

**UNIVERSITY OF SWAZILAND
FACULTY OF EDUCATION
MAIN EXAMINATION 2013**

TITLE OF PAPER: CURRICULUM STUDIES IN MATHEMATICS

COURSE CODE: EDC 381

PROGRAMME: B.ED 2 & PGCE

TIME ALLOWED: THREE (3) HOURS

INSTRUCTIONS: ANSWER ANY **FOUR** QUESTIONS. EACH QUESTION IS WORTH 25 MARKS. DO NOT WRITE ON THE SYLLABUS PROVIDED.

PROVISION: SGCSE Syllabus

THIS PAPER CONTAINS 5 PAGES. DO NOT OPEN UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR

Question 1

- (a) Describe each of the following terms used in assessment and evaluation. For (ii) and (iii) show how they are calculated.
- (i) Completion items [3]
 - (ii) Facility value [2]
 - (iii) Discrimination index [3]
- (b) Using examples show how you would use the facility value and discrimination index in your work as a Mathematics teacher. [10]
- (c) What attention do you need to pay to each of the following when constructing test items:
- (i) Figures [2]
 - (ii) Accuracy [3]
 - (iii) The stem of a question [2]

Question 2

Write an essay on how the structural organisation of a school could influence your effectiveness in heading a Mathematics department of a typical government school in Swaziland. The essay should include details on how each of the following could influence your work as a Head of the Mathematics Department:

- The Administration
- Other Heads of Departments
- Staff in the Mathematics Department
- Learners in the school

Additionally the essay should show how you will break every barrier to establish an effective Mathematics Department. [25]

Question 3

- (a) Write on the importance of studying language issues in Mathematics Education. Your discussion should aim to convince even the people who feel there is no need since language issues are there in every subject including everyday life [15]
- (b) Discuss **two** language issues you consider most important in the teaching and learning of secondary school Mathematics in Swaziland including justification of why you consider each issue most important. [10]

Question 4

The question on pages 4-5 is a conventional question from a past examination paper.

- (a) Work out the question. [13]
- (b) Analyse the question on:
- (i) language [4]
 - (ii) context(s) [2]
 - (iii) Relevant content knowledge to answer successfully [4]
- (c) Most learners who got part c (i) wrong gave the answer $\frac{49}{55}$, what possible error(s) resulted in this answer? [2]

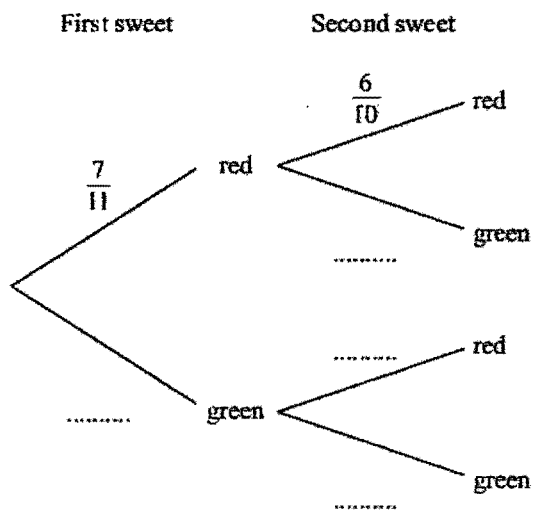
Question 5

Write an essay entitled “The use of relevant contexts in the teaching and learning of direct and inverse proportion in the SGCSE syllabus”

[25]

- 9 A bag contains 7 red sweets and 4 green sweets. Aimee takes out a sweet at random and eats it. She then takes out a second sweet at random and eats it.

(a) Complete the tree diagram.



[3]

(b) Calculate the probability that Aimee has taken

(i) two red sweets.

Answer(b)(i) [2]

(ii) one sweet of each colour.

Answer(b)(ii) [3]

(c) Aimee takes a third sweet at random.
Calculate the probability that she has taken

(i) three red sweets,

Answer(c)(i) [2]

(ii) at least one red sweet.

Answer(c)(ii) [3]
