



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF EDUCATION**  
**UNIVERSITY EXAMINATION FOR THE DIPLOMA IN SPECIAL NEEDS EDUCATION**  
**MAIN CAMPUS REGULAR**  
**2<sup>ND</sup> YEAR 1<sup>ST</sup> SEMESTER 2016/2017 ACADEMIC YEAR**

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**COURSE CODE:** DSN 2211.  
**COURSE TITLE:** MATHEMATICS.

**EXAM VENUE:**

**STREAM:**

**DATE:**

**EXAM SESSION:**

**TIME:**

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Instructions:

- 1. Answer Question ONE (COMPULSORY) and ANY other 2 questions**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**SECTION A (30 MARKS).**

1. (a) Differentiate between the following terms as used in mathematics.
- (i) Cardinal and Ordinal aspect of a number. **(4marks)**
  - (ii) Factors and Divisors. **(4 marks)**
  - (iii) Rectangular and Triangular number patterns. **(4 marks)**
- (b) (i) Describe the three pre-number activities that provide pupils with necessary readiness to understand the initial number concepts of equality and inequality. **(6 marks).**
- (ii) Explain how you would assist your learners to work out MDCLX – CDLXVII. **(2marks).**
- (c) You intend to teach addition of a 2-digit number to a 3-digit number with carrying.
- (i) Write the objective of the lesson. **(2marks)**
  - (ii) What previous knowledge about addition will the pupils require in this lesson **(2 marks)**
  - (iii) Using the example  $243 + 18$ , explain how you would teach learners how to add a 2-digit number to a 3-digit number **(4 marks)**
  - (iv) What would be the next sub –topic about the lesson ? **(2 marks)**

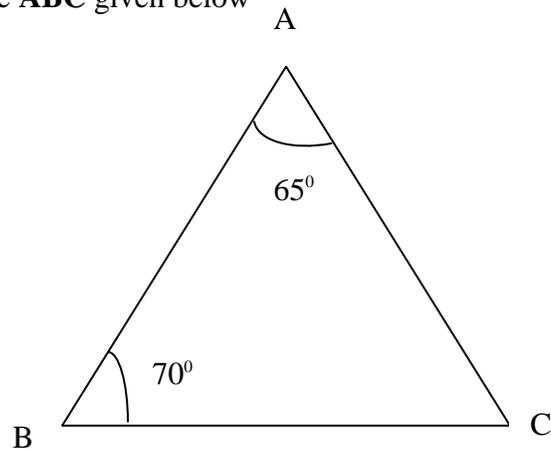
**SECTION B (40 MARKS) ANSWER ONLY 2 QUESTIONS FROM THIS SECTION .**

2. (a) You have been given the following data on the number of animals in a game park

<u>ANIMAL</u>	<u>NUMBER</u>
Zebras	60
Lions	20
Antelopes	75
Elephants	25

- (i) Describe how you will introduce your pupils drawing a pie-chart without the use of degrees. **(4 marks)**
- (ii) Describe how you would teach your pupils to draw a pie-chart using degrees **(6 marks)**

(b) Using triangle **ABC** given below



- (i) List **FOUR** skills your pupils would require before they can construct such a triangle. **(4 marks)**
- (ii) Write one common error that pupils make when doing the construction in (i) above **(1 mark)**
- (iii) In the triangle above, construct a circle that touches its three sides. **(5 marks)**
- 3 (a) (i) Describe how you would introduce the number “Zero” to your std 1 class . **(4 marks).**
- (iii) Identify six activities you may use to help STD 1 pupil understand the cardinal numbers one to nine. **(6 marks).**
- (b) (i) Using erastosthene sieve method, describe how you will guide your learners to identify prime numbers between 1 to 100. **(4 marks).**
- (ii) Using examples, describe practical activities you would involve your learners in the introduction of the first and second sub-topic in division of fractions **(6 marks)**
4. (a)
- (i) You intend to lead your class to find the HCF of whole numbers, using 36,48 and 60. Describe how you would do this. **(4 marks).**
- (ii) You plan to lead your class in testing if 2275 is divisible by 7. List down the steps you would take your pupils through. **(4 marks).**
- (iii) Describe a practical activity you would use to introduce the concept of place value using 35 as an example. **(2 marks)**
- (b) When teaching the topic “subtraction of fractions”

- (i) List the **FOUR** main sub-topics in their correct order you will consider. **(4 marks)**
- (ii) Using examples, describe a practical activity you would involve your learners in the introduction of the first and second sub-topics. **(6 marks)**

5 (a) Three of the main stages in development of teaching /learning multiplication of fractions are given below.

For each stage and using the example given, describe an activity you would involve your pupils in during the teaching /learning process.

(i) Multiplication of whole number by a fraction e.g  $3 \times \frac{1}{4}$  **(3 marks)**

(ii) Multiplication of a fraction by a fraction e.g  $\frac{2}{3} \times \frac{1}{2}$  **(4 marks)**

(iv) Multiplication of mixed numbers.  $2\frac{3}{4} \times 1\frac{2}{5}$  **(3 marks)**

(b) In a test a teacher gave multiple choice questions to a class as shown below.

A sales girl earns a basic salary of ksh: 4000. She is also paid a commission of 4% of the value of items she sells above ksh: 20000. In one month, she sold 2000 items at ksh: 30 each .What was her total earnings that month?

- (a) kshs .1600
- (b) kshs .4800
- (c) kshs .5600
- (d) kshs .6400.

Show how the key and distracters are obtained

**(10 marks)**