**NAME…………………………………………………ADM NO:…………..…. CLASS……… DATE………………**

**MOI HIGH SCHOOL KABARAK**

**FORM ONE TERM 2**

**MATHEMATICS**

**COMMON TWO EXAMINATION MAY 2018**

**TIME: 2 ½ HRS**

## INSTRUCTIONS TO CANDIDATES

1. Write your name and admission number in the spaces provided at the top of this page.
2. This paper consists of two sections: Section **I** and Section **II**.
3. Answer **ALL** questions in section **I** and **ALL** questions in section **II**
4. Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.
5. Marks may be given for correct working even if the answers are wrong.
6. Non – Programmable silent electronic calculators and KNEC mathematical tables may be used, except where stated otherwise.

 **FOR EXAMINERS USE ONLY**

**Section I**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Section II**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 21 | 22 | 23 | 24 | 25 | TOTAL**GRAND TOTAL** |
|  |  |  |  |  |  |

***This paper consists of 12 printed pages.Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.***

 ***SECTION I (60 Marks)***

***(Attempt all the questions in this section)***

1. Round off the following numbers to the nearest number indicated in the bracket

 (3 marks)

1. 473,678 (100)
2. 524,239 (1000)
3. 2,499 (10)
4. All prime numbers less than ten are arranged in ascending order to form a number.

 (a)Write down the number formed. (1 mark)

 (b) Expressed the number formed in words. (1 mark)

 (c) Determined the total value of the second digit from the number formed. (1 mark )

1. Express the numbers 1470 and 7056;
2. Each as a product of its prime factors. (2 marks)
3. Hence evaluate leaving your answer in prime factor form. (2 marks)
4. (a) Find the greatest common divisor of the term,144x3y2 and 81xy4. (2 marks)

 (b). Hence factorize completely this expression 144x3 y2- 81xy4 . (2 marks)

1. Find the least number of sweets that can be packed into polythene bags which contains either 9 or 15 or 20 or 24 sweets with none left over. (3 marks)
2. Evaluate without using mathematical tables or calculators

 (3 marks)

1. Arrange the following fractions in ascending order (3 marks)

1. Evaluate 0.02 + 3.5 x 2.6 - 0.1(6.2-3.4). (3 marks)
2. Use tables of squares and square roots to evaluate ;

(0.3721)2 +√0.0136 (3 marks)

1. Express the following numbers in standard form. (3 marks)
2. 0.0006901
3. 258.1
4. 0.0569
5. The sum of three consecutive numbers is 981.Find the difference of the greatest and least numbers in the set. (3 marks)
6. Determine the value of Y, if the following number is divisible by 11, without using a calculator. 604Y9 (2 marks)
7. Find the value of using mathematical tables ,to the nearest hundredths. (Take π=3.142) (3 marks)
8. Express the following algebraic fraction as a single fraction. (3 marks)

1. Jane spent half of his April’s salary on school fees, one-eighth on farming and two-thirds of the remainder on food. Calculate his April salary if he spend sh.3200 on food. (3 marks)

 16. Find the length L of a square whose area is 0.0084m2  (3 marks)

 L

 L

 17. The internal height of a rectangular box is 10.6cm.The thickness of the bottom is cm and the thickness of the top is 1.1cm.Find is the external height of the box. (2 marks)

18. A pile of 18 identical books ,each of 125 equal leaves ,is 2.16m high. Calculate the thickness of each leaf in centimeters. (3 marks)

19. Take a number n, double it and add five to the result. If this number is doubled again, the new number is 22.Find n. (3 marks)

20. Find the value of **a** correct to 2 decimal place, if , b=2 and c=3.5. (3 marks)

 **SECTION (II) (*40 Marks)***

 ***(Attempt all the questions in this section)***

 21. (a) Given that , Find the value of **p** + **q**. (4 marks)

 (b) Simplify completely; (4 marks)

22. Given that x= and y= ,evaluate

 (a) x y (4 marks)

 (b) 2x+2y (2 marks)

1. 3x – y (2 marks)

23. (a) Evaluate (4 marks)

 (b) Three boys shared some money. The youngest got of it, the next got and the eldest got the remainder.

(i) What fraction did the eldest receive? (2 marks)

 (ii) If the eldest boy got sh.330,what was the original sum of the money. (2 marks)

24. Five companies employed 2 340, 3 455, 675, 960 and 350 workers. The first two companies laid off 1 worker for every 5 while the other three recruited 2 new workers for every 3.

(a) What was the total number of workers at the beginning? (1 marks)

 (b) How many people

 (i) Lost Jobs? (2 marks)

 (ii) Got jobs? (2 marks)

(c) What was the total number of workers finally? (3 marks)

25. (a) A number **m** is such that when it is divided by 30,36 and 45, the remainder is always 7.Find the smallest possible value of **m**. (4 marks)

 (b) The figure below shows two circles with the outer radius as **R** while the inner radius is **r** cm. Find an expression for the area of the shaded region. Leave you answer in terms of . (4 marks)

**This is the last printed page**.