Quant Quiz For SSC CGL [Beginner LeveL] : 17th November (Solutions)

S1. Ans.(b)

Sol. Let A has x guavas and B has y guavas, the

$x - \frac{1}{4}x = \left(y + \frac{1}{4}x\right) + 2$ ...(i)

And $y - \frac{7}{10}y = x + \frac{1}{10}y - 4$ ...(ii)

Solving (i) and (ii), we get

x = 44, y = 20

Total guavas = 44 + 20 = 64

S2. Ans.(d)

Sol. Income → 4 4.4 4.8 5.2 18.4 lakh

Saving → 2 1.76 1.44 1.04 6.24 lakh

Exp. → 2 2.64 3.36 4.16 12.16 lakh

So, $\frac{6.24}{12.16} \times 100$

$= 51\frac{6}{19}\%$

S3. Ans.(d)

Sol. A + B + C + D = 56

B + C + D = 4.6A

⇒ A + B + C + D = 5.6 A (adding A in both side)

56 lakh = 5.6 A

⇒ A = 10 lakh

Similarly, $A + C + D = \frac{11}{3}B$

$\Rightarrow A + B + C + D = \frac{14}{3}B$

⇒ B = 12 lakh

Similarly, 4(A + B + D) = C

⇒ A + B + D = 2.5C

⇒ A + B + C + D = 3.5C

⇒ C = 16 lakh

Therefore D = (A + B + C + D) – (A + B + C)

= 18 lakh

S4. Ans.(b)

Sol. Let Ram replaces x litres of 12% sol. with 39% solution.

Now, quality of 12% sol. in 27 litre $= \frac{27 \times 12}{100}$

∴ After replacing we have volume of 12% sol.

$= \frac{27 \times 12}{100} - \frac{12x}{100} + \frac{39x}{100} = \frac{324 + 27x}{100}$

This will be equal to 27 litre of 21% sol.

$\therefore \frac{324 + 27x}{100} = \frac{21 \times 27}{100}$

$\therefore x = \frac{567-324}{27} = \frac{243}{27} = 9$

S5. Ans.(a)

Sol. Year Rate of Commission Commission in values

1 20% 0.2 × 20,000 = 4000

25% (bonus) 0.25 × 4000 = 1000

2 16% 0.16 × 20,000 = 3200

3 12% 0.12 × 20,000 = 2400

4 10% 0.1 × 20,000 = 2000

5-10 4% 6 × 0.04 × 20,000 = 4800

Total commission = (4000 + 3200 + 2400 + 2000 + 4800) + (1000) = 17,400

S6. Ans.(a)

Sol. House hold expenditure = 50%

Remaining = 50%

On Remaining amount he spends:-

Travelling = 25%

Entertainment = 30%

Shopping = 15%

Total = 70% ⇒ Remaining = (100 – 70) % of 50%

Rest amount ⇒ 900 = 30% of 50%

⇒ 15% = 900

100% = 6,000

S7. Ans.(c)

Sol. Total marks of test = 80

Ankita scored = 65% of 40 Question (1 mark)

= 26

But she needs to score = 80% of entire 'test'

= 80% of 80

= 64 marks

So, she needs = (64 – 26) marks

= 38

Percentage ⇒ x% of 40 = 38

⇒ x = 95

S8. Ans.(c)

Sol. No. of students = 60

No. of teachers = 5

No. of sweets each students got = 20% of (60) = 12

Total sweets distributed among students = 12 × 60 =720

No. of sweets each teacher got = 30% of (60) = 18

Total sweets = 18 × 5 = 90

distributed among teachers

Total sweets = (720 + 90) = 810

S9. Ans.(d)

Sol. Let total votes = 100%

Invalid = 15%

Valid votes = 85%

1st candidate = 55% of 85%

So, 2nd candidate = 45% of 85%

According to the question,

100% → 15200

85% → 12920

Other candidate got = 45% of 12920 = 5814 vote

S10. Ans.(b)

Sol. Total correct questions for getting 60% grade

$= \frac{60}{100} \times 250 = 150$

40% of 125 = 50 questions

∴ x% of 125 = 150 – 50

= 100 questions

$\Rightarrow x = \frac{100}{125} \times 100 = 80$

Required percentage = 80%

S11. Ans.(c)

Sol. (19 – 13)r → 420 crore

6r → 420 crore

1r → 70 crore

17r → 17 × 70 ⇒ 1190 Crore

S12. Ans.(c)

Sol. Ratio → 3x, 2x, x.

ATQ 15x + 20x + 20x = 165

55x = 165

x = 3

Value of currency Notes Rs. 20 = 3 × 20 = 60Rs

S13. Ans.(a)

Sol.

a : b = 1 : 4

b : c = 1 : 8

a : b : c = 1 : 4: 32

1r → 2

32r → 64

S14. Ans.(a)

Sol. 3 years Ago → 5 : 9 → difference 4 → × 2

After 5 years → 3 : 5 → difference 2 → × 4

New Ratio →

3 year Ago → 10 : 18

After 5 years → 12 : 20

2r → 8 years

1r → 4 years

Age of Maya = 10 × 4 + 3 = 43

S15. Ans.(a)

Sol. Ratio → $\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$

⇒ 6 : 8 : 9

(9 – 6) r → 45

1r → 15

Middle number ⇒ 15 × 8 ⇒ 120

S16. Ans.(b)

Sol. Ratio → 3 : 5 : 7

New Ratio → $\frac{3 \times 150}{100} : \frac{5 \times 160}{100} : \frac{7 \times 150}{100}$

⇒ 45 : 80 : 105

⇒ 9 : 16 : 21

S17. Ans.(c)

Sol. Fresh watermelon →

Water Pulp

90 : 10 ⇒ 9 : 1

After 10 kg water Evaporates ⇒ 80 : 20 ⇒ 4 : 1

(9 - 4)r → 10kg

5r → 10kg

1r → 2kg

10r → 20 kg

Weight of original watermelon = 20 kg

S18. Ans.(a)
Sol. $x \to 3k$, $y \to 2k$
$2x^2 + 3y^2 = 2 \times 9k^2 + 3 \times 4k^2 = 18k^2 + 12k^2 = 30k^2$
$3x^2 - 2y^2 \Rightarrow 3 \times 9k^2 - 2 \times 4k^2 = 19k^2$
Ratio $= 30k^2 : 19k^2 = 30 : 19$

S19. Ans.(a)
Sol. Third Proportion $= \frac{6 \times 6}{3} = 12$

S20. Ans.(a)
Sol. a : b : : c : d
$a^2 + b^2 + c^2 + d^2 = 50$
$a + b = 4$
$b : c = 3 : 2$
$b \to 3$
$c \to 2$
$a \to 4 - 3 = 1$
$1 + 9 + 4 + d^2 = 50$
$d = 6$
Average $= \frac{3 + 2 + 1 + 6}{4} = 3$

S21. Ans.(a)
Sol.
$$\Rightarrow 5 - \frac{1}{2 + \frac{1}{4 - \frac{1}{16/5}}}$$
$$\Rightarrow 5 - \frac{1}{2 + \frac{1}{4 - \frac{5}{16}}}$$
$$\Rightarrow 5 - \frac{1}{2 + \frac{16}{59}}$$
$$\Rightarrow 5 - \frac{59}{134}$$
$$\Rightarrow \frac{621}{134}$$

S22. Ans.(a)
Sol.
$$\frac{5^2+6^2+7^2+8^2+9^2+10^2}{\sqrt{16+3+2\times4\sqrt{3}} - \sqrt{9+3+2\times3\sqrt{3}}}$$
Sum of consecutive Square $= \frac{x(x+1)(2x+1)}{6}$
$1^2 + \_\_ + 10^2 = \frac{10 \times 11 \times 21}{6} = 385$
$1^2 + \_\_ + 4^2 = \frac{4 \times 5 \times 9}{6} = 30$
$5^2 + \_\_ + 10^2 = 385 - 30 = 355$
$$\Rightarrow \frac{355}{-\sqrt{(3+\sqrt{3})^2} + \sqrt{(4+\sqrt{3})^2}} = \frac{355}{4-3} = 355$$

S23. Ans.(a)

Sol.

$(7)^{513} = [7^4]^{128} \times 7^1 = [1]^{128} \times 7^1 = 7$

$(999)^{647} = (9^2)^{323} \times 9^1 = (1)^{323} \times 9^1 = 9$

$(414)^{624} = (4^4)^{156} \times (6)^{156} = 6$

$(342)^{812} = (2^4)^{203} = (6)^{203} = 6$

Unit digit = $7 \times 9 \times 6 \times 6 = 8$

S24. Ans.(c)

Sol.

First 181 whole number = 0 to 180

Sum of First x natural number = $n(n + 1)/2$

$= \frac{180 \times 181}{2} = 5$ unit digit

S25. Ans.(c)

Sol. Unit digit = 5

When 5 is multiplied with any odd number the unit digit will be 5