REGULAR QUIZ 01

Form 2 Regular Course
Ratio and Ratio

Part A - MC (@2marks)

1.	B	$\frac{8x-15y}{x-2y}=5$ $8x-15y=5x-10y$ $3x=5y$ $x:y=5:3$
2.	B	$\frac{x+2}{x-1}=\frac{2}{3}$ $3(x+2)=2(x-1)$ $3x+6=2x-2$ $x=-8$
3.	B	$\frac{1}{a}:\frac{1}{b}=b:a=3:2=15:10$ $\frac{1}{b}:\frac{1}{c}=c:b=5:3=10:6$ $\therefore \frac{1}{a}:\frac{1}{b}:\frac{1}{c}=15:10:6$
4.	C	$\frac{5.86}{7.63}\times 100\approx 77$
5.	B	Rate of expansion $=\frac{465-450}{120-20}=0.15\,\text{mm/}^\circ\text{C}$
6.	C	Let the capacity of the swimming pool be x L. The rate of water discharged from a water pipe $=\frac{x}{6\times 4}=\frac{x}{24}$ L/h The rate of water discharged from 7 water pipes $=\frac{x}{24}\times 7=\frac{7x}{24}$ L/h $\therefore$ Time taken $=x\div\frac{7x}{24}\,\text{h}=\frac{24}{7}\,\text{h}\approx 3.4\,\text{h}$

7.	B	Let $5k$, $8k$ and $2k$ be the number of chocolates of Ricky, HY and Peter respectively. $2(8k-5k)=12$ $k=2$ Total number $=5k+8k+2k=30$
8.	C	The required ratio $=\frac{2b(7h)}{2}:\frac{3b(5h)}{2}=14:15$
9.	A	$3(42)+2(Y)=(3+2)(36)$ $\therefore Y=27\text{ kg}$
10.	B	$5d=12(10)$ $\therefore d=24\text{ days}$

1.	B	2.	B	3.	B	4.	C	5.	B
6.	C	7.	B	8.	C	9.	A	10.	B

Part B - Short Questions

1. (a) (i) $\frac{1197\text{km}}{570\text{min}}=\frac{1197\text{km}}{9.5\text{h}}=126\text{km/h}$ — 1M +1A

(ii) $\frac{1197\text{km}}{570\text{min}}=\frac{1197000\text{m}}{34200\text{s}}=35\text{m/s}$ — 1M +1A

(b) $\frac{2100\text{m}}{35\text{m/s}}=60\text{s}$ — 1M+1A

(6)

2. (a) $\frac{A}{5}=\left(\frac{0.8}{1}\right)^2$ — 1M

$A=3.2$

The actual area = 3.2 m^2 — 1A

(b) (i) The actual area

$=\frac{(2a+4)\times 80\times 5\times 80}{100\times 100}$ — 1M (for 80×80) +1M (for 100)

$=(6.4a+12.8)\text{ m}^2$ — 1A

(ii) $6.4a+12.8=48$

$a=5.5$ — 1M

The actual perimeter

$=2\left[2(5.5)+4+5\right]\times 80$ — 1M

$=3200\text{cm (or 32m)}$ — 1A

(8)

3. (a) $x : y = 3 : 1 = 9 : 3$ 1M

$y : z = 3 : 8$

$\therefore x : y : z = 9 : 3 : 8$ 1M + 1A

(b) Let $x = 9k, y = 3k, z = 8k$ 1M

$(x + z) : (y + z) = \dfrac{9k + 8k}{3k + 8k} = \dfrac{17k}{11k} = 17 : 11$ 2A

(6)

4. (a) Let the number of \$50, \$20 and \$10 notes be $3k$, $2k$, and $5k$ respectively.

$50(3k) + 20(2k) + 10(5k) = 1680$ 1M

$k = 7$

$\therefore$ There are 21 \$50 notes, 14 \$20 notes and 35 \$10 notes. *2A for all corrects (1A for only 1 correct)

(b) The new ratio

$\dfrac{21 + 10}{70 + 10} = \dfrac{31}{80} = 31 : 80$ 2M+1A

(6)