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SSC CHSL Exam Quantitative Aptitude Question & Answers PDF

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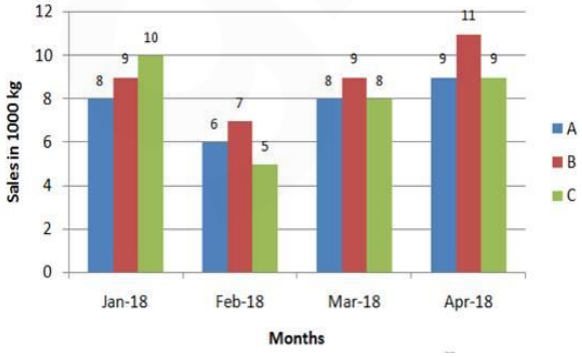
1. The simplified value of $2\frac{1}{3}$ of $\left(\frac{3}{5}\div\frac{2}{9}\right)-\left(4\frac{2}{5}+\frac{19}{20}\div\frac{1}{2}\right)$.

A. 0
B. $\frac{1}{4}$
C. $\frac{1}{2}$
D. 1

2. The given Bar Graph presents the sale (in 1000 kg) of a particular brand of tea by three outlets, A, B and C during the months Jan, Feb, Mar and Apr, 2018.

What is the average sale per month by A during Jan-Mar, 2018?
A. 7333.33 kg
B. 7505 kg
C. 7334.67 kg
D. 5500 kg

3. The given Bar Graph presents the sale (in 1000 kg) of a particular brand of tea by three outlets, A, B and C during the months Jan, Feb, Mar and Apr, 2018.

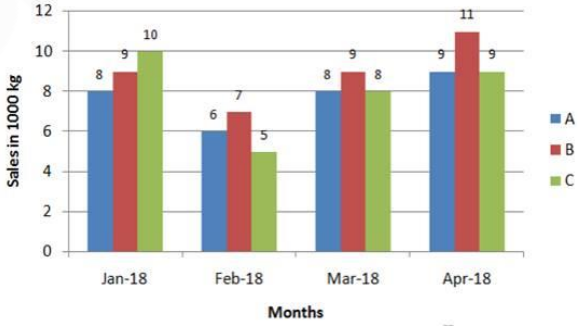


By how much quantity is the average sale per month from B more or less than that from C?
A. More by 500 kg
B. Less by 1000 kg
C. Less by 5OO kg
D. More by 1000 kg

4. In a triangle ABC, PQ is a straight line parallel to AC, such that Area ABC : Area PBQ = 3 : 1 Then CB : CQ is equal to:

A. $\frac{\sqrt{3}}{2}(\sqrt{3}+1)$
B. $\frac{\sqrt{3}}{2}(\sqrt{3}-1)$
C. $\frac{\sqrt{3}}{2}$
D. $\frac{\sqrt{3}-2}{2}$

5. The given Bar Graph presents the sale (in 1000 kg) of a particular brand of tea by three outlets, A, B and C during the months Jan, Feb, Mar and Apr, 2018.



Arrange the ratio of sales from B to that from A and C, taken together, month wise in ascending order.
A. Jan, Mar, Feb. Apr
B. Jan. Mar, Apr, Feb
C. Jan, Feb, Mar, Apr
D. Jan, Apr, Mar, Feb

6. A earns Rs. 100 per hour and works for 8 hours per day. B earns Rs.120 per hour and works for 6 hours per day. The ratio of per day wages of B to that of A is:

A. 10:9
B. 4:5
C. 5 : 4
D. 9 : 10

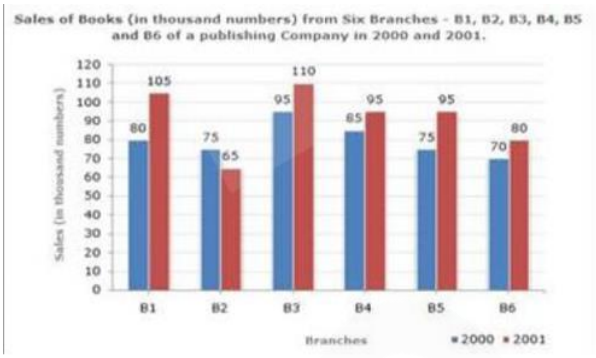
7. The distance between the centres of two circles of radius 6 cm each is 13 cm. The length (in cm) of a transverse common tangent is:
A. 10
B. 12
C. 5
D. 6

8. The simplified value of $\frac{46+\frac{3}{4}of32-6}{11+\frac{3}{4}of(34-6)}$ is:
A. 1
B. $\frac{1}{4}$
C. 2
D. $\frac{1}{2}$

9. If cosx = $\frac{-\sqrt{3}}{2}$ and $\pi < x < \frac{3\pi}{2}$ then the value of $4\cot^2x - 3\operatorname{cosec}^2x$ is:
A. 8
B. 0
C. 2
D. 1

10. If $7(\operatorname{cosec}^2 57° - \tan^2 33°) + 2\sin 90° - 4\tan^2 52° y \tan^2 38° = \frac{y}{2}$, then the value of y is:
A. 2
B. 4
C. 1
D. 3

Direction (11 – 13) : The given Bar Graph presents the sales of the number of books (in thousands) by six branches of a publishing company during two consecutive years 2000 and 2001.



11. The ratio of total sales by all branches for the year 2001 to total sales by all branches for the year 2000 is:
A. 48 : 55
B. 25 : 23
C. 55 : 48
D. 23 : 25

12. The average of total sales (in thousands and Correct to two decimal places) by all branches for both the years is:
A. 171.37
B. 2 171.57
C. 171.27
D. 171.67

13. The ratio of total sales by branches BI, B3 and B5 for both the years to total sales by branches B2, B4, B6 for both the years is:
A. 21 : 23
B. 56 : 47
C. 23 : 21
D. 47 : 56

14. ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and angle ADC = 146°. ∠BAC is equal to:
A. 56
B. 24°
C. 72°
D. 18°

15. A dealer buys an article marked at 5000 with two successive discounts of 20% and 5%. He spends Rs.200 on repairs and sells

it for Rs. 5000, what is his profit/loss percent?
A. 25% profit
B. 25% loss
C. 20% profit
D. 20% loss

16. If the length of a rectangle is decreased by 11% and the breadth is increased by 11%, its area will undergo:
A. 13.13% increase
B. 1.21% increase
C. 1.21% decrease
D. 13.13% decrease

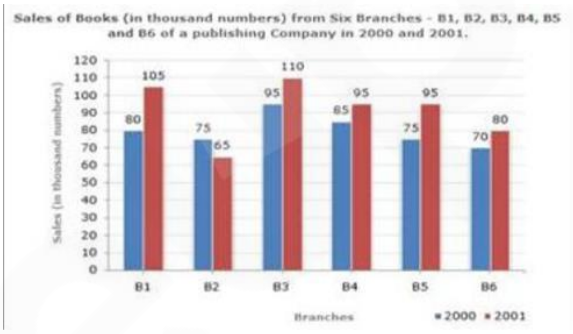
17. If $x - \frac{1}{x} = 7$ then $x^3 - \frac{1}{x^3}$ equal to
A. 480
B. 364
C. 376
D. 500

18. In ΔABC, ∠A = 72°. Its sides AB and AC are produced to the points D and E respectively. If the bisectors of the ∠CBD and ∠BCE meet at point 0, then ∠BOC is equal to:
A. 16°
B. 54°
C. 32°
D. 106°

19. Let ΔABC ~ ΔQPR and $\frac{ar(\Delta ABC)}{ar(\Delta PQR)} = \frac{4}{25}$. If AB = 12 cm, BC = 8 cm and AC = 10 cm, then QP is equal to:
A. 20
B. 18
C. 15
D. 30

20. If secθ= 8x and tanθ = $\frac{8}{x}$ (X ≠0) then the value of 16 $\left(x^2 - \frac{1}{x^2}\right)$ is:
A. $\frac{1}{4}$
B. $\frac{1}{16}$
C. $\frac{1}{3}$
D. $\frac{1}{2}$

21. The given Bar Graph presents the sales of the number of books (in thousands) by six branches of a publishing company during two consecutive years 2000 and 2001



The total sales (in thousands) by all branches for both the years is:
A. 470
B. 560
C. 1100
D. 1030

22. The compound interest on a certain sum of money at 21% for 2 years is Rs.11,602.5. Its simple interest (in Rs.) at the same rate and for the same period is:
A. 10,750
B. 16,000
C. 12,500
D. 10,500

23. The ratio between the speeds of two trains is 2 : 5. If the first train runs 250 km in 5 h, then the sum of the speeds (in km/h) of both the trains is:
A. 175
B. 150
C. 180
D. 165

24. If $x^4 + x^{-4} = 1154$, $(x > 0)$, then the value of $2(x - 3)^2$ is:

A. 16
B. 12
C. 20
D. 15

25. If the seven digit number 64x29y6 (x > y) is divisible by 72, what is the value of (2x — y)?

A. 3
B. 13
C. 7
D. 9

###ANSWERS###

1. Ans. A.

$2\frac{1}{3}$ of $\left(\frac{3}{5}\div\frac{2}{9}\right)-\left(4\frac{2}{5}+\frac{19}{20}\div\frac{1}{2}\right)$

$= 2\frac{1}{3}\text{of}\left(\frac{3}{5}\div\frac{2}{9}\right)-\left(\frac{22}{5}+\frac{19}{20}\div\frac{1}{2}\right)$

$= 2\frac{1}{3}\text{of}\left(\frac{3}{5}\times\frac{9}{2}\right)-\left(\frac{22}{5}+\frac{19}{20}\times\frac{2}{1}\right)$

$= 2\frac{1}{3}\text{of}\left(\frac{27}{10}\right)-\left(\frac{22}{5}+\frac{19}{10}\right)$

$= 2\frac{1}{3}\text{of}\left(\frac{27}{10}\right)-\left(\frac{63}{10}\right)$

$= \frac{7}{3}\times\frac{27}{10}-\frac{63}{10}$

$= \frac{63}{10}-\frac{63}{10}=0$.

2. Ans. A.

Total sale = 8 + 6 + 8 = 22 thousand

Average sale = $\frac{22}{3}=7.33=7333.33$ kg.

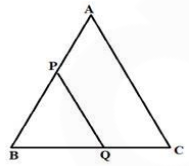
3. Ans. D.

B average sale = $\frac{9+7+9+11}{4}=\frac{36}{4}=9$

C average sale = $\frac{10+5+8+9}{4}=\frac{32}{4}=8$

B is 1000kg more than C.

4. Ans. A.



PQ||AC

∠P = ∠A (corresponding Angle

∠Q = ∠C (corresponding Angle

∠B = ∠B (common angle

Δ BPQ ~ Δ BAC

$\frac{Area\,\Delta BPQ}{Area\,\Delta BAC}=\frac{1}{3}=\frac{BQ^2}{BC^2}$

$\frac{BC}{BQ}=\frac{\sqrt{3}}{1}$

$\frac{BC}{BC-BQ}=\frac{\sqrt{3}}{\sqrt{3}-1}\times\frac{\sqrt{3}+1}{\sqrt{3}+1}$

$\frac{BC}{CQ}=\frac{\sqrt{3}}{2}\left(\sqrt{3}+1\right)$

5. Ans. B.

Required ratio in-

Jan = $\frac{B}{A+C}=\frac{9}{18}$

Feb = $\frac{7}{11}$

Mar = $\frac{9}{16}$

Arp = $\frac{11}{18}$

When we put these in ascending order then Jan, Mar, Apr, Feb.

6. Ans. D.

A earns Rs. 100 per hour and works for 8 hours per day.

Total earnings for the day = 8 × 100 = Rs 800

B earns Rs.120 per hour and works for 6 hours per day

Earnings for the day = 6 × 120 = Rs 720

Ratio= $\frac{Wage\ of\ B}{Wage\ of\ A}=\frac{720}{800}=\frac{9}{10}$

Required Ratio = 9 : 10

7. Ans. C.

Length of transverse tangent:

$\sqrt{(distance\ between\ the\ centres)^2-(r_1+r_2)^2}$

$=\sqrt{(13)^2-(6+6)^2}$

$=\sqrt{(13)^2-(12)^2}$

$=5\,cm$

8. Ans. C.

$$\frac{46+\frac{3}{4}of32-6}{11+\frac{3}{4}of(34-6)}$$

$$=\frac{46+24-6}{11+21}$$

$$=\frac{64}{32}=2$$

9. Ans. B.
Here the angle lies In III quadrant :
cos(180° + 30°) = - cos 30° = $\frac{-\sqrt{3}}{2}$
cot (180° + 30°) = cot 30° = √ 3
cosec(180° + 30°) = - cosec 30° = -2
$4\cot^2x - 3\operatorname{cosec}^2x =$

$$4(\sqrt{3})^2-3(-2)^2=12-12=0$$

10. Ans. A.
7 ($\operatorname{cosec}^2 57°$ — $\tan^2 33°$) + 2 sin90° — $\frac{y}{2}$
$4\tan^2 52°y \tan^2 38° =$

$$\Rightarrow 7(cosec^2 57°-cot^2 57°)+2(1)-4$$

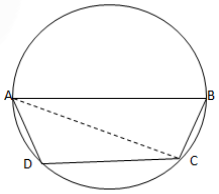
$$\Rightarrow 7(1)+2(1)-4\tan^2 52°y\frac{1}{\tan^2 52°}=$$

$$\Rightarrow 7+2-4y=\frac{y}{2}$$

$$\Rightarrow 9=\frac{9}{2}y$$

$$y=2$$

11. Ans. C.
Total sales by all branches for the year 2000 =
80 + 75 + 95 + 85 + 75 + 70
= 480
Total sales by all branches for the year 2001
= 105 + 65 + 110 + 95 + 95 + 80
= 550
Ratio of $\frac{2001}{2000}=\frac{550}{480}=\frac{55}{48}$
Required Ratio = 55 : 48
12. Ans. D.
Total sales by all branches for the year 2000 =
80 + 75 + 95 + 85 + 75 + 70
= 480
total sales by all branches for the year 2001
= 105 + 65 + 110 + 95 + 95 + 80
= 550
Total sale of both the years = 480 + 550 = 1030
Average of total sale = $\frac{1030}{6}=171.67$
13. Ans. B.
Total sales by branches BI, B3 and B5 for both the years :
B1 = 80 + 105 = 185
B3 = 95 + 110 = 205
B5 = 75 + 95 = 170
Total = 560
Total sales by branches B2, B4 and B6 for both the years
B2 = 75 + 65 = 140
B4 = 85 + 95 = 180
B6 = 70 + 80 = 150
Total sales = 470
Required Ratio = $\frac{560}{470}=\frac{56}{47}$
= 56 : 47
14. Ans. A.



Here given that ∠ D = 146°
Since ABCD is a cyclic quadrilateral.
So ∠ D + ∠ B = 180°
146° + ∠ B = 180°
∠ B = 34°
And since AB is a diameter so angle made on the circumference is 90°
Here ∠ BCA = 90°
By angle sum property of triangle :
∠ BCA + ∠ CAB + ∠ ABC = 180°
34° + ∠ BAC + 90° = 180°
∠ BAC = 56°
15. Ans. A.
Marked price of the article = Rs 5000
Discounts given = 20 % and 5 %

Net discount =

$$20+5-\frac{20\times5}{100}$$

$$=24\%$$

Amount after 24% discount : 5000 – $\frac{24}{100}\times5000=Rs\,3800$

Now he spends Rs 200 on repairs .

So new amount becomes = 3800 + 200 = Rs 4000

Selling price of article = Rs 5000

$$\frac{5000-4000}{4000}\times100$$

Profit % = $=25\%$

Hence he earned a profit of 25%

16. Ans. C.

Let the length and breadth of the rectangle be 100 and 100 resp.

Area of rectangle = 100 × 100 = 10000

If the length of rectangle is decreased by 11%

Then :

$$\frac{11}{100}\times100=89$$

Length = 100 -

If the breadth of rectangle is increased by 11%

$$\frac{11}{100}\times100=111$$

breadth = 100 +

New area = 89 × 111 = 9879

Decrease in area = 10000 – 9879 = 121

Percentage decrease in area =

$$\frac{121}{10000}\times100$$

$$=1.21\%$$

17. Ans. B.

Here

$$x-\frac{1}{x}=7$$

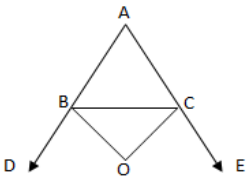
$$\left(x-\frac{1}{x}\right)^3=x^3-\frac{1}{x^3}-3\left(x-\frac{1}{x}\right)$$

$$(7)^3=x^3-\frac{1}{x^3}-3(7)$$

$$343=x^3-\frac{1}{x^3}-21$$

$$364=x^3-\frac{1}{x^3}$$

18. Ans. B.



We know :

∠ BOC = 90° - $\angle\frac{A}{2}$

∠ A = 72°

⇒ ∠ BOC = 90° - $\angle\frac{72^\circ}{2}$

∠ BOC = 90° -

36°

= 54°

19. Ans. D.

Since ΔABC ~ ΔQPR

When two triangles are similar then the ratio of their areas is equal to the ratio of square of corresponding sides .

$$\frac{ar(ABC)}{ar(QPR)}=\frac{4}{25}$$

$$\frac{ar(ABC)}{ar(QPR)}=\frac{(AB)^2}{(QP)^2}$$

$$\frac{4}{25}=\frac{(12)^2}{(QP)^2}$$

$$QP=\frac{12\times5}{2}=30cm$$

20. Ans. A.

$$sec^2\theta-tan^2\theta=1$$

$$(8x)^2-\left(\frac{8}{(x)^2}\right)=1$$

$$64\left(x^2-\frac{1}{x^2}\right)=1$$

$$\left(x^2-\frac{1}{x^2}\right)=\frac{1}{64}$$

$$16\left(x^2-\frac{1}{x^2}\right)=16(\frac{1}{64})=\frac{1}{4}$$

21. Ans. D.

Total sales by all branches for the year 2000 =

80 + 75 + 95 + 85 + 75 + 70

= 480
total sales by all branches for the year 2001 = 105 + 65 + 110 + 95 + 95 + 80
= 550
Total sale for both the branches = 480 + 550 = 1030
22. Ans. D.
Let the Principal amount be Rs x
Then amount = Rs 11602.5 + x

$$A = P\left(1 + \frac{r}{100}\right)^n$$

$$11602.5 + x = x\left(1 + \frac{21}{100}\right)^2$$

$$11602.5 + x = x\left(\frac{121}{100}\right)^2$$

$$11602.5 = (0.4641)x$$

$$x = 25000$$

$$SI = \frac{P \times R \times T}{100}$$

$$= \frac{25000 \times 21 \times 2}{100}$$

$$= 10500\,Rs$$

Simple interest = Rs 10500
23. Ans. A.
The ratio between the speeds of two trains is 2 : 5.
Let the speeds of the trains be 2x and 5x respectively.
Here, the speed of the first train = $\frac{250}{5} = 50km/hr$
Then, 2x = 50
⇒ x = 25
The sum of the speeds of the train = 2x + 5x
= 7x
= 7 × 25
= 175 km/hr
24. Ans. A.
Here $x^4 + x^{-4} = 1154$

$$x^4 + \frac{1}{x^4} = 1154$$

$$x^4 + \frac{1}{x^4} + 2 = 1154 + 2$$

$$\left(x^2 + \frac{1}{x^2}\right)^2 = (34)^2$$

$$\left(x^2 + \frac{1}{x^2}\right) = 34$$

hence

$$\left(x + \frac{1}{x}\right) = 6$$

$$x^2 + 1 - 6x = 0$$

$$x^2 + 1 - 6x + 9 - 9 = 0$$

$$(x-3)^2 - 8 = 0$$

$$(x-3)^2 = 8$$

$$2(x-3)^2 = 16$$

25. Ans. D.
Given the seven digits number 64x29y6 (x > y) is divisible by 72
Since it is divisible by 72(= 8 × 9)
It must be divisible by 8 and 9 :
According to **divisibility of 8 : last three digits of number are divisible by 8**
Hence 9y6 must be divisible by 8
⇒ y = 3 as 936 is divisible by 8
Again **divisibility of 9 : sum of the digits of the number is divisible by 9**
Then 6 + 4 + x + 2 + 9 + 3 + 6 = 30 + x must be divisible by 9
Then x = 6
Hence (2x – y) = 2(6) – (3) = 9

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