Quiz Date: 8th April 2020

Directions (1-5): The following questions are accompanied by three statements (A) or (I), (B) or (II), and (C) or (III). You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

Q1. What is the value of a two–digit number in which digit at tens place is greater than digit at unit place?

A. The sum of the digits is 5.

B. The difference of the squares of the digits is 15.

C. The difference of their digits is 3.

(a) A and B together are sufficient

(b) B and C together are sufficient

(c) C and A together are sufficient

(d) Any one pair of A and B, B and C or C and A is sufficient

(e) A, B and C together are necessary

Q2. What is the rate of interest at which Binod has invested money?

A. The compound interest at this rate on Rs 2500 in 2 yrs is equal to the simple interest in 3 yrs on Rs 1716 (2/3) at the same rate.

B. The total simple interest on an investment of Rs 12000 for 3 yrs and Rs 10000 for 5 yrs at this rate is Rs 5160.

C. In 3 yrs, Rs 1500 at the same rate becomes Rs 1770 by simple interest.

(a) Any of them

(b) A and either B or C

(c) Only C

(d) Only A and either B or C

(e) Any two of them

Q3. A person travels from X to Y and back again. How long will it take in travelling both the ways by bus?

A. It takes 21 hours in travelling from X to Y by train and returning by bus.

B. The distance between X and Y is 648 km.

C. A person can save 3 hours if he travels both the ways by train as compared to travelling by bus on the one side and returning by train.

(a) Only A and C together

(b) B and either A or C

(c) Any two of them

(d) All statements are necessary

(e) Question can't be answered even after using all the information

Q4. Find the number of days in which Q can do a job if P can do the same job in 8 days.

A. Q is 60% more efficient than P.

B. P and Q together can do the job in $\frac{10}{3}$ days.
C. P is $\frac{75}{2}$ % less efficient than Q.
(a) Only A is sufficient
(b) Only B is sufficient
(c) Either A or B is sufficient
(d) Any of them
(e) A and C together are sufficient

Q5. What will be the cost of fencing a rectangular plot (cost per meter is same in each case)?
A. Cost of fencing a circular plot whose area is 616 m^2 is Rs 968.
B. Perimeter of the rectangular plot is 200 m.
C. Perimeter of a square whose length is equal to the breadth of the rectangular plot is 20 m.
(a) Only C
(b) A and C together
(c) All statements are necessary
(d) A and either B or C
(e) Question can't be answered even after using all the information

Directions (6-10): In the given questions, two quantities are given, one as Quantity I and another as Quantity II. You have to determine relationship between two quantities and choose the appropriate option
Q6. In a two digits number, digit at tenth place is less than the digit in its unit place by 2 and the product of the required number with the sum of its digit is equal to 144.
Quantity I: Value of two digits number
Quantity II: 26
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q7. Quantity I : Days after which X and Y meet. X and Y set out to meet each other from two places 165 km apart. X travels 15 km the first day, 14 km second day, 13 km the third day and so on, Y travels 10 km the first, 12 km the second day, 14 km the third day and so on.

Quantity II: Number of days required to complete the whole work if X, Y and Z can complete a piece of work in 10, 12 and 15 days respectively. They started working together. X left the work 5 days before the work was completed and Y left 2 days after X had left.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q8. Quantity I: Present age of Ratan, if 10 years are subtracted from the present age of Ratan, then you would get twelve times of the present age of his grandson Satan and Satan is 19 years younger to Badan whose age is 24 years.
Quantity II: Average age of the remaining persons in the group if average age of group of 14 persons is 27 years and 9 months. Two persons, each 42 years old, left the group.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q9. Quantity I: Percentage profit earned by the shopkeeper if at the time of selling and purchasing he uses weights 10% less and 20% more per kilogram respectively and professes to all goods at 5% profit.
Quantity II: 'x': A book was sold for a certain sum and there was a loss of 20%. Had it been sold for Rs 12 more, there would have been a gain of 30%. 'x' would be value of profit percent if the book were sold for Rs 4.8 more than what it was sold for.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q10. A group consists of 4 couples in which each of the 4 persons have one wife
Quantity I : Number of ways in which they could be arranged in a straight line such that the men and women occupy alternate positions
Quantity II: Eight times the number of ways in which they be seated around circular table such that men and women occupy alternate position.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

S1. Ans.(d)
Sol.

Let unit digit be y and ten's digit be x.
From I, $x + y = 5$
$x^2 - y^2 = 15$
$x - y = 3$
To determine the no. any two statements are sufficient.

S2. Ans.(a)
Sol. Let the rate of interest be r%

A. $2500\left[\left(1+\frac{r}{100}\right)^2 - 1\right] = \frac{5150}{3} \times r \times \frac{3}{100}$

B. $12000 \times r \times \frac{3}{100} + 10000 \times r \times \frac{5}{100} = 5160$

C. $r = \frac{1770-1500}{3\times1500} \times 100 = 5\%$

Hence, any one of them is sufficient.

S3. Ans.(a)
Sol. From statements (A) and (C),
The person will take (21 - 3) 18 hrs, if he travels both the ways by train. So, it takes ($\frac{18}{2}$ = 9)hrs if he travels one way by train. Hence, he will take (9 + 3) 12 hrs if he travels one way by bus.
So, Required time = 12 × 2 = 24 hrs.

S4. Ans.(d)
Sol. Since each statement provides data related to another one so any of the three statements is sufficient.

S5. Ans.(c)
Sol. Statement (A) gives the cost of fencing one metre of the plot. Combining this with statement (B) and (C), total cost of fencing can be determined.

S6. Ans.(b)
Sol.
Quantity I

Let the number be 10x +y
Acc. to question
y = x + 2
and
(10x +y) (x+ y) = 144
(10x + x+ 2) (x+ x + 2) =144
(11x+ 2) (x +1) = 72
$11x^2 + 13x + 2 = 72$
$11x^2 + 13x - 70 = 0$
$11x^2 + 35x - 22x - 70 = 0$
On solving x = 2
Number is 24
Quantity II > Quantity I

S7. Ans.(b)
Sol.
Quantity I
Let they meet after 'n' days
Applying Arithmetic progression
$\frac{n}{2}[2 \times 15 + (n-1)(-1)] + \frac{n}{2}[20 + (n-1)2] = 165$
$\frac{n}{2}[30 - n + 1 + 20 + 2n - 2] = 165$
$n^2 + 49n - 330 = 0$
n = –55, +6
so, they will meet in 6 days
Quantity II
Let required no. of days = x

$\frac{(x-5)}{10} + \frac{(x-3)}{12} + \frac{x}{15} = 1$
$\frac{6x-30+5x-15+4x}{60} = 1$
$15x - 45 = 60$
$15x = 105$
$x = 7$ Days

Quantity II > Quantity I

S8. Ans.(a)
Sol.
Quantity I:
Let present age of Ratan = x
$\frac{x-10}{12} = 24 - 19$
x – 10 = 5×12
x = 70 years

Quantity II:
Required average
$= \frac{14 \times \frac{111}{4} - 2 \times 42}{12}$
$= \frac{\frac{777}{2} - 84}{12}$
$= \frac{609}{24} = \frac{203}{8}$
= 25.375 year
Quantity I > Quantity II

S9. Ans.(a)
Sol.
Quantity I:
Let C.P of 100 gm = 100 Rs
So, he purchases 120 gm in 100 Rs
And sell 90 gm in $= \frac{105}{100} \times 100$ RS
So, % profit
$= \frac{\text{S. P.} - \text{C. P.}}{\text{C. P.}} \times 100$
$= \frac{\frac{105}{90} - \frac{100}{120}}{\frac{100}{120}} \times 100$
$= \frac{\frac{21}{18} - \frac{5}{6}}{\frac{5}{6}} \times 100 = \frac{\frac{21-15}{18}}{\frac{5}{6}} \times 100$
$= \frac{36}{90} \times 100$
= 40% profit
Quantity II:
50% → 12 Rs
So, 100→ 24 Rs
So, 80% → 19.2
There will be 0% profit if the book were sold for Rs.4.8 more

Quantity I > Quantity II

S10. Ans.(e)
Sol.
Quantity I:
Let first we arrange all 4 men in 4! Ways then we arrange 4 women in ${}^4P_4$ ways at 4 places either left of the man or right of the man.
$= 4! \times {}^4P_4 + 4! \times {}^4P_4 = 2 \times 576$
$= 1152$
Quantity II:
Let first we arrange 4 men in 3! Ways, then 4 women can be arranged in 4 places in ${}^4P_4$ ways
$= 3! \times {}^4P_4 = 144$
$= 144 \times 8$
$= 1152$