# FORM 1 END TERM 2 2020

# MATHEMATICS

## Instructions to candidate

1. Write your name and Adm. No in the space provided.
2. These papers consist of two sections; Section A and section B.
3. Answer all questions in section A and only 5 from section B.
4. Write all your working on the space provided.
5. Marks are awarded for steps which are correctly worked.
6. Calculators must not be used.

Section I

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Total |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|-------|
|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |       |

Section II

| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Total |
|----|----|----|----|----|----|----|----|-------|
|    |    |    |    |    |    |    |    |       |

Time:   2hrs 30 min

Grand Total

**SECTION   50 MARKS**

1. Add one thousand and fourty four to the product of one thousand and six and one hundred

    And eighty. (3 marks)

2. The GCD of two numbers is 17 and their LCM is 140. If one of the numbers is 20, find the other number. (3 marks)

3. Find the L.C.M of $X^2 + X$, $X^2 - 1$, $X^2 - X$.    (3 marks)

4. Evaluate    $-8\div2+12\times9-4\times6$          (3 marks)

                 $56\div7\times2$

5. Evaluate $\frac{3}{8}$ of $\{7\frac{3}{5}-\frac{1}{3}(1\frac{1}{4}+3\frac{1}{3}) \times 2\frac{2}{5}\}$     (3 marks)

6. Evaluate without using calculators or mathematical tables, leaving your answer as a simple fraction.

$$\frac{-4(-2) + (-12) \div (+3)}{-9-(15)} + \frac{-20+ (+4) + (-6)}{46-(8+2)-3}$$     (4 marks)

7. 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.     (3 marks)

8.  Which of the following number is divisible by both 3 and 4?     (3 marks)

120, 744, 306, 9564, 1504, 192, 86 and 36.

9. What must be added to the number below to make it divisible by 11,    (3 marks)

82604    9

10. If x = -2,   y= -6 and z= 4,   find the value of   4xy        (3 marks)

Z

11.  Show the following operation on a number line      (2 marks)

(-7) + (-2) + (+6)

Hence, evaluate the value of,    (-7) + (-2) + (+6)        (1 mark)

12. Change the recurring decimal into fraction,     3.256       (3 marks)

13. By how much is the product of $^9/_5$ and $8^1/_4$ greater than 5?    (3 marks)

14. Evaluate, $(^5/_7 \times ^2/_3) + (^5/_6 - ^8/_9) \div ^7/_{15}$ of $^5/_6$    (3 marks)

15. The distance between two schools m and k is 2km. A market is situated between m and k one third of the distance from m and k. How far is the market from k?   (3 marks)

16. A square room is covered by a number of whole rectangular slabs of sides 60cm and 42cm.

Calculate the least possible area of the room in square metres.    (4 marks)

SECTION B    50 MARKS

17. Kinyua spent $^1/_4$ of his net January salary on school fees. He spent $^1/_4$ of the remainder on

electricity and water bills. He spent $^1/_9$ of what remained on transport. If he finally had

sh.3,400, calculate

a)  His net January salary.     (5 marks)

b)  Money spent on school fees.    (1 mark)

c)  Money spent on transport.    (2 marks)

d)  Money spent on electricity and water bills.

18. A minibus had 23 passengers at the beginning of a journey. Twelve passengers alighted at the first stop while 9 boarded six of those who boarded at the first stop alighted at the second stop and 12 got in. The minibus should not stop again up to the final destination. The charges from the starting point were sh. 50 up to the first stop, sh. 70 up to the second stop and sh. 85 up to the final destination.

   a) How many passengers alighted at the final destination?    (3 marks)

   b) How many passengers were ferried by the minibus through the journey? (3 marks)

   c) How much money was collected during the trip?     (4 marks)

19. Find all the possible values of the missing digit(s) represented by (*) (10 marks)

   a) 2*6, 8*71, 8*919 are divisible by 11.

   b) 396*5, 48675*, 349** are divisible by 9.

   c) 3*7, 1*43, 81*60 are divisible by 3.

   d) 93*, 85*2, 90*4 are divisible by 4.

20. Mr. Kamau wishes to buy some items for his son and daughter. The son's item costs sh. 324 while the daughter item costs sh. 220 each. Mr. Kamau would like to give each of them equal amount of money.

a) What is the least amount of money that he can send to each of them so that the money is

   fully utilized for items without remainder.    (5 marks)

b) How many items will each person buys.      (5 marks)

21. In 2010, Musa got 750 bags of coffee from his shamba. In 2011 his yield dropped by 30% due to drought and in 2012 his yield rose by 15% over that of 2011. A bag of coffee weighs 55kg and Musa was paid sh. 7900 per tone in 2010. Thereafter the price per tone increased each year by 10%. Find his earning from coffee for each of the three years. Hence, find his total income from coffee for three years.        (10 marks)

22. a) The Highest Common Factor( HCF) of 182 and x is 26 and the L.C.M of 182 and x is 1092. Determine the value of x.    (3 marks)

a) Muigai had sh. P; Nzau had four times as much as Muigai. Muli had half as much as Nzau.

i) Write an expression that gives the total amount of money the three people had. (1 mark)

ii) If p = sh. 1500, how much money did they have altogether?  (3 marks)

b)                                           35°   z              y

                                             w              x

Find the values of x, y, w, and z giving reason.        (4 marks)

23. Five companies employed 2340, 3455, 675, 960 and 1350 workers. The first company laid off 1 worker for every 5 workers, while the other three recruited 2 new workers for every 3.

  a) What was the total number of workers at the beginning?    (2 marks)

  b)  How many people:
     i)       Lost job            (3 marks)

     ii)      Got job             (3 marks)

  c)  What was the total number of workers finally?     (2 marks)

24. a) The masses in kilograms of 20 bags of maize were; 90, 94, 96, 98, 99, 102, 105, 91, 102, 99, 105, 94, 99, 90, 94, 99, 98, 96, 102, and 105.

    i.     State the mode. (1mk

    ii.    Calculate the mean mass per bag (4 marks)

b) A fruit vendor bought 1948 oranges on a Thursday and sold 750 of them on the same day. On Friday, he sold 240 more oranges than on Thursday. On Saturday, he bought 560 more oranges. Later the day, he sold all the oranges he had at a price of Ksh. 8 each. Calculate the amount of money the vendor obtained from the sales of Saturday.    (5 marks)