



# DAILY QUESTIONS

13<sup>TH</sup> JUNE '18

QUANT- PERCENTAGE



# PERCENTAGE

I.1) The question is based on the following data:

In an examination every question correctly answered fetches two marks and for every question wrongly answered one mark is deducted. Anushk and Preetham took the examination. Anushk attempted a certain number of questions and 20% of them went wrong. Preetham attempted a certain number of questions and 10% of the questions attempted by him went wrong. Anushk got 33 marks more than the pass marks and Preetham got 48 marks more than the pass marks. Anushk and Preetham together attempted 100 questions.

Q.1) What is the pass marks of the examination?

- [a] 59
- [b] 43
- [c] 47
- [d] 37



Solution (d)

Let the number of questions attempted by Anushk and Peetham be X and Y respectively. Then the number of questions wrongly answered by Anushk and Preetham are  $0.2X$  and  $0.1Y$  respectively.

Let the pass marks be P

$$\text{Given, } (0.8X) \times 2 - (0.2X)1 = P + 33$$

$$(0.9Y) \times 2 - (0.2Y)1 = p + 48$$

By solving these equation we get

$$1.7Y - 1.4X = 15 \dots \dots \dots (1)$$

$$\text{Also, } X + Y = 100 \dots \dots \dots (2)$$

$$\text{Solving (1) and (2), we have } X = 50 \text{ and } Y = 50$$

$$\text{The pass mark is } (1.4) \times 50 = P+33$$

$$P=37 \text{ (ans.)}$$



# PERCENTAGE

**Q.2) One year 60% of the students of a school are boys. The next year the number of girls increases by 20% and the total number of students increases by 14%. By what percent does the number of boys increase?**

- [a] 12%
- [b] 8%
- [c] 9%
- [d] 10%

Solution (d)

The data is tabulated below

	First year	Next year
Boys	60	66
Girls	40	48
total	100(say)	114

The number of boys increases by  $6/60 = 10\%$

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**Q.3) The price of groundnuts increased by X% per week over two successive weeks. If at the beginning two kilograms were available for RS. 80 and after the two weeks they were available for RS. 105.80, what is the value of X?**

[a] 1.5

[b] 115

[c] 15

[d] 11.5



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**Solution (c)**

**Beginning price for 2 kg = RS.80 ,**

**After the two weeks = RS. 105.80**

**Increases by (in RS.) = RS. 105.80 – 80 = RS.25.8**

**Increased in % (total) in two weeks =  $25.8 \times 100 / 80 = 32.25\%$**

**But we have to find out the successive percent for every week**

**By using trial and error method:  
Option (a) and option (b) cannot be the possible answer as (a) is very less and (b) is very high.**

**Best possible answer is (c)**

**1st week increment = 15 % of 80 = 12**

**2<sup>nd</sup> week increment = 15% of 92 = 13.8**

**Total increment = 12 + 13.8 = RS. 25.8**

**Answer is justified.**



# PERCENTAGE

**Q.4) The total expenditure (E) of a mess is given by  $E = F + cn$ , where F is the fixed cost, n is the number of people eating in the mess and c is the cost per person. One month F, n and c increased by 50%, 25% and 20% respectively over the previous month, what is the percentage increase in the total expenditure?**

- [a] 50%**
- [b]  $31 \frac{2}{3}$  %**
- [c] 45%**
- [d] cannot be determined**

**Solution (a)**

Let first month expenditure be E1 and next month expenditure be E2

$$\text{Given } E1 = (F + cn)$$

$$E2 = 150/100F + (125/100 \times 120/100)cn$$

By solving we get:

$$3/2 F + 3/2 cn$$

$$E2 = 3/2 (F + cn)$$

$$\text{As } E1 = F + cn$$

So, we can say that  $E2 = 3/2 E1$

Means,  $E1 = 2$  and  $E2 = 3$

Increased % = 50%



# PERCENTAGE

**Q.5) A new coach was appointed for a football team, in the middle of a season. After the new coach took over, the team won  $85\frac{5}{7}\%$  of the 35 matches that it played. however, the overall success rate of the team for the entire season was only 50%. What could be the minimum number of matches the team played the season before the new coach took over?**

- [a] 25
- [b] 27
- [c] 24
- [d] 21

**Solution (a)**

After the coach was appointed the team won  $85\frac{5}{7}\%$   
=  $\frac{6}{7}$  of the 35 matches (i.e. 30 matches). But the overall performance (wins/ total matches played) was only 50%. The minimum number of matches that it could have played before the new coach took over is obtained by assuming that it lost all the matches (say X) before the coach took over.

$$\text{i.e. } 30 / X + 35 = \frac{1}{2}$$

$$X = 25$$



# PERCENTAGE

**Q.6) The population of rats in a locality X is increases by 20% in one year. Observing this, the pest control committee decided to use a special kind of pesticide 'xyz' which effectively kills 169 rats in 3 months. Just after two years, what is the net increase in the population of rats if, initially the population of rats is 3200 and the pesticide is used effectively?**

- [a] increase of 128 rats**
- [b] decrease of 128 runs**
- [c] neither an increase nor a decrease in the population.**
- [d] none of these**

**Solution ( c)**

**The growth rate of rat population in 3 months**

$$20 \times 3/12 = 5\%$$

**Increase in first 3 months =**

$$3200 \times 1.05$$

$$= 3360$$

**Also, net decrease in 3 months**

$$= 160$$

**So, rat population = 3360 – 160**

$$= 3200$$

**In the same way, after every 3 months, the rat population remains the same**

**Hence, even after 3x8 months i.e., 2 years the population is maintained.**



# PERCENTAGE

**Q.7) A business house has three companies A, B and C and one trust D. each company**

**Contributes 5% of its own revenue, calculated after excluding loans taken from group companies, to the trust. A lent B 10% of B's revenue, B has twice as much money as C's revenue. C had taken no loan from A or B and gave the trust Rs. 10000. How much approximately did B contribute to the trust?**

**Solution (b)**

**After taking a loan from A, B has twice as much funds as C. if all this were B's revenue, the amount of its contribution to the trust would have been Rs. 20000. But B's funds include a loan from A. since this loan was 10% of B's revenue, B's contribution is  $20000 \times (100/110)$**

**The exact figure is 18181.81**

**[a] Rs. 17000**

**[b] Rs. 18000**

**[c] Rs. 20000**

**[d] Rs. 21000**

**[e] cannot be determined**





# PERCENTAGE

**Q.8) The marks obtained by a student in English, Maths, science and Hindi in standard X are as follows (maximum marks per subject = 100)**

- I) the marks obtained in Maths are 1.5 times the marks obtained in English.**
- II) he got a total of 60% in these four subjects.**
- III) he got the maximum and minimum marks in science and Hindi respectively, with a difference of 48 marks between them.**
- IV) an addition of 50% of the marks obtained in English too the final score gives an overall percentage of 70%.**

**What would be his percentage if only maths and science marks are counted?**

- [a] 80**
- [b] 82**
- [c] 84**
- [d] 86**



**Solution (b)**

**Let the marks obtained in English and Hindi be X and Y respectively**

$$X + 1.5 X + 48 + 2Y = 256 \dots \dots \dots (1)$$

$$0.5X + 2.5X + 48 + 2Y = 280 \dots \dots \dots (2)$$

**From (1) and (2) we get**

$$X = 48, Y = 44$$

$$\text{Marks in Maths and Science} = 256 - (48 + 44)$$

$$= 164$$

$$\text{So, required percentage} = \frac{164}{200} \times 100 = 82 \% (\text{ans.})$$



# PERCENTAGE

**Q.9) In an entrance exam, problem solving (PS), verbal (V) and reading comprehension (RC) are given weightage of 5, 3, 4 respectively i.e., the score in PS is 5 times the number of correctly attempted PS questions, that in verbal is 3 times the number of correctly attempted verbal questions and so on. To score 576 (maximum marks), Ram had to score 6.666 % more marks in PS, 20% more in verbal and 33.333% more in RC. How much did Ram score ? (There are an equal number of questions in each section).**

- [a] 511
- [b] 410
- [c] 489
- [d] cannot be determined

**Solution (c)**

Let X be the number of questions in each section.

$$5X + 4X + 3X = 576$$

So X = 48 questions per section

To get full marks, he should get full in each section

$$\text{His score in PS} = (48 \times 5) / 1.067 = 225$$

$$\text{His score in verbal} = (48 \times 3) / 1.2 = 120$$

$$\text{His score in RC} = (48 \times 4) / 1.33 = 144$$

So his total score is  $225 + 120 + 144 = 489$   
(ans.)



# PERCENTAGE

**Q.10) In a party, 55 persons were present (men and women). 40% of the women wore earrings (consider 2 earrings per women) and the remaining 60% wore goggles. Among the men, 50% wore goggles. Total number of goggles in the party were 1.5 times the total number of earrings. Find the total number of earrings in the party.**

- [a] 10
- [b] 16
- [c] 20
- [d] 24



**Solution (c)**

Let there were X men and Y women present in the party.

$$X + Y = 55 \dots \dots \dots (1)$$

40% of the women wore earrings, so the number of women wearing earrings was 0.4Y.

Hence, total number of earring was 0.8Y.

60% of women and 50% of men wore goggles. Total number of goggles =  $0.5Y + 0.6Y = 1.5$  the number of earrings.

$$\text{i.e., } 0.5X + 0.6Y = 1.5(0.8 Y)$$

$$0.5X = 0.6Y \dots \dots \dots (2)$$

Solving (1) and (2), we get, X = 30 and Y = 25.

Hence, 10 women wore earrings.

So total number of earrings were 20.

