

Quiz Date: 10th August 2020

Q1. Nandita scored 80% marks in five subjects together Hindi, Science, Mathematics, English and Sanskrit, where the maximum marks of each subject were 105. How many marks did Nandita scored in Science, if she scored 89 marks in hindi 92 marks in Sanskrit, 98 marks in Mathematics and 81 marks in English?

- (a) 60
- (b) 75
- (c) 65
- (d) 70
- (e) 80

Q2. A number is divided into two parts in such a way that 80% of 1st part is 3 more than 60% of 2nd part and 80% of 2nd part is 6 more than 90% of the 1st part. Then the number is:

- (a) 125
- (b) 130
- (c) 135
- (d) 145
- (e) 155

Q3. The expenses on rice, fish and oil of a family are in the ratio 12 : 17 : 3 respectively. The price of these articles is increased by 20%, 30% and 50% respectively. The total expenses increased by:

- (a) $14\frac{1}{8}\%$
- (b) $7\frac{1}{8}\%$
- (c) $56\frac{1}{8}\%$
- (d) $28\frac{1}{8}\%$
- (e) None of these

Q4. The cost of a piece of diamond varies with the square of its weight. A diamond of Rs. 5184 value is cut into 3 pieces whose weights are in the ratio 1 : 2 : 3. Find the loss involved in the cutting.

- (a) Rs. 3068
- (b) Rs. 3088
- (c) Rs. 3175
- (d) Rs. 3168
- (e) None of these

Q5. The total strength of capital Education is 5000. The number of males and females increases by 8% and 16% respectively and strength becomes 5600. What was the number of males at Capital Education?

- (a) 2500

- (b) 2000
- (c) 3000
- (d) 4000
- (e) 4500

Q6. The rates of simple interest in two banks A and B are in the ratio 5 : 4. A person wants to deposit his total savings in these two banks in such a way that he receives equal half yearly interest from both. He should deposit the savings in banks A and B in the ratio:

- (a) 2 : 5
- (b) 4 : 5
- (c) 5 : 2
- (d) 5 : 4
- (e) 3 : 5

Q7. One year ago the ratio between Laxman's and Gopal's salary was 3 : 4. The ratios of their individual salaries between last year's and this year's salaries are 4 : 5 and 2 : 3 respectively. At present the total of their salary is Rs. 4160. The salary of Laxman, now is:

- (a) Rs. 1040
- (b) Rs. 1600
- (c) Rs. 2560
- (d) Rs. 3120
- (e) Rs. 4210

Q8. In a village, each of the 60% of families has a cow; each of the 30% of families has a buffalo and each of the 15% of families has both a cow and a buffalo. In all there are 96 families in the village. How many families do not have a cow or a buffalo?

- (a) 20
- (b) 24
- (c) 26
- (d) 17
- (e) 28

Q9. A businessman imported Laptop, worth Rs. 210000, Mobile phones worth Rs. 100000 and Television sets worth Rs. 150000. He had to pay 10% duty on Laptops, 8% on phones and 5% on Television sets as special case. How much total duty (in rupees) he had to pay on all items as per above details?

- (a) 36500
- (b) 37000
- (c) 37250
- (d) 37500
- (e) 42500

Q10. 60% students of a college study math, 55% students study commerce and 15% students study both. If ratio of boys to girl who study math only is 3 : 2 and ratio of boys to girls who study commerce only is 2 : 3, then total number of boys who study only math and only

commerce together is what percent of total number of girls who study only math and only commerce together? (in approximate)

- (a) 102%
- (b) 109%
- (c) 117%
- (d) 123%
- (e) 112%

Q11. Mr. Raghav owned a flat for Rs. 13.2 lacs. He spends 20% of his monthly salary on its paintings. 25% on lighting and furniture, 15% on foods and other supplements. If Mr. Raghav's annual salary is 10.8 lacs then find the total spending made by Mr. Raghav.

- (a) 137.4 lacs
- (b) 1.374 lacs
- (c) 13.74 lacs
- (d) 11.74 lacs
- (e) 17.34 lacs

Q12. The entrance ticket of an exhibition was Rs. 5. Later it was decreased by 20% and thus the sale amount is increased by 44%. What was the percentage increase in the number of visitors?

- (a) 64%
- (b) 24%
- (c) 80%
- (d) 20%
- (e) 40%

Q13. A tree's height increases annually by $\frac{1}{8}$ th of its height. By how much will its height increase after 2.5 years, if it stands today at 10 m height?

- (a) 3 m
- (b) 3.44 m
- (c) 3.6 m
- (d) 3.88 m
- (e) 4 m

Q14. A number X is $16\frac{2}{3}\%$ less than another number Y. Number Y is three fourth of 24. Find the sum of the two numbers X and Y.

- (a) 30
- (b) 33
- (c) 36
- (d) 24
- (e) 42

Q15. Udita purchased a hand bag in Rs. 2,520. Later she felt that she had given 5% extra of the actual price of hand bag. Find the actual price of hand bag.

- (a) Rs. 2,646

- (b) Rs. 2,500
 (c) Rs. 2400
 (d) Rs. 2,450
 (e) None of these

Solutions

S1. Ans.(a)

Sol.

Total of maximum marks of all subjects
 $= 105 \times 5 = 525$

$$80\% \text{ of } 525 = \frac{525 \times 80}{100} = 420$$

Obtained marks of four subjects

(Hindi, Sanskrit, Mathematics and English)

$$= 89 + 92 + 98 + 81 = 360$$

So, the obtained marks in Science = $420 - 360 = 60$

S2. Ans.(c)

Sol.

First part = Rs. x and second part = Rs. y.

$$\therefore \frac{x \times 80}{100} = \frac{y \times 60}{100} + 3$$

$$\Rightarrow \frac{4x}{5} = \frac{3y}{5} + 3$$

$$\Rightarrow 4x - 3y = 15 \quad \dots\dots\dots(i)$$

Again,

$$\frac{4y}{5} = \frac{9x}{10} + 6$$

$$\Rightarrow 8y = 9x + 60$$

$$8y - 9x = 60$$

By equation (i) $\times 8$ + (ii) $\times 3$,

$$32x - 24y = 120$$

$$24y - 27x = 180$$

$$5x = 300 \Rightarrow x = 60$$

From equation (i)

$$4 \times 60 - 3y = 15$$

$$\Rightarrow 3y = 240 - 15 = 225$$

$$\Rightarrow y = \frac{225}{3} = 75$$

$$\therefore \text{Required number} = x + y = 60 + 75 = 135$$

S3. Ans.(d)

Sol.

Let the initial expenses on rice, fish and oil be Rs. $12x$, Rs. $17x$ and Rs. $3x$ respectively.

$$\begin{aligned} \therefore \text{Total expenditure} &= \text{Rs. } (12x + 17x + 3x) \\ &= \text{Rs. } 32x \end{aligned}$$

After increase,

$$\begin{aligned} \text{Expenditure on rice} &= \frac{120}{100} \times 12x \\ &= \text{Rs. } 14.4x \end{aligned}$$

$$\begin{aligned} \text{Expenditure of fish} &= \frac{130}{100} \times 17x \\ &= \text{Rs. } 22.1x \end{aligned}$$

$$\text{Expenditure on oil} = \frac{150}{100} \times 3x = \text{Rs. } 4.5x$$

$$\text{Total expenditure} = \text{Rs. } (14.4x + 22.1x + 4.5x) = \text{Rs. } 41x$$

$$\text{Increase} = \text{Rs. } (41x - 32x) = \text{Rs. } 9x$$

$$\begin{aligned} \therefore \text{Percentage increase} &= \frac{9x}{32x} \times 100 \\ &= \frac{225}{8} = 28\frac{1}{8}\% \end{aligned}$$

S4. Ans.(d)

Sol.

If weights of 3 pieces are x , $2x$, $3x$

$$\text{Weight of diamond} = x + 2x + 3x = 6x$$

$$(6x)^2 = 5184 \Rightarrow 36x^2 = 5184 \Rightarrow x^2 = 144$$

$$\begin{aligned} \text{Total weight of 3 pieces} &= x^2 + (2x)^2 + (3x)^2 \\ &= x^2 + 4x^2 + 9x^2 = 14x^2 \end{aligned}$$

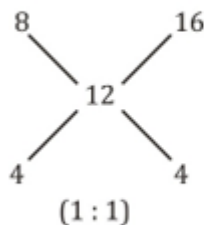
$$\text{Loss weight in cutting} = 36x^2 - 14x^2 = 22x^2$$

$$\text{Loss value in cutting} = 22 \times 144 = \text{Rs. } 3168$$

S5. Ans.(a)

Sol.

$$\text{Average increment} = \frac{600}{5000} \times 100 = 12\%$$



$$\text{No. of males} = \frac{1}{2} \times 5000 = 2500$$

S6. Ans.(b)

Sol.

Let he deposits Rs. x and Rs. y in two banks A and B respectively.

ATQ,

$$\frac{x \times 5 \times \frac{1}{2}}{100} = \frac{y \times 4 \times \frac{1}{2}}{100}$$

$$\Rightarrow \frac{x}{y} = \frac{4}{5}$$

S7. Ans. (b)

Sol.

Let the salaries of Laxman and Gopal one year before be L_1, G_1 respectively and

now L_2, G_2 respectively, Then,

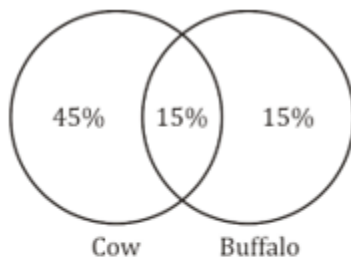
$$\frac{L_1}{G_1} = \frac{3}{4}, \quad \frac{L_1}{L_2} = \frac{4}{5}, \quad \frac{G_1}{G_2} = \frac{2}{3}$$

and $L_2 + G_2 = 4160$

Solving these equations, we get $L_2 = \text{Rs. } 1600$

S8. Ans.(b)

Sol.



Venn diagram of families which have buffalo and cow

Required families which do not have a cow or a buffalo

$$= 100 - (45 + 15 + 15) = 25\%$$

According to the question

$$\text{Required number} = \frac{96}{100} \times 25 = 24$$

S9. Ans.(a)

Sol.

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Duty on Laptop

$$= \frac{210000 \times 10}{100} = \text{Rs. } 21000$$

$$\text{Duty on Television} = \frac{100000 \times 8}{100} = \text{Rs. } 8000$$

$$\text{Duty on Television} = \frac{150000 \times 5}{100} = 7500$$

Total duty paid by business man

$$= 21000 + 8000 + 7500 = 36500$$

S10. Ans.(a)

Sol.

Let total no. of students in the college = 100

No. of students who study math only = 60 - 15 = 45

No. of students who study commerce only = 55 - 15 = 40

∴ Total no. of boys who study only math and only commerce

$$= \frac{3}{5} \times 45 + \frac{2}{5} \times 40 = 43$$

Total no. of girls who study only math and only commerce

$$= \frac{2}{5} \times 45 + \frac{3}{5} \times 40 = 42$$

$$\therefore \text{Required percentage} = \frac{43}{42} \times 100 \approx 102\%$$

S11. Ans.(c)

Sol.

Monthly salary of Mr. Raghav

$$= \frac{10.8}{12} \times 100000 = 90,000$$

∴ Total spending made by Mr. Raghav

$$= 13,20,000 + \frac{60}{100} \times 90,000 = 13,74,000$$

S12. Ans.(c)

Sol.

Let no. of visitors = x

Total sales value = y

ATQ,

$$5x = y \dots\dots\dots(i)$$

Rate of each ticket after 20% decrease = Rs. 4

Let X new no. of visitors,

So, ATQ

$$4X = 1.44y \dots\dots(ii)$$

$$4X = 7.2x \quad [\text{using (i) in (ii)}]$$

$$X = 1.8x$$

Percentage increase = 80%

S13. Ans.(b)

Sol.

It's height after 2.5 yrs will be

$$= 10 \left[\left(1 + \frac{1}{8} \right)^2 \times \left(1 + \frac{1}{16} \right) \right]$$

$$= 10 \left[\frac{81}{64} \times \frac{17}{16} \right] = 13.4472$$

Increase in Height

$$= 13.4472 \text{ m} - 10 \text{ m} = 3.4472 \text{ m}$$

S14. Ans. (b)

Sol.

$$\therefore Y = \frac{3}{4} \text{ of } 24$$

$$= \frac{3}{4} \times 24$$

$$= 18$$

$$\therefore X = \left(100 - \frac{50}{3} \right) \% \text{ of } 18$$

$$= \frac{5}{6} \times 18$$

$$= 15$$

$$\therefore \text{Required sum} = 18 + 15 = 33$$

S15. Ans.(c)

Sol.

Actual price of handbag

$$= \frac{100}{105} \times 2520 = \text{Rs. } 2,400$$

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