AHMES SECONDARY SCHOOL

FORM TWO HOLIDAY PACKAGE

MATHEMATICS

1. Given that $p = 13.56, q = 17.005$ and $r = 9.58$. By rounding each of the numbers above correct to significant figure, calculate the value of M if $M = \frac{pq}{r}$.
2. (a) If $a:b = 2:3$ and $b:c = 5:6$. Find $a:b:c$
   (b) Find the value of x if $5x:3 = x + 2:3$
3. A man sold his car at 1,200,000/= and made a loss of 30% Find the buying price.
4. Find the difference between LCM and GCF of 21,35 and 56.

5. Express $0.0\dot{8}$ in the form of $\frac{a}{b}$ where a and b are integers and $b \neq 0$
6. If $a:b = 4:9$ and $a:c = 3:7$. Find b:c
7. Solve the equation $|x + 5| \leq \frac{1}{2}$
8. A shopkeeper sold 392 T-shirts at the price of Tshs 7,950/=each. Approximate how much money he got.
9. Express $0.\dot{9}\dot{6}$ in the form of $\frac{a}{b}$ in its simplest form then evaluate
   i. $a + b$
   ii. $b - a$
   iii. ab
10. The total mass of cotton harvested in Kwimba district was 17,452.225 kg. Round off this number to the nearest
    i. Hundreds
    ii. Hundredths

11. If $x = 0\dot{3}$ and $y = 3.\dot{2}\dot{1}$. Find the value of z if $z = x + y$. Express z in the form of $\frac{a}{b}$ where a and b are integers and $b \neq 0$.

12. The operations an integer P and K is defined as $P * K = PK + 2P - 3K$.Find the value of
    i. $3 * 2$
    ii. The value of a if $5 * a = 20$

13. Given that $2x - 4 + 5y = 0$; Determine
    i. Slope
    ii. $y -$ intercept
    iii. $x -$ intercept

14. Solve the following simultaneous equation:

$$\begin{cases} x = 4 - \frac{3}{2}y \\ -3x + \frac{y}{2} = 1 \end{cases}$$

15. Rationalize the denominator of the expression $\frac{3}{1+\sqrt{2}}$
16. Solve for x if $\left(\frac{2}{3}\right)^{2x-1} = \left(\frac{3}{2}\right)^{-7}$
17. Factorize completely $t^3 - 4t$ and hence use the result concept to find the exact value of $(1003)^2 - (9997)^2$
18. Find the value of a if $\log_a 81 - \log_2 32 = -1$
19. The translation T maps the point $(-3,2)$to $(4,2)$. Find where will T maps
    i. Point $(-3,7)$
    ii. The origin
20. Without using mathematical table evaluate $\frac{\tan 45° + \sin 90°}{\tan 30° \cos 30° \sin 30°}$