UNIVERSITY OF SWAZILAND
FACULTY OF EDUCATION
RE-SIT EXAMINATION PAPER 2019

TITLE OF PAPER: CURRICULUM STUDIES IN MATHEMATICS II

COURSE CODE: CTE332/CTE532

PROGRAMME: B.ED 3/PGCE

TIME ALLOWED: THREE (3) HOURS

INSTRUCTIONS: ANSWER ANY **FOUR** QUESTIONS. EACH QUESTION IS WORTH 25 MARKS.

This paper contains 6 pages including this one

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Question 1

(a) Orton (2004) states some language difficulties in the teaching and learning of school mathematics. Discuss **five** of these difficulties giving an example in each case. [10]

(b) Some people have suggested code-switching in the teaching and learning of school mathematics. Discuss the advantages and disadvantages of this to the learning of mathematics [15]

Question 2

(a) Explain in your own words each of the following phrases in relationship to national examinations:

(i) Learner unreliability [5]

(ii) Administrative unreliability [5]

(b) You have to refer to appendix 1(a) and (b) for this part of the question

(i) Critique the marking scheme (appendix 1 (b)) prepared by a student teacher for **Item1** (appendix 1(a)) [5]

(ii) Write an appropriate marking guide for the question [10]

Question 3

(a) A student teacher gave **Item 2**, a multiple choice item (appendix 2) in a test. Analyse the item and say with support why it is a good or a bad item. [5]

(b) Objective testing skills can be used to break down a conventional examination question into objective test items for diagnostic purposes. Break down **Item 3**, an examination question in appendix 3, into completion type objective test items. [20]

Question 4

(a) What factors influence the choice of a leadership style [10]

(b) How would you use any **three** of the leadership styles you learnt in this course to head the Mathematics department at a typical government school [15]

Question 5

Write an essay on the value of curriculum integration to the learning of school mathematics. [25]

Appendix 1(a)

Item 1

(a) 3 6 19 20 24 27 30 32 35 36 48 49 51

From this list of numbers write down

(i) a factor of 15,

..... [1]

(ii) a multiple of 18,

..... [1]

(iii) an odd square number,

..... [1]

(iv) a cube number.

..... [1]

(b) Write as a percentage.

(i) 0.43

.....% [2]

(ii) $\frac{2}{5}$

.....% [2]

(c) Write $\frac{28}{42}$ in its lowest terms.

..... [2]

(d)

(i) Write 45 as a product of its prime factors.

..... [2]

(ii) Find the highest common factor (HCF) of 45 and 105.

..... [2]

Appendix 1 (b)
Item 1 marking Guide
(a) (i) 3 A_1

(ii) 36 A_1

(iii) 49 A_1
(iv) 27 A_1

(b) (i) 43% A_2
(ii) 40% A_2
(c) $\frac{2}{3}$ A_2
(d) (i) $3^2 \times 5$ A_2
(ii) 15 A_2

Appendix 2
Item 2
Expand $(x-2y)^2$. Circle the correct answer.

A $x^2 - 2xy - 2y(x-2y)$

B $x^2 - 2xy - 2yx - 4y^2$

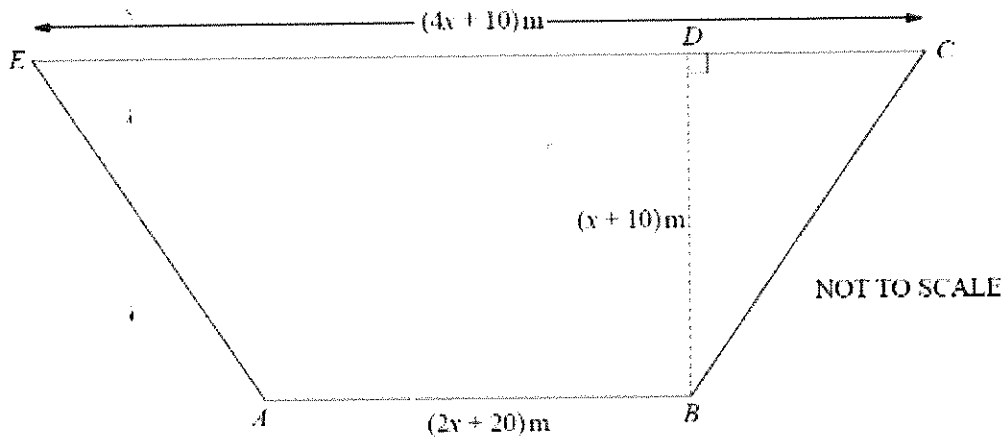
C $x^2 - 4xy + 4y^2$

D $x^2 - 2xy - 2yx + 4y^2$

Appendix 3

Item 3

A field shaped like a trapezium is shown below.



BD is perpendicular to EC and has length $(x + 10)$ metres.

It is given that $AB = (2x + 20)$ metres and $EC = (4x + 10)$ metres.

(a) Show that the area of the field is $3x^2 + 45x + 150$.

(b) Given that the area of the field is $1800\,m^2$

(i) form an equation for the area of the field and show that it reduces to

$$x^2 + 15x - 550 = 0,$$

(ii) solve the equation $x^2 + 15x - 550 = 0$, giving your answer to two decimal places.

(iii) find the length of EC.