

GATITU SECONDARY SCHOOL, P.O. BOX 327 – 01030, GATUNDU.

FORM 1 MATHEMATICS END OF TERM I EXAMINATION. 2014.

NAME: MARKING SCHEME ADM: FT CLASS: FT

Instructions:

1. Write your name, Admission number and class in the space provided.
 2. All questions must be answered in the spaces below each question.
 3. All working must be shown.
 4. Marks may be given for correct working even if the answer is wrong.
- (100 Marks)

1a. Write the following numbers in words.

i) 307 204 (2mks)

ii) 99 099 099 (2mks)

b) Write the following numbers in figures:

i) Nine Million, two hundred and twenty three thousand and thirty. (2mks)

9 000 000
223 000
30
9,223,030

ii) One hundred forty five million and one. (2mks)

140,000,001

2. A number m is formed by writing all the prime numbers between 0 and 10 in an ascending order. Another number n is formed by writing all the square numbers between 0 and 10 in a descending order.

a) Find $m - n$ (2mks)

2, 3, 5, 7 = m .

9 4 1

2357
941
1416

b) Express $(m - n)$ as a product of its prime factors.

(2mks)

$$1416 = 2 \times 2 \times 2 \times 3 \times 59$$
$$2^3 \times 3 \times 59$$

3. Find the common factors for each of the following:-

a) 30 and 48

$$\begin{array}{r|l} 30 & 48 \\ \hline 5 & 8 \\ \hline & = 2 \times 3 \end{array}$$

(2mks)

b) 50 and 100

(2mks)

$$50 = 2 \times 5 \times 5$$
$$100 = 2 \times 2 \times 5 \times 5 \quad \underline{\underline{2 \times 5}}$$

c) 48, 80 and 144

(3mks)

$$80 = 2 \times 2 \times 2 \times 2 \times 5$$
$$144 = 2 \times 2 \times 3 \times 2 \times 2 \times 3$$
$$\underline{\underline{2^4}}$$

4. Arrange the following fractions in descending order of size.

a) $\frac{7}{12}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$

$$\frac{7}{12} \quad \frac{8}{12} \quad \frac{9}{12} \quad \frac{10}{12}$$

(3mks)

$$\underline{\underline{\frac{5}{6}, \frac{3}{4}, \frac{2}{3}, \frac{7}{12}}}}$$

b) $\frac{13}{20}, \frac{3}{5}, \frac{7}{10}, \frac{9}{8}, \frac{1}{2}$ $\frac{26, 24, 28, 25, 20}{40}$ (3mks)

$\frac{7}{10}, \frac{13}{20}, \frac{5}{8}, \frac{3}{5}, \frac{1}{2}$

5. Write down the factorization in power form of the following numbers.

(2mks)

A) 999

$999 = 3 \times 3 \times 111$

(2mks)

b) 4545

$4545 = 3 \times 5 \times 3 \times 101$

6. Evaluate the following BODMAS.

a) $\frac{-8 \div 2 + 12 \times 9 - 4 \times 6}{56 \div 7 \times 2}$ (3mks)

$\frac{-4 + 108 - 24}{8 \times 2}$

$= \frac{108 - 28}{16}$

$\frac{80}{16}$

5

$$b) \frac{28 - (-18)}{-2} - \frac{15 - (-2)(-6)}{3}$$

$$\frac{46}{-2} - \frac{15 - 12}{3}$$

$$\frac{46}{-2} - \frac{3}{3}$$

$$-23 - 1 = -24$$

(3mks)

$$-23 - 1 = -24$$

7. Three bells ring at intervals of 9 minutes, 15 minutes and 21 minutes. The bells will next ring together at 11.00 p.m. Find the time the bells had last rang together. (4mks)

$$9 = 3 \times 3$$

$$15 = 3 \times 5$$

$$21 = 3 \times 7$$

$$3^2 \times 35$$

$$\frac{315}{60}$$

5.25 hrs.

$$\begin{array}{r} 11.00 \text{ P.M} \\ - 5.25 \\ \hline 5.45 \end{array}$$

5.45 PM

8. A farmer distributed his bags of cabbages as follows:-

A certain hospital received a quarter of the total number of bags. A nearby school received half of the remainder. A green grocer received a third of what the school received. What remained was six bags more than what the green grocer received. How many bags of cabbages did the farmer have? (4mks)

$$H \rightarrow \frac{1}{2}$$

$$S = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

$$G = \frac{1}{3} \text{ of } \frac{1}{4}$$

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{12} = \frac{6+3+1}{12}$$

$$\frac{12}{12} - \frac{10}{12}$$

$$\frac{2}{12}$$

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b) Kutu withdrew some money from a bank. He spent $\frac{3}{8}$ of the money to pay Mutuas school fees and $\frac{2}{5}$ to pay for school fees. If he remained with Ksh. 12,330, calculate the amount of money he paid for Mutuas school fees. (4mks)

$$\begin{aligned} \frac{3}{8} &\Rightarrow M \\ \frac{2}{5} &\Rightarrow f \\ \frac{3}{8} + \frac{2}{5} &= \frac{15+16}{40} \\ &= \frac{31}{40} \\ \frac{9}{40} &= 12,330 \end{aligned}$$

$$\begin{aligned} \frac{40}{9} \times 12,330 \\ \text{Sh } \underline{\underline{54,800}} \\ \frac{3}{8} \times 54,800 \\ 3 \times 6,850 \\ = \underline{\underline{20,550}} \end{aligned}$$

9. Work out the following; giving the answer as a mixed number in its simplest form.

a) $\frac{2}{5} \div \frac{1}{2}$ of $\frac{14}{9} - 1\frac{1}{10}$ (4mks)

$$\frac{\frac{2}{5} \div \frac{1}{2} \text{ of } \frac{14}{9} - 1\frac{1}{10}}{\frac{1}{8} - \frac{1}{6} \times \frac{3}{8}}$$

$$\frac{\frac{5}{2} \times \frac{2}{9} - \frac{11}{10}}{\frac{1}{8} - \frac{1}{16}}$$

$$\frac{7/5 + 9/2 - 11/10}{\frac{2-1}{16}}$$

b) $\frac{3}{4} + 1\frac{5}{7} \div \frac{4}{7}$ of $2\frac{1}{3}$

$$\left(1\frac{3}{7} - \frac{5}{8}\right) \times \frac{2}{3}$$

$$\frac{3}{4} + \frac{12}{7} \div \frac{4}{7} \times \frac{7}{3}$$

$$\left(\frac{10}{7} - \frac{5}{8}\right) \times \frac{2}{3}$$

$$\frac{80 - 35}{56} \times \frac{2}{3}$$

$$\frac{9}{5} - \frac{11}{10} \div \frac{1}{16}$$

$$\frac{90 - 55}{50} \times \frac{16}{1}$$

$$\frac{735}{50} \times \frac{16}{1}$$

$$\frac{25}{5}$$

$$\frac{56}{5} = 11.2$$

$$\underline{\underline{11\frac{1}{5}}}$$

(4mks)

$$\frac{3}{4} + \frac{12}{7} \times \frac{3}{4} \quad \frac{3}{4} + \frac{9}{7} \quad \frac{21+27}{28}$$

$$\frac{45-15}{28} \times \frac{2}{3}$$

$$\frac{15}{28}$$

$$\frac{48}{28} \div \frac{15}{28}$$

$$\frac{48}{28} \times \frac{28}{15} = \frac{48}{15} = \underline{\underline{3\frac{1}{5}}}$$

c) Evaluate:-

(3mks)

$$\frac{0.015 + 0.45}{4.9 \times 0.2 + 0.07} \div 1.5$$

$$\frac{0.015 + 0.3}{0.98 + 0.07}$$

$$\frac{0.315}{1.05} = \frac{315}{1050}$$

$$\frac{63}{210}$$

$$\frac{9}{30} = \frac{3}{10}$$

10. A function was attended by men, women and children. There were 900 men and three times as many women. A total of shs 142,500 was raised. If each man contributed shs 50 and each woman shs 35, what was:-

a) The amount contributed by the children. (2mks)

$$\text{Men} = 900$$

$$\text{Women} = 2700$$

$$900 \times 50 = 45,000$$

$$2700 \times 35 = 94,500$$

$$\text{sh. } 139,500$$

$$\begin{array}{r} 139,500 \\ - 142,500 \\ \hline 3,000 \end{array}$$

b) The number of children who attended the function if each child contributed sh. 10. (2mks)

$$\frac{3000}{10} = 300$$

$$\begin{array}{r} 900 \\ 2700 \\ \hline 3,900 \end{array}$$

$$\underline{\underline{300}}$$

11. Work out

a) $16.80756 \div 7.062$ (2mks)

$$\frac{16.80756}{7.062}$$

$$= \underline{\underline{2.38}}$$

b) 9.31×0.13

(2mks)

$$9.31 \times 0.13 =$$

$$\underline{\underline{1.2103}}$$

12. Which of the following number is divisible by 3

i) 101
Not

(ii) 675
yes

(iii) 31 243
Not.

(3mks)

b) Which of the following numbers is divisible by 11

i) 2574
yes

(ii) 902
yes

(ii) 366
Not.

(3mks)

13a) Write down the common factors of the following numbers, hence state the highest common factor.

a) 582,

344 and 644

$$\begin{array}{l} 2 \mid 582 \\ \quad 291 \\ \hline 2 \mid 344 \\ \quad 172 \\ \quad 86 \\ \quad 43 \\ \hline 2 \mid 644 \\ \quad 322 \\ \quad 161 \\ \quad 80.5 \\ \hline \end{array} \quad (4\text{mks})$$

b) 792, 13068 and 25 958.

(4mks)

$$792 = 2 \times 2 \times 2 \times 3 \times 3 \times 11$$

$$13068 = 2 \times 2 \times 3 \times 3 \times 3 \times 11 \times 11$$

$$25,958 = 2 \times$$

②

$$\begin{array}{r} 12979 \\ 25958 \\ \hline 2 \end{array}$$

14. Express each of the following as a fraction.

a) $0.\dot{3}$

(2mks)

$$\begin{array}{r} x = 0.333\dots \\ 10x = 3.333\dots \\ \hline 9x = 3 \end{array}$$

$$x = \frac{3}{9}$$

$$x = \underline{\underline{\frac{1}{3}}}$$

b) 2.750

(2mks)

$$\frac{2.750}{1000}$$

$$= 2 + 0.75$$

$$2 + \frac{75}{100}$$

$$\left| \begin{array}{l} 2 + \frac{3}{4} \\ \frac{11}{4} \\ \hline \hline \end{array} \right.$$

c) $3.\dot{2}5\dot{6}$

(3mks)

$$\begin{array}{r} x = 3.25656\dots \\ 10x = 32.5656\dots \\ 100x = 325.656\dots \\ \hline 990x = 3224 \end{array}$$

$$x = \frac{3224}{990} = \frac{1612}{495}$$

$$3 \frac{127}{495}$$

15. Write down.

a) 2.9678 correct to:

i) 1 decimal place

(1mk)

$$\underline{\underline{3.0}}$$

ii) 2 decimal places

(1mk)

$$\underline{\underline{2.97}}$$

iii) 3 decimal places

(1mk)

$$\underline{\underline{2.968}}$$

b) Write down 0.0905 correct to:

i) 1 decimal place

(1mk)

$$\underline{\underline{0.1}}$$

iii) 2 decimal places

(1mk)

$$\underline{\underline{0.09}}$$

iii) 3 decimal places

(1mk)

$$\underline{\underline{0.091}}$$

c) Write each of the following as a single decimal

$$\text{I } \frac{1}{10} + \frac{2}{100} \quad \left| \quad \begin{array}{r} 0.1 \\ + 0.01 \\ \hline 0.11 \\ \hline \end{array} \right.$$

$$\text{II } 1 + \frac{1}{100} + \frac{1}{10,000} + \frac{1}{1000000}$$

$$\begin{array}{r} 1 \\ + 0.01 \\ + 0.0001 \\ + 0.000001 \\ \hline 1.010101 \\ \hline \end{array}$$

d) Write down the number whose standard form is

i) 3.12×10^2

$$3.12 \times 10^2 = \underline{\underline{312}}$$

(1mk)

ii) 8.888×10^{-2}

(2mks)

$$\begin{aligned} 8.888 \times 10^{-2} \\ = \underline{\underline{0.08888}} \end{aligned}$$

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