**GATITU MIXED SECONDARY SCHOOL**

**MATHEMATICS FORM 4 END OF TERM 1 2015 EXAM**

**ATTEMPT ALL QUESTIONS**

1. Find the derivative of 2mks

Y = 2x3 + 8x2 + 8x

 X + 2

1. Find Y given

Dy/dx = 3x-2 – 2x-3  + x -4 3mks

1. The actual area of an irregular field is given as 275 ha. If the area of the same field on the map is 11 cm2, determine the linear scale in ratio form. 4mks
2. Given the inequalities 2x-5 > x≥ 2x -11, find the range of values of X which satisfy the inequality hence,
3. Represent the solution on a number line. 3mks
4. State the integral values that satisfy the inequality solution. 1mk
5. Find the equation of the tangent and normal to the curve

Y = x3 + 2 x + 1 at (1,4) 5mks

1. Use the trapezium rule with 6 strips to estimate the area bounded by the curve Y = ¼ x2 + 5, the x – axis and the lines x =-1 and x =5 4mks
2. The velocity of a particle moving in a straight line after t seconds is given by v= 6t – t2 + 4 ms -1 calculate ;
3. The acceleration of the particle after 2 seconds. 2mks
4. The distance covered between t =2 and t = 5 seconds 3mks
5. The time when the particle is momentarily at rest. 2mks
6. A rectangular box has a square base. The sum of one side of the square base and the height of the box is 30 cm. determine the maximum volume of the box. 5mks
7. A curve whose gradient function is 3 x2 – 3 has its two stationery points, one cut point (-1,8) and the other at point (1,b). Find its equation, and the value of b. 4mks
8. find the point at which the gradient of the curve y =x2 + 3x -1 is equal to 3 2mks