**RWAMAGANA DISTRICT**

**G.S MUYUMBU**

**DATE : 10/12/2021**

**S2 ALL**

 **FIRST TERM EXAMINATION**

**SUBJECT : MATHEMATICS / 60 MARKS**

1. Given that x=3 , y= 4 and w= 5,

evaluate $\frac{3y-5w}{w+x}$ **( 3marks )**

1. Write the following in its simplest index form
2. 96 **( 2 marks )**
3. Evaluate , writing your answer in the simplest form

a. $(\sqrt{3}+4)^{2}$ **( 2marks)**

b. $(3-\sqrt{2})(3+\sqrt{2})$ **( 2 marks )**

1. Simplify the following
2. $\frac{(3ab)(-4a^{2}b)}{-12b^{2} } $ **( 2 marks )**
3. $\frac{12x^{2} y^{2}-6xy^{2 }-18x^{2}y}{3xy}$ **( 2 marks )**
4. Remove brackets and simplify
5. $2\left(3x-y\right)+4\left(x+2y\right)-3(2x-3y)$ **( 2marks )**
6. $-\left(x+y\right)+x $ **( 2marks)**
7. $5a-4b-2\left[a-\left(2b+c\right)\right]$ **( 2 marks )**
8. Evaluate the following
9. $125^{^{2}/\_{3} }X 64^{^{1}/\_{2} }$ **(3marks)**
10. $2^{6} ÷2^{3}$ **( 3 marks )**
11. Given that $f\left(x\right)= 3x^{2 }+13x+14$ and $g\left(x\right)=x+2 $

Divide $f\left(x\right) by g\left(x\right)$ **( 3 marks )**

1. Given that P and Q are polynomials

 $P=2x^{3 }+3x^{2 }+6$

 $Q=2x^{3 }+2x^{2 }+4x-4$

 Find P+Q **( 3 marks )**

1. Use general method to find square root of the following.

$\sqrt{484 } $ **( 2 marks )**

1. Expand and simplify the following **( 4 marks )**
2. $\left(3x-2\right)(2x^{2}-2x+1 )$
3. $(y+4)(y-4)$
4. Solve the following
5. $3^{2x-5}=27$ **( 3 marks )**
6. $9^{x }X 3^{(2x-1)}= 3^{15}$ **( 3 marks )**
7. Solve the following equation for x **( 3 marks)**

$$2x^{2 }+3x+1=0$$

1. Write the following in standard notation (scientific notation). **( 3 marks )**

0.000342

1. Rationalise the denominator. **( 4marks )**
2. $\frac{5 }{\sqrt{5} -4}$
3. $\frac{\sqrt{3 }}{\sqrt{5}}+\frac{\sqrt{5}}{\sqrt{3}}$
4. Find the value of **a**, **b** and **c** in the identity **( 3marks )**

$$2x^{2}-x+1 ≡a \left(x-1\right)^{2 }+b\left( x-1\right)+c $$

1. If $xy=5 $ and $y=2$ find : **( 4marks )**
2. $x$
3. $2(x+y)$

**GOOD LUCK !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!**