



Percentage Questions For SSC MTS

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Instructions

Question 1

A number is increased by 10% and then decreased by 10% then by what percent should the value be increased to get the original value ?

- A 0 %
- B 100/99 %
- C 1%
- D 99/100 %

Answer: B

Explanation:

let the value be x

Increased by 10% it becomes $1.1x$

Decreased by 10% it becomes $1.1x \times 0.9$

$= 0.99x$

Percentage to be increased to get the original value $= (0.01x / 0.99x) \times 100$

$= 100/99 \%$

Question 2

A 20 litre mixture contains 60% of alcohol and 4 litres of alcohol is added to it then what is the water percentage in the mixture ?

- A 33.33%
- B 20%
- C 40%
- D 25%

Answer: A

Explanation:

In a 20 litre mixture alcohol percent = 60%

Therefore $20 \times 60/100 = 12$ litres

Water $= 20 - 12 = 8$ litres

Total alcohol $= 12 + 4 = 16$ litres

Water percentage $= (8/24) \times 100$

$= 33.33\%$

Question 3

A number is increased by 20% and then decreased by 30%. What is the percentage change in the value ?

- A 16%
- B 24%
- C 20%
- D 28%

Answer: A

Explanation:

let the number be x

As it is increased by 20% we have $x \times 1.2 = 1.2x$
And again decreased by 30% and so $1.2x \times 0.7 = 0.84x$
Percentage change in the value $((x - 0.84x)/x) \times 100 = 16\%$

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Instructions

For the following questions answer them individually

Question 4

A batsman scored 168 runs which included 3 boundaries and 5 sixes. How much percentage of his total score did he make by running between the wickets?

- A 60%
- B 75%
- C 80%
- D 50%

Answer: B

Explanation:

Score he made using boundaries and sixes $= 4 \times 3 + 5 \times 6 = 12 + 30 = 42$ runs

Total score $= 168$ runs

Score made by running between the wickets $= 168 - 42 = 126$ runs

Therefore, Required percentage $= \frac{126}{168} \times 100 = 75\%$

Question 5

In a school, Class A has 30% boys, Class B has 40% girls. Then, the number of girls in Class A is what percentage of the number of boys in Class B?

- A 2.5%
- B 4%
- C 15%
- D Can't be determined

Answer: D

Explanation:

Let the total number of students in Class A be A.

Then, Boys in Class A $= 30\%$ of A $= 0.3A$

Then, Girls in Class A $= A - 0.3A = 0.7A$

Let the total number of students in Class B be B.

Then, Girls in Class B $= 40\%$ of B $= 0.4B$

Then, Boys in Class B $= B - 0.4B = 0.6B$

$\frac{0.7A}{0.6B}$

Therefore, Required percentage $= \frac{0.7A}{0.6B} \times 100$

Since, the total number of students in Class A and Class B is unknown, the required percentage can't be determined.

Question 6

The price of sugar is increased by 40%. By how much percent should there be reduction in consumption so that the expenditure remains the same?

- A 28.5%
- B 32.5%
- C 42%
- D 40%

Answer: A

Explanation:

Let the initial price of sugar be Rs.100
 Let the initial consumption be 100 kg.
 Then Initial expenditure = 100×100
 New price = 140% of Rs.100 = Rs.140
 Let the final consumption be Rs.x
 Initial expenditure = Final expenditure
 $100 \times 100 = 140 \times x$
 $\Rightarrow x = 71.42$ kg

$$\text{Percentage Reduction in consumption} = \frac{100 - 71.42}{100} \times 100 = 28.58\%$$

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Question 7

Find the percentage change in area of a rectangle if the length of the rectangle is reduced by 20% and breadth of the rectangle is increased by 10%.

- A 28% increase
- B 88% decrease
- C 12% increase
- D 18% decrease

Answer: C

Explanation:

$$\text{Effective change in percentage} = \frac{l \times b}{l + b} + 100 = -20 + 10 + \frac{(-20) \times (10)}{100} = -10 - 2 = -12\%$$

Negative indicates decrease in percentage. Hence, the area decreases by 12%

Question 8

If a shopkeeper gives three successive discounts of 20% each, then what is the effective discount percentage?

- A 48.8%
- B 62.5%
- C 37.8%
- D 69.8%

Answer: A

Explanation:

Let the Marked price be Rs.1000

$$\text{Selling price after three successive discounts} = 1000 \times \frac{80}{100} \times \frac{80}{100} \times \frac{80}{100} = \text{Rs.} 512$$

$$\text{Effective discount} = \frac{1000 - 512}{1000} \times 100 = 48.8\%$$

Question 9

The price of rice has increased by 50%. By how much percent should there be reduction in consumption so that the expenditure remains the same?

- A 33.33%
- B 50%
- C 66.67%
- D 63.33%

Answer: C

Explanation:

Let the initial price be Rs.100

Let the initial consumption be 100 kg

Price increased by 50%

Final price = 150% of Rs.100 = Rs.150

Let final consumption be x kg

Initial expenditure = Final expenditure

$$\Rightarrow 100 \times 100 = 150 \times x$$

$$\Rightarrow x = \frac{100}{3} = 66.67$$

Final consumption = 66.67 kg

$$\text{Percentage Reduction in consumption} = \frac{100 - 66.67}{100} \times 100 = 33.33\%$$

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Question 10

The price of sugar has increased by 25%. By how much percent should there be a reduction in consumption so that the expenditure remains the same?

- A 25%
- B 20%
- C 33.33%
- D 40%

Answer: B

Explanation:

Let the initial price be Rs.100

Let the initial consumption be 100 kg

Price increased by 25%

Final price = 125% of Rs.100 = Rs.125

Let final consumption be x kg

Initial expenditure = Final expenditure

$$\Rightarrow 100 \times 100 = 125 \times x$$

$$\Rightarrow x = 80$$

Final consumption = 80 kg

$$\text{Percentage Reduction in consumption} = \frac{100 - 80}{100} \times 100 = 20\%$$

Question 11

Amit scored 20% marks and failed by 15 marks. Rohit scored 40% marks and obtained 25 marks more than those required to pass. Then find the pass percentage.

- A 35%
- B 37.5%
- C 27.5%
- D 24.75%

Answer: C

Explanation:

Let the maximum marks be 'x'

Then, Pass marks = 20% of x + 15 = 40% of x - 25

$$\Rightarrow 0.2x + 15 = 0.4x - 25$$

$$\Rightarrow 0.2x = 40$$

$$\Rightarrow x = 200$$

Hence, Maximum marks = 200

$$\text{Pass marks} = 20\% \text{ of } 200 + 15 = 40 + 15 = 55$$

$$\text{Pass percentage} = \frac{55}{200} \times 100 = 27.5\%$$

Question 12

If a% of b=20 and b% of c=30 then how much percent is c greater than a ?

- A 50%
- B 150%
- C 75%
- D 66.66%

Answer: A

Explanation:

Given $ab=2000$

$bc=3000$

$$\text{Then } \frac{ab}{bc} = \frac{2000}{3000}$$

$$\frac{a}{c} = \frac{2}{3}$$

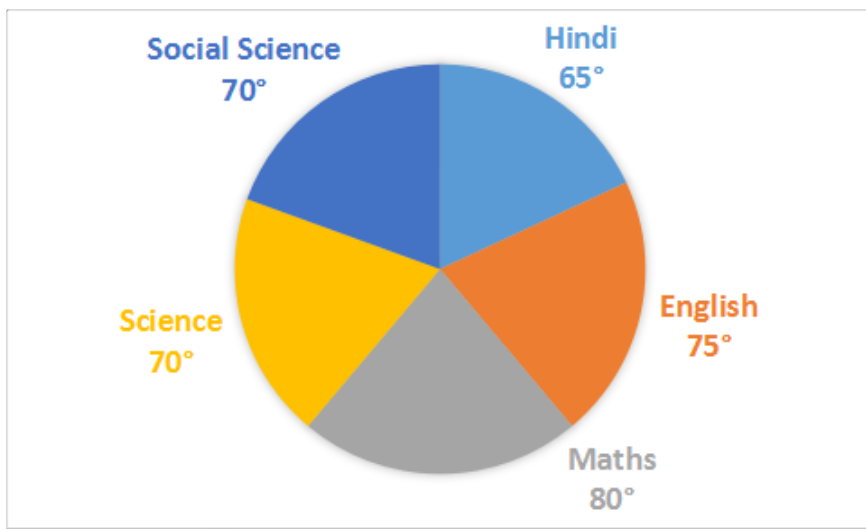
$$c = \frac{3}{2} \times a$$

$$\text{Required percentage} = \frac{\left(\frac{3}{2}\right)a - a}{a} \times 100 = 50\%$$

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Instructions

The given pie chart shows the marks obtained (in degrees) by a student in different subjects. The total marks obtained by the student in the examination is 432.



Question 13

If the maximum marks per subject is 100, then what is the total marks (in percentage) obtained in English and Hindi together?

- A 168
- B 68
- C 76
- D 84

Answer: D

Explanation:

Total marks in the examination = 432

Marks (in degree) obtained in English and Hindi together = $75 + 65 = 140^\circ$

Marks obtained in English and Hindi together = $\frac{140^\circ}{360^\circ} \times 432 = 168$

\therefore Total marks (in percentage) obtained in English and Hindi together = $\frac{168}{200} \times 100 = 84\%$

=> Ans - (D)

Question 14

The marks obtained in science is what percentage of the total marks?

- A 20.14
- B 18.12
- C 17.16
- D 19.44

Answer: D

Explanation:

Marks (in degrees) obtained in Science = 70°

Total marks (in degrees) = 360°

=> Required % = $\frac{70}{360} \times 100$

= $\frac{700}{36} = 19.44\%$

=> Ans - (D)

Instructions

The table give below shows the marks obtained by six students in 5 different subjects.

	Subject				
Student	P	Q	R	S	T
A	72	75	80	82	93
B	87	94	78	87	95
C	68	79	55	91	72
D	55	69	74	81	76
E	74	88	83	93	87
F	86	92	95	81	82

Question 15

What is the aggregate percentage of marks obtained by student C in all the five subjects?

- A 71
- B 75
- C 76
- D 73

Answer: D

Explanation:

Total marks obtained by student C

$$= 68 + 79 + 55 + 91 + 72 = 365$$

$$\Rightarrow \text{Average marks} = \frac{365}{5} = 73$$

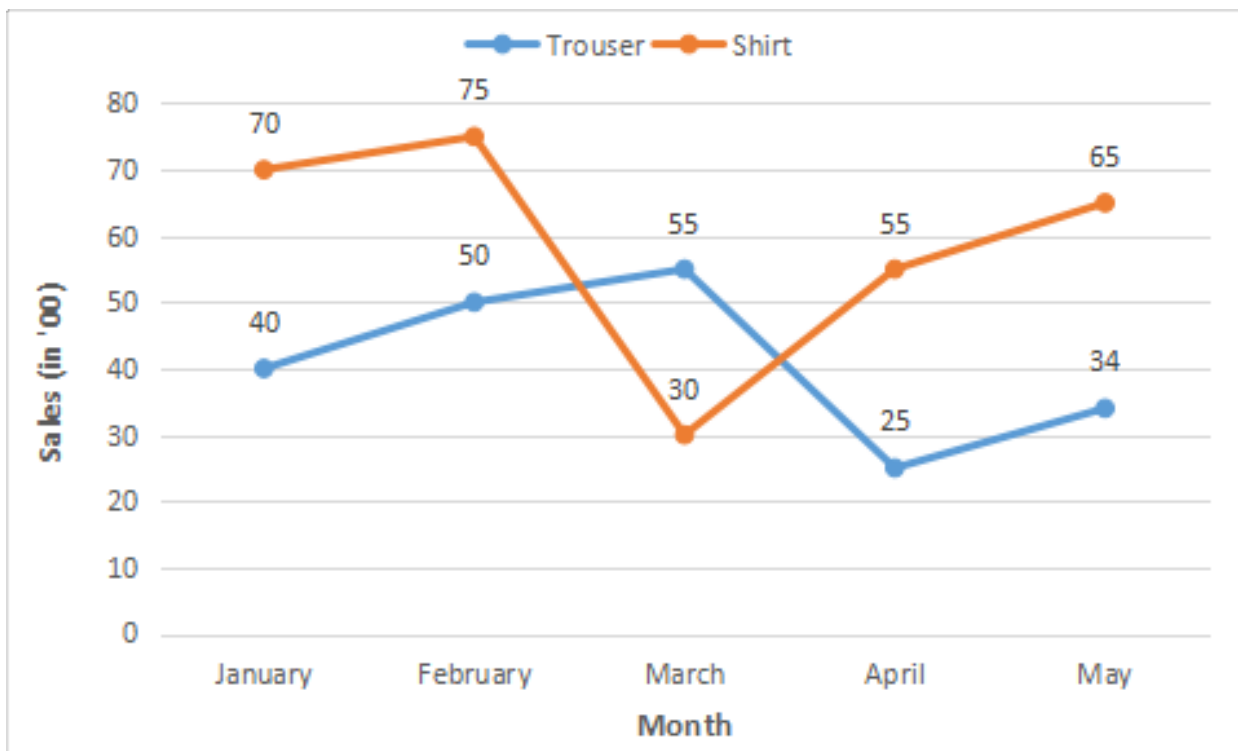
=> Ans - (D)

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Instructions

The line chart given below represents the sales (in 00) of trousers and shirts for five months.





Question 16

What is the percentage increase in the sales of the trousers from January to February?

- A 25
- B 20
- C 10
- D 28

Answer: A

Explanation:

Sale of trousers in January (in '00) = 40

Sale of trousers in February (in '00) = 50

$$\Rightarrow \text{Required \% increase} = \frac{(50-40)}{40} \times 100$$

$$= \frac{100}{40} = 25\%$$

\Rightarrow Ans - (A)

Instructions

For the following questions answer them individually

Question 17

An article having marked price Rs 1800 is sold for Rs 1476. What is the discount percentage?

- A 14
- B 15
- C 16
- D 18

Answer: D

Explanation:

Marked price of article = Rs. 1800

Selling price = Rs. 1476

$$\Rightarrow \text{Discount \%} = \frac{(1800-1476)}{1800} \times 100$$

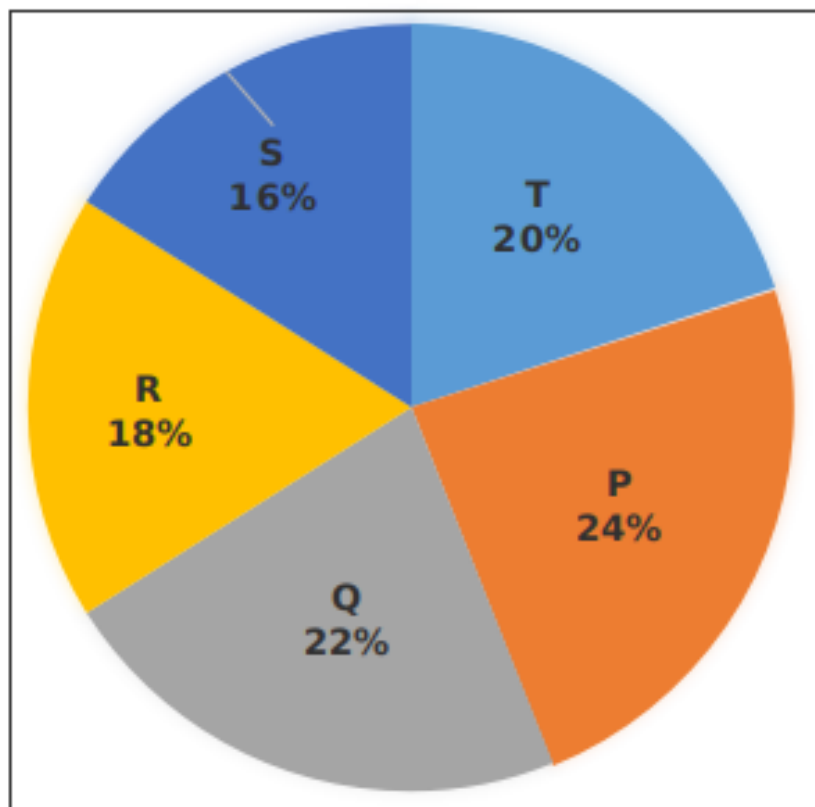
$$= \frac{324}{18} = 18\%$$

\Rightarrow Ans - (D)

Instructions

The following pie chart shows the expenditure (in percentage) of five companies P, Q, R, S and T in the year 2016.

Total Expenditure = 48 crores.

**Question 18**

Total amount spent by company S is what percent of total amount spent by company T and R?

- A 42.1
- B 43
- C 39.68
- D 41

Answer: A

Explanation:

% amount spent by company S = 16%

% amount spent by company T and R = $(20+18) = 38\%$

$$\Rightarrow \text{Required percent spent by company S} = \frac{16}{38} \times 100$$

$$= \frac{800}{19} = 42.1\%$$

\Rightarrow Ans - (A)

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Question 19

By how much percent expenditure of company Q and R together greater than that of company P?

- A 33.33
- B 60
- C 66.67
- D 75

Answer: C

Explanation:

% amount spent by company P = 24%

% amount spent by company Q and R = $(22+18) = 40\%$

$$\Rightarrow \text{Required percent} = \frac{(40-24)}{24} \times 100$$

$$= \frac{2}{3} \times 100 = 66.67\%$$

\Rightarrow Ans - (C)

Question 20

What was the total expenditure (in Rs crores) of the company Q, R and T together?

- A 19.2
- B 28.8
- C 24.3
- D 31.4

Answer: B

Explanation:

Total expenditure (in Rs crores) = 48

% expenditure of the company Q, R and T together = $(22+18+20) = 60\%$

$$\Rightarrow \text{Total expenditure (in Rs crores) of the company Q, R and T together} = \frac{60}{100} \times 48$$

$$= \frac{144}{5} = 28.8$$

\Rightarrow Ans - (B)

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