



## Percentage Questions for CAT Set-2 PDF

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## Instructions

For the following questions answer them individually

### Question 1

Tina, Mina, Gina, Lina and Bina are 5 sisters, aged in that order, with Tina being the eldest. Each of them had to carry a bucket of water from a well to their house. Their buckets' capacities were proportional to their ages. While returning, equal amount of water got splashed out of their buckets. Who lost maximum amount of water as a percentage of the bucket capacity?

- A Tina
- B Mina
- C Gina
- D Lina
- E Bina

**Answer:** E

### Explanation:

Let the capacities of bucket of water carried by Tina, Mina, Gina, Lina and Bina respectively be  $W_T, W_M, W_G, W_L, W_B$

It is given that :  $W_T > W_M > W_G > W_L > W_B$

Let they spill  $x$  litres of water from the bucket.

Thus, %age of water spilled by them respectively be

$$= \frac{x}{W_T} \times 100, \frac{x}{W_M} \times 100, \frac{x}{W_G} \times 100, \frac{x}{W_L} \times 100, \frac{x}{W_B} \times 100$$

$$\because W_T > W_M > W_G > W_L > W_B$$

$$\therefore \frac{x}{W_T} \times 100 < \frac{x}{W_M} \times 100 < \frac{x}{W_G} \times 100 < \frac{x}{W_L} \times 100 < \frac{x}{W_B} \times 100$$

Thus, Bina lost maximum amount of water as a percentage of the bucket capacity.

### Question 2

Ramesh bought a total of 6 fruits (apples and oranges) from the market. He found that he required one orange less to extract the same quantity of juice as extracted from apples. If Ramesh had used the same number of apples and oranges to make the blend, then which of the following correctly represents the percentage of apple juice in the blend?

- A 25%
- B 33.3%
- C 60%
- D 66.6%
- E None of the above.

**Answer:** E

### Explanation:

We know that Ramesh bought 6 fruits in total.

If the number of apples is 1, then the number of oranges required to get an equal amount of juice will be 0. Therefore, we can eliminate this case.

If the number of apples is 2, then the number of oranges required to get an equal amount of juice will be 1. We know that Ramesh had 1 more orange than needed. The total number of fruits in this case is  $2+1+1 = 4$ . Therefore, we can eliminate this case too.

If the number of apples is 3, then the number of oranges required to get an equal amount of juice will be 2. We know that Ramesh had 1 more orange than needed. The total number of fruits in this case is  $3+2+1 = 6$ . This satisfies the condition.

The quantity of juice from 3 apples is equal to the quantity of juice from 2 oranges.

Therefore, the proportion of apple juice in the initial mixture is  $2/(2+3) = 2/5 = 40\%$ . (2+3 is used since we are finding the quantity of juice. 2 denotes the quantity of juice obtained from 3 apples)

Therefore, option E is the right answer.

### Question 3

A jar contains a mixture of 175 ml water and 700 ml alcohol. Gopal takes out 10% of the mixture and substitutes it by water of the same amount. The process is repeated once again. The percentage of water in the mixture is now

- A 30.3
- B 35.2
- C 25.4
- D 20.5

**Answer:** B

**Explanation:**

Final quantity of alcohol in the mixture =  $700 + 175 * (100 - 90) / 100 = 567$  ml

Therefore, final quantity of water in the mixture =  $875 - 567 = 308$  ml

Hence, we can say that the percentage of water in the mixture =  $308 / 875 * 100 = 35.2\%$

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### Question 4

Let A and B be two solid spheres such that the surface area of B is 300% higher than the surface area of A. The volume of A is found to be k% lower than the volume of B. The value of k must be

[CAT 2003 leaked]

- A 85.5
- B 92.5
- C 90.5
- D 87.5

**Answer:** D

**Explanation:**

Surface area of sphere A (of radius a) is  $4\pi * a^2$

Surface area of sphere B (of radius b) is  $4\pi * b^2$

$\Rightarrow 4\pi * a^2 / 4\pi * b^2 = 1/4 \Rightarrow a:b = 1:2$

Their volumes would be in the ratio 1:8

Therefore,  $k = 7/8 * 100\% = 87.5\%$

### Question 5

At the end of year 1998, Shepard bought nine dozen goats. Henceforth, every year he added  $p\%$  of the goats at the beginning of the year and sold  $q\%$  of the goats at the end of the year where  $p > 0$  and  $q > 0$ . If Shepard had nine dozen goats at the end of year 2002, after making the sales for that year, which of the following is true?

[CAT 2003 leaked]

- A  $p = q$
- B  $p < q$
- C  $p > q$
- D  $p = q/2$

Answer: C

#### Explanation:

By the end of the year 2002, Shepard bought 4 times and sold 4 times. He is left with the initial number of goats that he had in 1998. If the percentage of goats bought is equal to or lesser than the percentage of goats sold, then there would be a net decrease in the total number of goats. For the number of goats to remain the same,  $p$  has to be greater than  $q$ , because  $p\%$  is being calculated in a lesser number and  $q\%$  is being calculated on a greater number. Hence,  $p > q$ .

### Question 6

A college has raised 75% of the amount it needs for a new building by receiving an average donation of Rs. 600 from the people already solicited. The people already solicited represent 60% of the people the college will ask for donations. If the college is to raise exactly the amount needed for the new building, what should be the average donation from the remaining people to be solicited?

- A Rs. 300
- B Rs. 250
- C Rs. 400
- D 500

Answer: A

#### Explanation:

Let there be total 100 people whom the college will ask for donation. Out of these 60 people have already given average donation of 600 Rs. Thus total amount generated by 60 people is 36000. This is 75% of total amount required. So the amount remaining is 12000 which should be generated from remaining 40 people. So average amount needed is  $12000/40 = 300$

## CAT Previous Papers PDF

### Question 7

Fresh grapes contain 90% water by weight while dried grapes contain 20% water by weight and the remaining proportion being pulp. What is the weight of dry grapes available from 20 kg of fresh grapes?

- A 2 kg
- B 2.4 kg
- C 2.5 kg
- D None of these

**Answer: C**

**Explanation:**

Fresh grapes contain 90% water so water in 20kg of fresh pulp =  $(90/100) \times 20 = 18\text{kg}$ .

In 20kg fresh grapes, the weight of water is 18kg and the weight of pulp is 2kg.

The concept that we apply in this question is that the weight of pulp will remain the same in both dry and fresh grapes. If this grape is dried, the water content will change but pulp content will remain the same.

Suppose the weight of the dry grapes be D.

80% of the weight of dry grapes = weight of the pulp = 2 kg

$(80/100) \times D = 2 \text{ kg}$ .

D = 2.5 kg

**Question 8**

**A student gets an aggregate of 60% marks in five subjects in the ratio 10 : 9 : 8 : 7 : 6. If the passing marks are 50% of the maximum marks and each subject has the same maximum marks, in how many subjects did he pass the examination?**

**A** 2

**B** 3

**C** 4

**D** 5

**Answer: C**

**Explanation:**

Let's say he scored marks as  $10x, 9x, 8x, 7x, 6x$  or total of  $40x$  which is 60% of total maximum marks(T).

$$\frac{T \times 60}{100} = 40x$$

$$\text{So T (total maximum marks)} = \frac{400x}{6}$$

$$\text{Or Individual max. marks} = \frac{T}{5} = \frac{80x}{6}$$

$$\text{Passing marks} = 50\% \text{ of individual max. marks} = \frac{40x}{6} = 6.66x$$

Hence he scored more than passing marks in four subjects as  $10x, 9x, 8x$  and  $7x$

and failed in one subject as scoring  $6x$  marks which is less than passing marks of  $6.66x$

**Question 9**

**Fresh grapes contain 90% water while dry grapes contain 20% water. What is the weight of dry grapes obtained from 20 kg fresh grapes?**

**A** 2 kg

**B** 2.5 kg

**C** 2.4 kg

**D** None of these

**Answer: B**

**Explanation:**

Let the total weight of fresh grapes be 100 gm.

=> Fresh grapes have 90 gm of water and 10 gm of fruit.

When these grapes are dried, the amount of fruit does not change.

=> 10 grams will become 80% of the content in dry grapes

=> Weight of dry grapes =  $\frac{10}{0.8} = 12.5$  gm

So, the weight of fresh grapes reduces to 1/8th of its original weight.

=> 20 kg of fresh grapes give 2.5 kg of dry grapes.

## CAT Syllabus (Download PDF)

### Question 10

**One bacterium splits into eight bacteria of the next generation. But due to environmental condition only 50% survives and remaining 50% dies after producing next generation. If the seventh generation number is 4,096 million, what is the number in first generation?**

- A 1 million
- B 2 million
- C 4 million
- D 8 million

**Answer:** A

### Explanation:

let's say x is the initial number of bacterias :

So in 2nd generation no. of bacterias =  $\frac{8x}{2} = 4x$

In 3rd generation, it will be =  $16x$

4th gen. =  $64x$

5th gen. =  $256x$

6th gen. =  $1024x$

7th gen. =  $4096x$

Hence  $x = 1$  million

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