Quiz Date: 6th September 2020

Directions (1-3): In the following questions, calculate quantity I and quantity II, compare them and answer
(a) If quantity I > quantity II
(b) If quantity I < quantity II
(c) If quantity I ≥ quantity II
(d) if quantity I ≤ quantity II
(e) if quantity I = quantity II or no relation can be established

Q1.
Quantity 1: - A 180m long train crosses the 270m long bridge in 10 sec. then find the speed of train. (in m/s)
Quantity 2: - A person travels 60kms in 1 hour, the next 120 kms in 3 hour and next 180 km in 2 hour. find the average speed during the whole journey. (in m/s)

Q2.
Quantity 1: - find the area of rectangle whose length is 17m and breadth is 19m. (in m^2)
Quantity 2: -find the area of rhombus whose diagonal sare 18m and 32m respectively. (in m^2)

Q3.
Quantity 1: -B is 10% more than C and 20% more than A. if average of A, B and C is $\frac{181}{6}$. find out the value of B
Quantity 2: -if A: B= 3:4 and B:C =8:9, the average of A, B and C is 46. find out value of B

Directions (4-5): The following questions are accompanied by two statements **(I)** and **(II)**. You have to determine which statements(s) is/are sufficient/necessary to answer the questions.
(a) Statement **(I)** alone is sufficient to answer the question but statement **(II)** alone is not sufficient to answer the question.
(b) Statement **(II)** alone is sufficient to answer the question but statement **(I)** alone is not sufficient to answer the question.
(c) Both the statements taken together are necessary to answer the question, but neither of the statements alone is sufficient to answer the question.
(d) Either statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
(e) Statements **(I)** and **(II)** taken together are not sufficient to answer the question.

Q4. What is the present age of Shivam.
I. Average of present ages of Dharam, Shivam and Abhishek is 20 years and ratio of their present ages is 5 : 3 : 4 respectively.
II. Abhishek is 5 year older than Shivam. Five years ago, age of Dharam was twice of age of Shivam.

Q5. What is the rate of interest?

I. Shubham invest an amount of Rs 384 at compound interest and after 3 years he got a sum of Rs 750.
II. Amount becomes 3 times of sum if Shubham invests at simple interest for 8 years.

Directions (6-10): Study the given passage carefully and answer the questions given below. There are three Sports Academy in a town i.e. A, B and C where only two games i.e. football and Hockey are played. Football players in Sports Academy A are 120 which is 25% percent of total players in that Sports Academy. Hockey players in Sports Academy B is half of total players in Sports Academy A which is equal to football players in Sports Academy C. Total players in Sports Academy C is $\frac{5}{2}th$ of football players in Academy A. Ratio of total players in Academy B to Academy C is 5 : 4.

Q6. Total players in Academy A are what percent more or less than that in Academy C?
(a) 70%
(b) 75%
(c) 48%
(d) 60%
(e) None of these

Q7. Football players in Academy B is what percent of total players in this Academy ?
(a) 36%
(b) 42%
(c) 32%
(d) None of these
(e) 28%

Q8. What is the difference between total football players and total Hockey players including all sports academy?
(a) None of these
(b) 145
(c) 165
(d) 185
(e) 120

Q9.What is ratio of Hockey players in Academy B to Football players in Academy A ?

(a) 2 : 1
(b) None of these
(c) 1 : 3
(d) 1 : 2
(e) 3 : 2

Q10. Find the average of total Hockey players in all three Sports Academy ?
(a) None of these
(b) 130
(c) 330
(d) 320
(e) 220

Solutions

S1.Ans (a)
Sol.
Quantity 1
speed of train $= \frac{180+270}{10}$
$= \frac{450}{10}$
$= 45 m/s$

Quantity 2
Average speed $= \frac{60+120+180}{1+3+2}$
$= \frac{360}{6}$
$= 60 km/h$
$= 60 \times \frac{5}{18} m/s$
$= \frac{50}{3} m/s$

So, Quantity 1 >Quantity 2

S2.Ans (a)
Sol
Quantity 1
Area of rectangle= length × breadth
$= 17 \times 19$
$= 323$ sq.m.

Quantity 2
Area of rhombus $= \frac{1}{2} \times d_1 \times d_2$
$= \frac{18 \times 32}{2}$
$= 288$ sq.m.

So, Quantity 1> Quantity 2

S3.Ans (b)
Sol: -
Quantity 1
$B = \frac{110}{100} \times C = \frac{120}{100} \times A$
A: B:C=55:66:60 or 55x : 66x : 60x
Average of A, B and C=$\frac{55x+66x+60x}{3}$
$\frac{181}{6} = \frac{181x}{3}$
$X = \frac{1}{2}$
So, $B = \frac{66}{2} = 33$
Quantity 2
A: B=3:4
B:C=8:9
So, A: B:C=6:8:9 or 6x : 8x : 9x

Average of A, B and C=$\frac{6x+8x+9x}{3}$
$46 = \frac{23x}{3}$
$X = 6$
$B = 8 \times 6 = 48$

So, Quantity 1< Quantity 2

S4. Ans (a)
Sol. from I
Let present ages of Dharam, Shivam and Abhishek be 5x, 3x and 4x years respectively.
Now, $\frac{5x+3x+4x}{3} = 20$
$12x = 60$
$x = 5$
So, present age of Shivam $= 3x = 15\ years$
From II,
Let present ages of Dharam, Shivam and Abhishek be D, S and A years respectively.

So, A = S + 5 .....(i)
And, D – 5 = 2 (S – 5)
D = 2S – 5 .....(ii)
As, there are three variable and two equation. So we cannot solve this further.
∴ only I is sufficient.

S5. Ans (d)
Sol. from I,
Let R be the rate of interest.
$750 = 384\left(1+\frac{R}{100}\right)^3$
$\frac{750}{384} = \left(1+\frac{R}{100}\right)^3$
$\frac{125}{64} = \left(1+\frac{R}{100}\right)^3$
$\frac{5}{4} = 1+\frac{R}{100}$
$R = 25\%$
From II,
Let Rs P be the principle amount and R be the rate of interest.
ATQ
$2P = \frac{P\times R\times 8}{100}$
$R = 25\%$
so, either I or II is sufficient.

Sol (6-10):
Total players in A = 120 × 4 = 480
Hockey players in A = 480 – 120 = 360
Hockey players in B = $\frac{480}{2}$ = 240
Football players in C = 240
Total players in C = $\frac{5}{2}\times 120 = 300$
Hockey players in C = 300 – 240 = 60
Total players in B = $\frac{300}{4}\times 5 = 375$
Football players in B = 375 – 240 = 135

Sports Academy	Football	Hockey	Total
A	120	360	480
B	135	240	375
C	240	60	300

S6. Ans.(d)
Sol.
Required percentage = $\frac{480-300}{300}\times 100 = 60\%$

S7. Ans.(a)
Sol.
Required percentage = $\frac{135}{375} \times 100 = 36\%$

S8. Ans.(c)
Sol.
Required difference = (360 + 240 + 60) – (120 + 135 + 240)
= 660 – 495
= 165

S9. Ans.(a)
Sol.
Required ratio = $\frac{240}{120} = 2 : 1$

S10. Ans.(e)
Sol.
Required average = $\frac{(360+240+60)}{3} = 220$