Quiz Date: 17th May 2020

Directions (1-5): In the following questions two quantities are given for each question. Compare the numeric value of both the quantities and answers accordingly.

Q1.**Quantity I:** $x^2 - 6x + 8 = 0$

   Quantity II: $y^2 + 2y - 8 = 0$
 (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

Q2. A man invested Rs. 8000 in scheme A for 4 years at Simple Interest which offers interest rate of 20% p.a and Rs. 7200 in scheme B for 3 years which offers 25% p.a at Simple interest.
   Quantity I: Interest earned from scheme A
   Quantity II Sum of interest earned from scheme 'B' and Rs. 640
 (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

Q3. Sum of speed of boat in downstream and in upstream is 24 km/hr while speed of boat in still water is 200% more than speed of stream.
Quantity I: Time taken to cover 96km downstream
Quantity II: Time taken to cover 60km upstream
 (a) Quantity I > Quantity II
 (b) Quantity I ≤ Quantity II
 (c) Quantity I ≥ Quantity II
 (d) Quantity I = Quantity II or No relation
 (e) Quantity I < Quantity II

Q4.   **Quantity I :** Find the principal if the compound interest is charged on principal at the rate of $16\frac{2}{3}$% per annum for two years and the sum becomes Rs 245.
 Quantity II : A sum of Rs 500 amounts to Rs 620 in 4 yrs at simple interest. What will Rs 150 amount to if the rate of interest is same and time period is $2\frac{1}{2}$ yrs.
 (a) Quantity I > Quantity II
 (b) Quantity II > Quantity I
 (c) Quantity I >= Quantity II
 (d) Quantity II >= Quantity I
 (e) Quantity I = Quantity II or relation can't be established

Q5.**Quantity I:** $x^2 - 5x + 4 = 0$

Quantity II: $y^2 + 3y + 2 = 0$
 (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

Directions (6-10):-Find the wrong number in the given number series questions.

Q6.   17,   20,   25,   37,   57,   87,   129
(a) 17
(b) 129
(c) 25
(d) 87
(e) 20

Q7.   128,   64,   96,   240,   840,   3800,   20790
(a) 3800
(b) 128
(c) 20790
(d) 96
(e)240

Q8.   14,   20,   40,   82,   154,   264,   450
(a) 154
(b) 20
(c) 264
(d) 14
(e) 450

Q9.   64,   56,   65,   49,   74,   38,   87
(a) 87
(b) 64
(c) 38
(d) 56
(e) 49

Q10. 2,   5,   11,   35,   143,   719,   4319
(a) 11
(b) 719
(c) 5
(d) 4319
(e) 2

Directions (11 – 15): In the following questions two quantities are given for each question. Compare the numeric value of both the quantities and answers accordingly.
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I ≥ Quantity II
(d) Quantity II ≥ Quantity I
(e) Quantity I = Quantity II or relation can't be established.

Q11.   **Quantity I:** How many litres of water will flow through a pipe of cross-section area 10 cm² in $1\frac{1}{2}$ min if the rate of flow of water through the pipe is 20 cm/sec.

   Quantity II: A mixture   of milk and water has 60% milk. Another mixture has 25% water. What quantity of 60% milk content is mixed with 9 liters of 25% milk content to prepare a new mixture of 65% milk content?

Q12.   **Quantity I :** The ratio of age of Heena 7 years ago to that of Meena 12 years ago was 5 : 6. And the ratio of age of Meena and Heena 8 years hence will be 5 : 4. Then find the average of their present age.

   Quantity II: The average age of 6 students in a school is 24.5 years. When a new student joined them, the average is increased by 1.5 years. Again, when another new student is included the average is further increased by 2.5 years. Find the average of the age of two new students.

Q13.   **Quantity I:** Gopal saves 12% of his income. If his income is increased by 20% and expenditure increases by $\frac{1}{8}$th of the original expenditure. Then find the increment/decrement in his savings is what percent of his initial income.

   Quantity II: The compound interest received on Rs. 40,000 in 2 years is Rs. 7961. Then find the rate of interest (per annum).

Q14.   **Quantity I:** In a bag, there are 6 green and 4 red marbels, three marbels are taken one after the other. Find the probability of all three marbels being red if marbels taken are not replaced ?

   Quantity II: An integer is choosen at random from the first 300 integers. What is the probability that this number will be divisible by 28.

Q15.   **Quantity I:** Bhavya alone can do ⅔rd of a work in 12 days while Sambhu alone can do $\frac{3}{4}$th of the work in 18 days. Find the time taken by both to finish the same job.

QuantityII: 12 men can complete a work in 11 days. 5 days after they had started working, 4 more men joined them. Find the total time in which work will complete.

Solutions

S1. Ans.(c)
Sol.
Quantity I
$x^2 - 6x + 8 = 0$
$x^2 - 4x - 2x + 8 = 0$
$x(x - 4) - 2(x - 4) = 0$
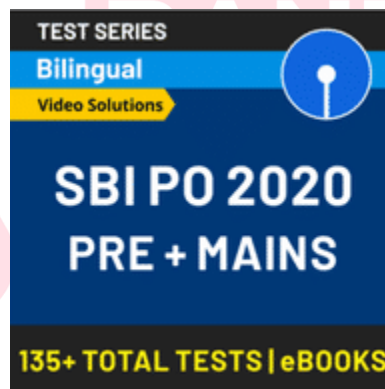$(x - 4)(x - 2) = 0$
$x = 2, 4$
Quantity II
$y^2 + 2y - 8 = 0$
$y^2 + 4y - 2y - 8 = 0$
$y(y + 4) - 2(y + 4) = 0$
$(y + 4)(y - 2) = 0$
$y = -4, 2$
Quantity I ≥ Quantity II

S2. Ans.(a)
Sol.
Quantity I
Interest earned from scheme 'A' = $\frac{8000 \times 4 \times 20}{100} = Rs\ 6400$
Quantity II
Interest earned from scheme 'B' = $\frac{7200 \times 3 \times 25}{100} = Rs\ 5400$
Quantity II = $5400 + 640 = Rs\ 6040$
Quantity I > Quantity II

S3. Ans.(e)
Sol.
Let speed of boat in still water and speed of stream be 'a' km/hr and 'b' km/hr respectively
ATQ,
$a + b + a - b = 24$

$\Rightarrow a = 12 km/hr$
$But, a = 3b$
$\Rightarrow b = 4 km/hr$
Speed of boat in downstream = $12 + 4 = 16 km/hr$
Speed of boat in upstream = $12 - 4 = 8 km/hr$
Quantity I :
Required time = $\frac{96}{16} = 6$ *hours*
Quantity II :
Required time = $\frac{60}{8} = 7.5$ *hours*
Quantity II > Quantity I

S4. Ans.(a)
Sol.
Quantity I
$$A = P \left(1 + \frac{R}{100}\right)^n$$
$$\Rightarrow 245 = P \left(1 + \frac{1}{6}\right)^2$$
$$\Rightarrow 245 = P \left(\frac{7}{6}\right)^2$$
$$\Rightarrow \frac{245 \times 36}{49} = P = Rs\ 180$$
Quantity II
$$R = \frac{120 \times 100}{500 \times 4} = 6\%$$
$Amounts = 150 + \frac{150 \times 6 \times 5}{2 \times 100} = 22.5 + 150$
= Rs 172.5
Quantity I > Quantity II

S5. Ans.(a)
Sol.
Quantity I
$x^2 - 5x + 4 = 0$
$x^2 - 4x - x + 4 = 0$
$x(x - 4) - 1(x - 4) = 0$
$(x - 1)(x - 4) = 0$
$x = 1, 4$
Quantity II
$y^2 + 3y + 2 = 0$
$y^2 + 2y + y + 2 = 0$
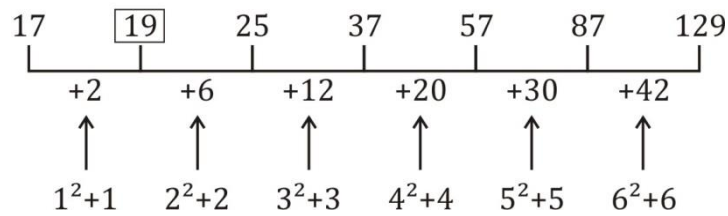$y(y + 2) + 1(y + 2) = 0$
$(y + 1)(y + 2) = 0$
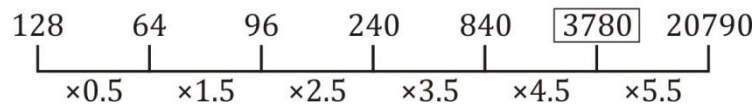$\Rightarrow y = -1, -2$
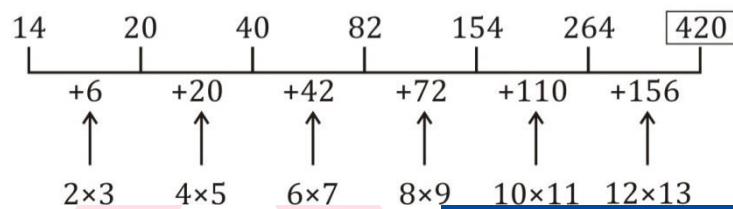**Quantity I > Quantity II**

S6. Ans.(e)
Sol.

17	[19]	25	37	57	87	129

$+2$ $+6$ $+12$ $+20$ $+30$ $+42$

1^2+1 2^2+2 3^2+3 4^2+4 5^2+5 6^2+6

S7. Ans.(a)
Sol.

128	64	96	240	840	[3780]	20790

$\times 0.5$ $\times 1.5$ $\times 2.5$ $\times 3.5$ $\times 4.5$ $\times 5.5$

S8. Ans.(e)
Sol.

14	20	40	82	154	264	[420]

$+6$ $+20$ $+42$ $+72$ $+110$ $+156$

2×3 4×5 6×7 8×9 10×11 12×13

S9. Ans.(b)
Sol.

[60]	56	65	49	74	38	87

-2^2 $+3^2$ -4^2 $+5^2$ -6^2 $+7^2$

S10. Ans.(e)
Sol.

[5]	5	11	35	143	719	4319

$\times 1+0$ $\times 2+1$ $\times 3+2$ $\times 4+3$ $\times 5+4$ $\times 6+5$
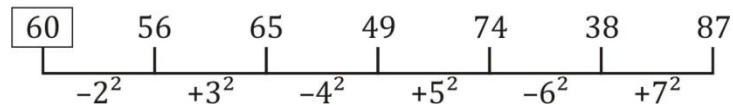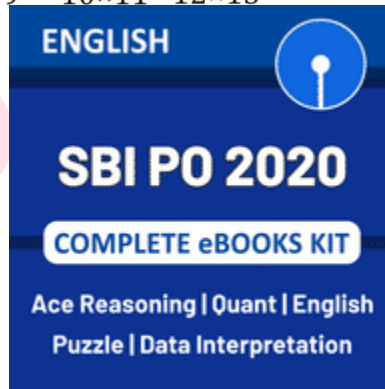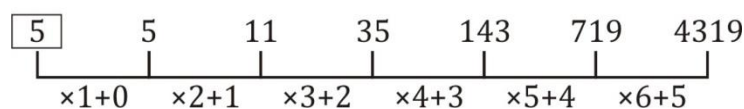
S11. Ans.(e)
Sol.
Quantity I.
Quantity of water = 10 × 90 × 20 = 18000 cm³
1000 cm³ = 1 lit ⇒ 18000 cm³= 18 lit

Quantity II.

Mixture I	**Mixture II**
60%	75%

$$\underline{\qquad\qquad 65\% \qquad\qquad}$$

10%	:	5%
2	:	1

1 unit → 9 lit
2 unit → 18 lit
Quantity I = Quantity II

S12. Ans.(b)
Sol.
Quantity I: Let present age of Heena be x years.
and the present age of Meena be y years.
ATQ,
$\frac{x-7}{y-12} = \frac{5}{6}$ ⇒ 6x – 42 = 5y – 60
⇒ 6x – 5y = – 18 ...(i)
And
$\frac{y+8}{x+8} = \frac{5}{4}$
⇒ 4y + 32 = 5x + 40
⇒ 5x – 4y = – 8 ...(ii)
From (i) and (ii),
x = 32 years and y = 42 years
Required average = $\frac{32+42}{2}$ = 37 years.

Quantity II
Age of first new student = 7 × 26 – 6 × 24.5 = 35 years.
Age of second new student = 8 × 28.5 – 7 × 26 = 46 years.
Required average = $\frac{35+46}{2}$ = 40.5 years.
Quantity II > Quantity I

S13. Ans.(b)
Sol.
Quantity I: Let the income of Gopal be 100x
Saving = Rs 12x, Expenditure = 100x – 12x = Rs. 88x
New income = Rs. 120x

New expenditure = Rs. $88x \times \frac{9}{8}$ = Rs. $99x$

New savings = Rs. $120x - 99x$ = Rs. $21x$

Increment in saving = $21x - 12x$ = Rs. $9x$

Required % = $\frac{9x}{100x} \times 100$ = 9%

Quantity II:

$7961 = 40000\left[1 + \frac{R}{100}\right]^2 - 40000$

$\Rightarrow \left[1 + \frac{R}{100}\right]^2 = \frac{47961}{40000}$

$\Rightarrow \left[1 + \frac{R}{100}\right] = \sqrt{\frac{47961}{40000}} = \frac{219}{200}$

$\Rightarrow \frac{R}{100} = \frac{19}{200} \Rightarrow$ R = 9.5%

Quantity II > Quantity I

S14. Ans.(e)

Sol.

Quantity I:

Required probability = $\frac{4}{10} \times \frac{3}{9} \times \frac{2}{8} = \frac{1}{30}$

Quantity II:

Number divisible by 28 (up to 300) = $\frac{300}{28}$ = 10

Required probability = $\frac{10}{300} = \frac{1}{30}$

Quantity I = Quantity II

S15. Ans.(a)

Sol.

Quantity I:

Time taken by Bhavya alone to complete the work = $\frac{3}{2} \times 12$ = 18 days.

Time taken by Sambhu alone to complete the same work = $\frac{4}{3} \times 18$ = 24 days

Time taken by both = $\frac{18 \times 24}{24 + 18} = \frac{72}{7}$ days.

Quantity II:

Let the efficiency of 1 man = 1 unit/day

Total work = 11 × 12 = 132 unit

In 5 days = 12 × 5 = 60 unit

Remaining work = 72 unit

Total time = $5 + \frac{72}{16} = 9\frac{1}{2}$ days.

Quantity I > Quantity II

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