiency approaches into its energy use and management in order to cut on cost. Advance your reasons (**importance of energy efficiency**) to convince management in this endeavor. (10 marks).
- C. Having convinced the UNISWA top management on the importance of energy efficiency, recommend the ways that you would would want the UNISWA community to adopt in order to improve energy efficiency. (14 marks).

Total 25 Marks

QUESTION FOUR

In detail describe the strategies that Government can use in order to force companies in the country to switch to energy efficiency. (25 marks).

Total 25 Marks

QUESTION FIVE

- A. Discuss the ozone hole phenomenon. (10 marks).
- B. With the aid of chemical equations, describe the process of ozone depletion in the stratosphere. (8 marks)
- C. Elaborate on the environmental effects of ozone depletion. (7 mark).

Total 25 marks