UNIVERSITY OF SWAZILAND
FACULTY OF EDUCATION
SUPPLEMENTARY EXAMINATION PAPER 2011

TITLE OF PAPER: CURRICULUM STUDIES IN MATHEMATICS

COURSE CODE: EDC 381

PROGRAMME: B.ED 3 & PGCE

TIME ALLOWED: THREE (3) HOURS

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

This paper contains 3 pages including this one

Question 1
The results of tests can be expressed using 3 types of marks. Elaborate on each of these showing how when and why you would use them.   [25]

Question 2
   (a) Name **three** sources of test items.[3]
   (b) Critique the question below with regard to the following aspects:
      (i)   Figures [3]
      (ii)   accuracy [3]
      (iii) simplicity [3]
      (iv) stem [3]
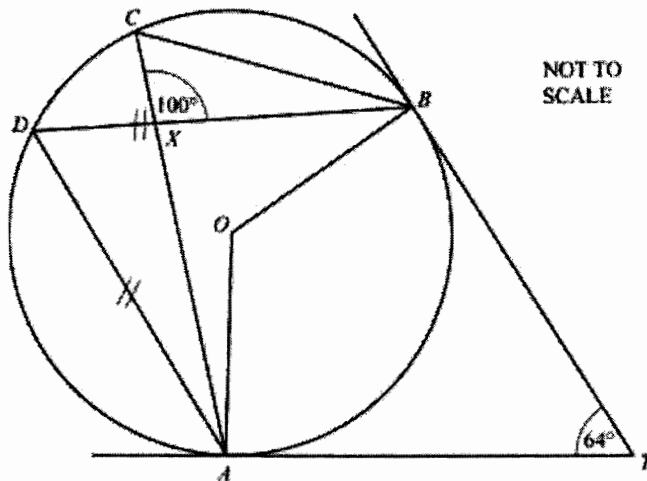
In the diagram above, A, B, C and D lie on the circle, centre O.
TA and TB are tangents at A and B. The lines AC and BD cross at X.
AD = BD, angle ATB = 64° and angle CXB = 100°.
(A) Calculate
(i) angle AOB,
(ii) angle OAB,
(iii) angle BAD,
(iv) angle CAO.
(B) Explain why OATB is a cyclic quadrilateral.
   (c) Prepare a test specification grid for topic 1 in the SGCSE syllabus.[10]

Question 3
   (a) Compare and contrast assessment procedures in GCE O'Level IGCSE and
       SGCSE Mathematics.[10]
   (b) What do mathematics results statistics show about girls and boys performance in
       Swaziland external examinations? What is the trend in these statistics as you go
       from primary to senior level?[15]

Question 4

You have been appointed to head the mathematics department of the school where you did your last teaching practice or where you are presently doing teaching practice. Write an essay on heading the mathematics department of this particular school. [25]

Question 5

The table below shows results of a mathematics test given to a class of 11 learners.
Key: Bold numbers on the far left column are learners' identification numbers. Bold numbers in the first row are question numbers and the numbers in brackets are total possible marks. Marks in columns are marks obtained by individual learners. The overall score for each learner is shown in the last column.

(a) Taking attainment on a question to be 100% success, calculate facility values for questions 2, 4 and 5. [6]
(b) Calculate the discrimination index for each of questions 2,4 and 5[9]
(c) Write a detailed analysis for each question based on the table and the calculations in (a) and (b) [10]

Q/N	1(9)	2(9)	3(5)	4(3)	5(5)	6(6)	7(3)	8(2)	9(5)	10(5)	11 (16)	12 (16)	13 (16)	14 (16)	15 (16)	Final score
1	9	9	5	3	5	6	3	2	5	5		16		16	16	100
2	9	9	5	3	5	6	3	2	3	5		16		16	16	98
3	9	4	5	3	0	6	3	2	5	5	15			11	16	84
4	6	7	5	3	3	6	3	2	5	4		14		10	16	84
5	9	9	5	2	5	6	3	0	5	5		16		7	9	81
6	9	3	5	3	2	6	0	0	5	5	14	16	15			83
7	8	7	0	3	2	6	3	2	5	5		10		13	15	79
8	6	7	5	3	2	4	0	2	4	2	0	5			2	42
9	9	6	0	1	2	2	0	2	2	2	2	3			6	37
10	8	1	5	3	3	4	3	2	5	3	7	14			16	74
11	8	9	5	2	3	3	3	1	5	3		13	6	3		64