



UNIVERSITY OF SWAZILAND
Faculty of Health Science

Department of Environmental Health
Sciences

Final Examination 2007

- TITLE OF PAPER : HYDROLOGY
- COURSE CODE : EHS 545
- DURATION : 2 HOURS
- MARKS : 100
- INSTRUCTIONS :
- READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
 - ANSWER ANY FOUR QUESTIONS
 - EACH QUESTION CARRIES 25 MARKS
 - NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM
 - BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER
- DO NOT OPEN THE QUESTION PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR.

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QUESTION ONE

1. Describe a method used to quantify the amount of rainfall in a mountainous and flat area respectively. (16)
2. What do you understand by effective run-off? (9)

QUESTION TWO

1. With an aid of a diagram describe a psychrometric chart, describing the relationship of vapour pressure in the atmosphere and temperature change during the formation of rainfall in the atmosphere. (15)
2. What are five conditions that must be fulfilled in the atmosphere in order for precipitation to occur? (10)

QUESTION THREE

1. What is a unit hydrograph? (5)
2. Draw a unit hydrograph and explain all the components of a unit hydrograph (10)
3. With the use of a sketch describe the concept of potential run-off yield of perennial, intermittent and ephemeral streams. (10)

QUESTION FOUR

1. Using a sketch describe the mass balance of the Great Usuthu River in terms of river flows showing the influence of climate in the river flows. (10)
2. Describe five characteristics or attributes that help to describe a watershed. (10)