SBI Clerk Previous Year Question Paper 2019

Quantitative Aptitude

Q 1. The diameter of a circular field is equal to the side of a square field. If the total cost of fencing the circular field is Rs 440/- at Rs 5/- per metre. What is the perimeter of the square field?

1. 120
2. 135
3. 160
4. 144
5. 112

Answer: 5

Solution 1:

Let the diameter of the circle be ‘a’.

The Diameter of the circle = Side of the square = a

Circumference of the circle = 2 π r

Diameter = a, radius = a / 2

Therefore circumference = 2 × π × (a / 2) metres

Cost of fencing the circle directly implies the cost of fencing the circumference and the cost of fencing is Rs 5 per metre and the total cost is Rs 440/- It can be represented mathematically as

5 × [2 × (22 / 7) × (a / 2)] = 440

Solving the above equation, a = 28 metres.

Hence perimeter of square = 4 × 28 = 112 metres.

Q 2. The ratio of base and perpendicular side of a right-angled triangle is 3:4 and its base is equal to the side of the square having area 81 cm^2. Find the perimeter of the triangle.

1. 30
2. 36
3. 33
4. 40
5. 42

Answer: 2

Solution 2:

Area of square = 81 cm^2

Side of the square = 9 cm = Base of the triangle

The Ratio of base and perpendicular height = 3:4

Base = 3x = 9

Therefore, x = 3 cm

Perpendicular height = 4x = 4 * 3 = 12 cm

We can find the hypotenuse using the Pythagoras theorem, the sum of the squares of the sides is equal to the square of the hypotenuse.

$9^2 + 12^2 = (\text{Hypotenuse})^2$

$(\text{Hypotenuse})^2 = 225$

Hypotenuse = 15 cm

Hence perimeter of the triangle = 15 + 12 + 9 = 36 cm

Q 3. A alone can do a work in 12 days while A and B together can do that work in 7.5 days. Find the time taken by C alone to that work if C takes 3 days more than that of B alone to do that work?

1. 23
2. 25
3. 30
4. 15
5. 20

Answer: 1

Solution 3:

Best way to work is through the percentage fraction method.

It is important to internalise the fraction to percentage conversions for faster conversion.

Work done by A alone = 12 days.

Work done by A = 1 / 12 = 8.33%

Work done by A and B together = 7.5 days

Work done by A and B together = 1 / 7.5 = 13.33 %

Work done by B alone = 13.33 % - 8.33 % = 5 %

1 day work of B alone = 5 % = 1/20

B will complete the work in 20 days.

C will take 3 more days than B, hence C will complete the work in 23 days.

Q 4. Find the total distance covered by boat in each upstream and downstream in 7 hours if the speed of the boat in still water and speed of the current is 21 km/hr and 3 km/hr respectively.

1. 280 km
2. 294 km
3. 315 km
4. 301 km
5. 322 km

Answer: 2

Solution 4:

Speed in downstream = Speed of boat + Speed of current = 21 + 3 = 24 Km/hr

Speed in upstream = Speed of boat - Speed of current = 21 - 3 = 18 km/hr

Required Total distance travelled = Speed ✕ time

= (24 + 18) km/hr ✕ 7 hr

= 42 ✕ 7

= 294 Km

Q 5. 4 years ago, the ratio of Shivam's age to Deepak's age was 2:3 and ratio of Shivam's age 4 years ago to Deepak's age 5 years hence is 8:15. Find the present age of Shivam.

1. 32 years
2. 40 years
3. 28 years
4. 24 years
5. 60 years

Answer: 3

Solution 5:

Let Shivam's age = a

Let Deepak's age = b

4 years ago, the ratio of Shivam's and Deepak's age was 2:3

It can be written mathematically as

(a - 4) / (b - 4) = 2 / 3

3a - 2b = 4 --------- (1)

(a - 4) / (b + 5) = 8 / 15

15a - 8b = 100 -------- (2)

Solving equation 1 and 2 we get,

Age of Shivam = 28 years.

Q 6. A mixture has milk and water in the ratio 4:1. When 50 % of the mixture is taken out and replaced by 24 litres of water then the ratio of milk to water in the mixture becomes 1:1. Find the initial quantity of the mixture.

1. 80 litres
2. 45 litres
3. 70 litres
4. 60 litres
5. 75 litres

Answer: 1

Solution 6:

Let the initial quantity of milk and water in the mixture be 40x and 10x respectively.

When half of the quantity is removed the quantity of milk 40x becomes 20x

When half of the quantity is removed the quantity of water 10x becomes 5x

Since 24 litres of water is added then the quantity of water is 5x + 24

The above quantity ratio is 1:1 after removal of 50% of the mixture.

The above quantities can be represented mathematically as

20x / 5x + 24 = 1 / 1

Solving the above expression, we get x = 1.6

So initial quantity of mixture = 40x + 10x = 50x = 50 * 1.6 = 80 litres

Q 7. A, B and C invested in the ratio 7: 8: 5 in a business. They got an annual profit of Rs 136800. If A and C withdrew their amount at the end of 3 months and 7 months respectively. Then find the difference between A and C's share of profit.

1. Rs 12,600
2. Rs 11,500
3. Rs 13,500
4. Rs 10500
5. Rs 13000

Answer: 1

Solution 7:

The Ratio of profit-sharing = 7 ✕ 3: 8 ✕ 12: 5 ✕ 7

= 21: 96: 35

The difference in the ratio of profit sharing of A and C = 35 - 21 = 14

Therefore the difference amount is

[14 / (21 + 96 + 35)] ✕ 136800 = [14 / 152] ✕ 136800

= Rs 12,600/-

Q 8. A boat takes 5 hours to travel a distance of 105 km downstream. The speed of the boat is 1.4 times the speed of the boat upstream. What is the speed of the current? (in Kmph)

1. 4
2. 2.5
3. 3.5
4. 3
5. 5

Answer: 4

Solution 8:

Let the Speed of the boat travelling upstream = S_U

Let the speed of current = S_c

Let the speed of the boat in still water = S_B

Let the speed of the boat travelling downstream = S_D

Speed of the boat travelling downstream $S_D = S_B + S_c$

Speed of the boat travelling upstream $S_U = S_B - S_c$

Time, t = 5 hrs, Distance travelled downstream d = 105 Km

$S_D = d / t = 105 / 5 = 21$ km/hr

$S_D = S_B + S_c = 21$ km/hr ----- (1)

As per the question, $S_D = 1.4\ S_U$

$S_B + S_c = 1.4 (S_B - S_c)$

$21 = 1.4 (S_B - S_c)$

$S_B – S_c = 15$ km/hr ------- (2)

Solving equation (1) and (2) we get,

$S_B = 18$ km/hr

Substituting the value in one of the above equations, we get

$S_c = 3$ km/hr

Q 9. The difference between the compound interest received in the first year and the second year at 20 % annum at C.I. is Rs 1200/- then find the sum?

1. Rs 25,000
2. Rs 36,000
3. Rs 30,000
4. Rs 24,000
5. Rs 35,000

Answer: 3

Solution 9:

Let the sum be Rs 100x

CI in the first year = Rs 20x

CI in 2 years = 44% of 100x = Rs 44x

CI in 2nd year = 44x - 20x = 24x

24x - 20x = 1200

X = 300

Required sum = Rs 30,000/-

Q 10. The ratio of income of A to that of B is 5:9. If the expenditure of A is 3/8th of his income, and expenditure of B is 4/9th of his income and sum of their saving is Rs 1950 then find the difference between their income.

1. 980
2. 975
3. 990
4. 960
5. 950

Answer: 4

Solution 10:

Let the income of A and B be 5x and 9x respectively.

Expenditure of A = (⅜) 5x = Rs 15/8 x

Savings of A = 5x - 15x/8 = Rs 25x / 8

Expenditure of B = (4 / 9) 9x = Rs 4x

Savings of B = 5x

As per the question, 5x + 25x / 8 = 65x / 8

65x / 8 = 1950

X = 240

The difference in their income = 9 (240) - 5 (240)

= 4 (240)

= Rs 960

Q 11. A person travels half of the distance at speed of 'x' km/hr and the remaining half of the distance at '4x' km/hr. Find the value of 'x' if the average speed is 36.8 km/hr

1. 21 km/hr
2. 20 km/hr
3. 23 km/hr
4. 24 km/hr
5. 25 km/hr

Answer: 3

Solution 11:

Let the distance be 'D'

Half of the distance covered at speed of 'x' km/hr

T_1 = D/2 / Speed = D/2 / x = D / 2x

The Other half of the distance covered at speed of '4x' km/hr

T_2 = D/2 / Speed = D/2 / 4x = D / 8x

Average Speed = Total Distance travelled / Total time taken

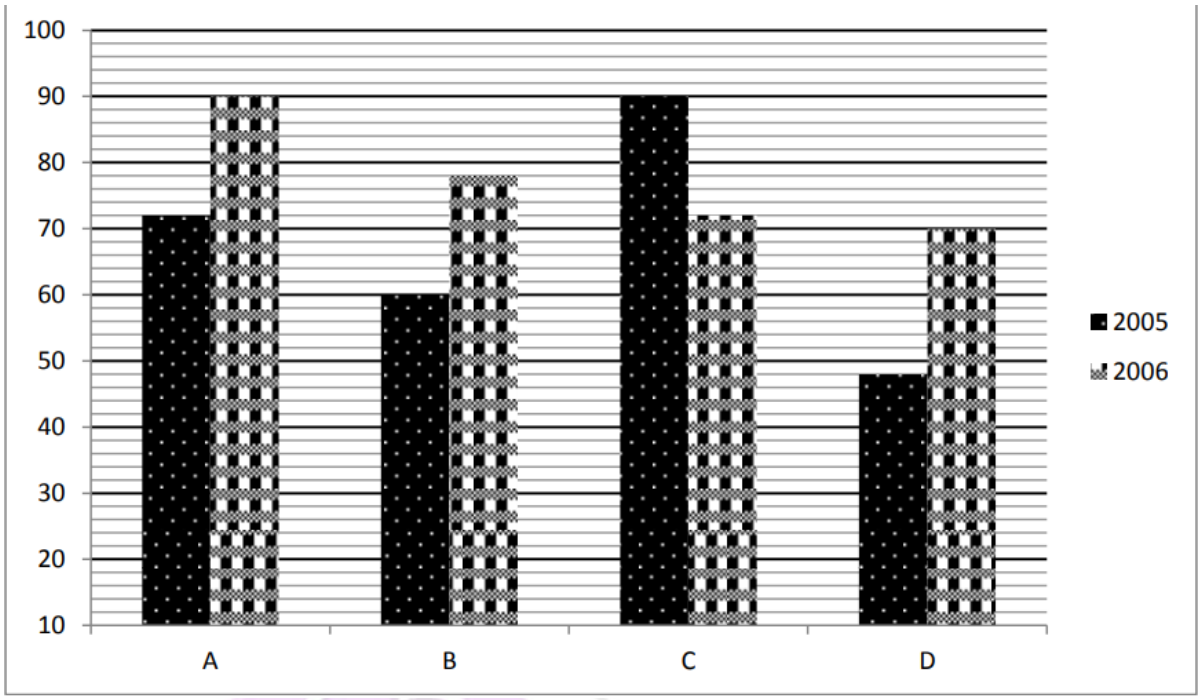
36.8 = D / T_1 + T_2

36.8 = D / (D/2x + D/8x)

36.8 = (8x * D) / 5D

X = 23 km/hr

Directions (12 - 16): Study the bar chart given below and answer the following questions. The bar chart shows the number of books read by 4 different persons (A, B, C & D) in 2005 and 2006.



Q 12. Find the average number of books read by A, C and D in 2005.

1. 64
2. 70
3. 75
4. 60
5. 56

Answer: 2

Solution 12:

Number of books read by A in 2005 = 72

Number of books read by C in 2005 = 90

Number of books read by D in 2005 = 48

Total number of books read = (72 + 90 + 48) = 210

The average number of books read by A, C and D in 2005 = 210 / 3 = 70

Q 13. Find the ratio of books read by B and C together in 2005 to books read by A and D together in 2006.

1. 15:16
2. 5:6
3. 1:5
4. 2:3
5. 4:7

Answer: 1

Solution 13:

Number of books read by B in 2005 = 60

Number of books read by C in 2005 = 90

Total number of books read by B and C = 60 + 90 = 150

Number of books read by A in 2006 = 90

Number of books read by D in 2006 = 70

Total number of books read by A and D = 90 + 70 = 160

The Ratio of books read by B and C in 2005 to the ratio of books read by A and D in 2006

= 150 : 160

= 15: 16

Q 14. Books read by A and D together in 2005 are what per cent more than books read by C in 2006?

1. $66\ ^{2}/_{3}$ %
2. $54\ ^{1}/_{3}$ %
3. $25\ ^{2}/_{3}$ %
4. $33\ ^{1}/_{3}$ %
5. $46\ ^{2}/_{3}$ %

Answer: 1

Solution 14:

Books read by A and D together in 2005 = 72 + 48 = 120

Books read by C in 2006 = 72

Therefore the answer is

= (120 - 72 / 72) * 100

= 66 $^{2}/_{3}$ %

Q 15. Books read by A and C together in 2005 are how much more or less than books read by B and D together in 2006?

1. 14
2. 24
3. 18
4. 28
5. 22

Answer: 1

Solution 15:

Books read by A and C together in 2005 = 72 + 90 = 162

Books read by B and D together in 2006 = 78 + 70 = 148

Therefore the answer is 14 more.

Q 16. Books read by B and C together in 2006 are what percent of books read by B in 2005?

1. 200 %
2. 120 %
3. 160 %
4. 100 %
5. 250 %

Answer: 5

Solution 16:

Required % = [(78 + 72) / 60] * 100

= 250 %

Q 17. (17.28 ÷ ?) / (3.6 × 0.2) = 200

1. 120
2. 0.12
3. 12
4. 1.20
5. None of these

Answer: 2

Solution 17:

17.28 ÷ ? / 0.72 = 200

X = 0.12

Q 18. 486 ÷? × 7392 ÷ 66 = 1008

1. 55
2. 51
3. 54
4. 53
5. 52

Answer: 3

Solution 18:

7392 ÷ 66 = 112

1008 / 112 = 9

X = 54

Q 19. $14^{2}/_{7}$ % of 4200 ÷ √576 = $(x)^{½}$

1. 225
2. 125
3. 5
4. 625
5. 25

Answer: 4

Solution 19:

(100 / 700) × 4200 / 24 = $(x)^{½}$

X = 625

Q 20. (2/7) × (⅚) × (⅜) × ? = 90

1. 1208
2. 1348
3. 1108
4. 1128
5. 1008

Answer: 5

Solution 20:

X = 30240 / 30

X = 1008

Q 21. (0.05 × 6.25) ÷ 2.5 = ?

1. 1.25
2. 0.125
3. 0.115
4. 12.55
5. None of the above

Answer: 2

Solution 21:

0.05 × 6.25 = 0.3125

0.3125 / 2.5 = 0.125

Q 22. 1496 ÷ 17 =? % of 220

1. 40
2. 25
3. 50
4. 75
5. None of these

Answer: 1

Solution 22:

1496 ÷ 17 = 88

? % of 220

= ? × 2.2

88 = ? × 2.2

X = 40

Q 23. (36 % of 180) ÷ 0.4 = ?

1. 164
2. 160
3. 180
4. 162
5. 166

Answer: 4

Solution 23:

36 % of 180 = 64.8

64.8 ÷ 0.4 = 162

Q 24. $64^{2} \div 24^{2} \div 6^{-2}$ = ?

1. 32
2. 64
3. 256
4. 128
5. 96

Answer: 3

Solution 24:

The above expression can be rewritten as $[(64 / 24) \times 6]^2$

$= 16^2$

$= 256$

Q 25. 112.25 + 114 + 89.15 = ?

1. 325.4
2. 310.4
3. 305.4
4. 315.5
5. 320.4

Answer: 4

Solution 25:

112.25 + 114 + 89.15 = 315.4

Q 26. $(630 \times 0.5) \div 15 = 7 \times ?$

1. 4.5
2. 9
3. 3
4. 1.5
5. 6

Answer: 3

Solution 26:

$(630 \times 0.5) \div 15 = 315 \div 15$

$= 21$

$21 = 7 \times ?$

$? = 3$

Q 27. $(5\frac{2}{6} \times 3\frac{5}{8}) \times 12 = ?$

1. 348
2. 232
3. 132
4. 116
5. 216

Answer: 2

Solution 27:

$5\frac{2}{6} = 32 / 6$

$3\frac{5}{8} = 29 / 8$

$32 / 6 \times 29 / 8 \times 12$

$= 232$

Q 28. $11\frac{4}{11}$ of $4\frac{21}{25} \div 5 = ?$

1. 55
2. 5
3. 11
4. 25
5. 15

Answer: 3

Solution 28:

$11\frac{4}{11} = 125 / 11$

$4\frac{21}{25} = 121 / 25$

$11\frac{4}{11}$ of $4\frac{21}{25} = (125 / 11) \times (121 / 25)$

$= 55$

$55 \div 5 = 11$

Q 29. Ali travels at a speed of a kmph to cover a distance of 36 Kmph in 54 minutes. Shyam takes 30 minutes to cover the same distance. Find the difference between their speed.

1. 40 Kmph
2. 32 Kmph
3. 36 kmph
4. 24 kmph
5. None of these.

Answer: 2

Solution 29:

Let the speed be ‘a’

Distance = Speed × time

36 Km = a Kmph × 54 min.

We need to convert minutes to hours.

Divide 54 / 60 = 9 / 10

36 = a × (9 / 10)

Hence speed of Ali, a = 40 kmph

Speed of Shyam

36 = a × (30 / 60)

Hence speed of Shyam = 72 Kmph

Difference between their speeds = 72 - 40 = 32 Kmph

Q 30. 11, x, 16, 21, 29, 41

1. 12
2. 13
3. 12.5
4. 11.5
5. None of the above

Answer: 2

Solution 30:

41 - 29 = 12

29 - 21 = 8

21 - 16 = 5

We can see that 12 - 8 = 4,

8 - 5 = 3

Hence the change in difference is +1.

When X = 13, 16 - 13 = 3 and 5 - 3 = 2 which is an increment of 1.

13 - 11 = + 2 and 3 - 2 = 1, which is an increase of +1.

Q 31. 4, 3, 4, 9, 32, ?

1. 155
2. 170
3. 90
4. 72
5. 102

Answer: 1

Solution 31:

4 × 1 = 4 - 1 = 3

3 × 2 = 6 - 2 = 4

4 × 3 = 12 - 3 = 9

9 × 4 = 36 - 4 = 32

32 × 5 = 160 - 5 = 155

Q 32. X, 100, 150, 375, 1312.5

1. 200
2. 400
3. 150
4. 350

5. None of the above

Answer: 1

Solution 32:

200 × 0.5 = 100

100 × 1.5 = 150

150 × 2.5 = 375

375 × 3.5 = 1312.5

Q 33. 0, 6, 24, 60, x, 210

1. 135
2. 90
3. 115
4. 120
5. 150

Answer: 4

Solution 33:

$1^3 - 1 = 0$

$2^3 - 2 = 8 - 2 = 6$

$3^3 - 3 = 27 - 3 = 24$

$4^3 - 4 = 64 - 4 = 60$

$5^3 - 5 = 125 - 5 = 120$

$6^3 - 6 = 216 - 6 = 210$

Directions (34 - 35): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give an answer.

1. If x > y
2. If x ≥ y
3. If x < y
4. If x ≤ y
5. If x = y or no relation can be established between x and y.

Q 34.

I. $7x^2 - 19x + 10 = 0$

II. $8y^2 + 2y - 3 = 0$

Answer: 1

Solution 34:

$7x^2 - 19x + 10 = 0$

$7x^2 - 14x - 5x + 10 = 0$

$7x (x - 2) - 5 (x - 2) = 0$

$(x - 2) (7x - 5) = 0$

$X = 2, 5/7$

$8y^2 + 2y - 3 = 0$

$8y^2 + 6y - 4y - 3 = 0$

$2y (4y + 3) - 1 (4y + 3) = 0$

$(2y - 1) (4y + 3) = 0$

Hence, y = ½, -¾

So, x = 2, 5/7 and y = -¾, ½

When x = 2, if y = -¾ implies x > y

If y = ½ implies x > y

When x = 5/7, if y = -¾ implies x > y

If y = ½ implies x > y

Hence we can conclude that x > y

Q 35.

(i) $3x^2 - 7x + 4 = 0$

(ii) $2y^2 - 9y + 10 = 0$

Answer: 3

Solution 35:

$3x^2 - 7x + 4 = 0$

$3x^2 - 3x - 4x + 4 = 0$

$3x(x - 1) - 4(x - 1) = 0$

$(x - 1)(3x - 4) = 0$

So, $x = 1, x = 4/3$

$2y^2 - 9y + 10 = 0$

$2y^2 - 4y - 5y + 10 = 0$

$2y(y - 2) - 5(y - 2) = 0$

$(y - 2)(2y - 5) = 0$
So, $y = 2, 5/2$

Hence, $x = 1, 4/3$ and $y = 2, 5/2$

When $x = 1$, if $y = 2$ it implies $x < y$

If $y = 4/3$ it implies $x < y$

When $x = 4/3$, if $y = 2$ it implies $x < y$

If $y = 5/2$ it implies $x < y$

Hence we can conclude that $x < y$