



SmartKeeda
The Question Bank

Presents

TestZone

India's least priced Test Series platform

JOIN

12 Month Plan

2018-19 All Test Series

@ Just

₹ **399/-**

300+ Full Length Tests

- Brilliant Test Analysis
- Excellent Content
- Unmatched Explanations

JOIN NOW

Mixed Maths Questions for SBI PO Pre, IBPS PO Pre, IBPS Clerk Mains and SBI Clerk Mains Exams.

Bank PO Maths Quiz 5

Direction: Study the following questions carefully and choose the right answer.

1. The sum of the volume of a cylinder and that of a cone is 2310 cubic meters. The area of the base of the cylinder and the cone is same i.e. 77 sq. meters. If the height of the cone is 50% more than that of the cylinder then find the difference between the height of the cone and that of the cylinder?

- A. 15 meters B. 20 meters C. 30 meters D. 10 meters E. None of these

2. What is the probability of forming word (with or without meaning) from the letters of word 'IBPSEXAM' such that all vowels always come together?

- A. $\frac{3}{56}$ B. $\frac{3}{28}$ C. $\frac{2}{35}$ D. $\frac{2}{63}$ E. None of these

3. A box contains 4 white, 5 red, and x black balls. One red ball was drawn from the box. If the probability of choosing one red ball was $\frac{1}{4}$, then find the probability of choosing one white ball?

- A. $\frac{4}{5}$ B. $\frac{2}{9}$ C. $\frac{1}{5}$ D. $\frac{4}{15}$ E. None of these

4. A 180 meters long passenger train crosses a 360 meters long express train running in the opposite direction in 12 seconds. If the ratio of the speed of the passenger train to that of express train is 1 : 4 then find the speed of the express train?

- A. 45 meters per second B. 36 meters per second C. 40 meters per second
D. 22.5 meters per second E. None of these

5. 19 years ago, the average age of a woman and her daughter was 47.5 years. At present, two times of the woman's age is equal to five times of the daughter's age. 19 years hence, what will be the age of daughter?

- A. 38 years B. 34 years C. 57 years D. 51 years E. None of these

6. The average speed of a train is five times of the average speed of a car. If the difference between the time taken by them to cover a distance of 1260 km is 168 hours then find the time taken by the train will take to cover the same distance?

- A. 33.6 hours B. 42 hours C. 56 hours D. 21 hours E. None of these

7. 'A' alone can do half of a work in 35 days. The time taken by B to do one third of the work is equal to the time taken by A to do one fourth of the work. Find the number of days A and B together will take to complete the work?

- A. 35 days B. 40 days C. 30 days D. 60 days E. None of these

8. The marked price of an article is Rs. 3500 more than its cost price. If a shopkeeper offers 20% discount on the marked price then the profit he gets is Rs. 1400. The marked price of the article is what percent more than its cost price?

- A. 33.33% B. 66.67% C. 50% D. 40% E. None of these

9. When a shopkeeper offers 25% discount on the marked price then the ratio of cost price to selling price becomes 2 : 3. The marked price of the article is how much percentage above the cost price?

- A. 33.33% B. 50% C. 66.67% D. 40% E. None of these

10. Three persons A, B, and C invest in a business in the ratio of 5 : 6 : 4. If A and C invested for one year, then B should invest for how many months if he wants to receive 25% of the total profit at the end of one year?

- A. 4 months B. 6 months C. 3 months D. 9 months E. None of these

Correct Answers:

1	2	3	4	5	6	7	8	9	10
D	B	C	B	C	B	C	C	E	B

Explanations:

1. Volume of a cylinder = $\pi r^2 h$ and the area of the base of the cylinder = πr^2

$$\text{Volume of a cone} = \frac{1}{3} \pi r^2 h$$

$$\text{and the area of the base of a cone} = \pi r^2$$

In the question, the base area of the cylinder and the cone is same i.e. 77 sq. meters.

Let the height of the cylinder = $2x$ m then the height of the cone = $(100 + 50)\%$ of $2x = 3x$ meters

$$\text{The volume of the cylinder} = \pi r^2 h = 77 \times 2x \text{ square meters}$$

And, the volume of the cone

$$= \frac{1}{3} \pi r^2 h = \frac{1}{3} \times 77 \times 3x = 77x \text{ sq. meters}$$

$$\text{The sum of their volume} = 77 \times 2x + 77x = 231x = 2310 \text{ sq. meters}$$

$$x = 10 \text{ meters}$$

$$\text{The required difference} = 3x - 2x = x = 10 \text{ meters}$$

Hence, option D is correct.

2. The total number of letters in 'IBPSEXAM' = 8

The total number of vowels in 'IBPSEXAM' = I, E, and A = 3

In the new words, I, E, and A should always come true

Here, we will consider, I, E, and A one letter

The number of ways of arranging those letters = BPSXM(IEA) = 6 letters = $6!$ Ways

The number of ways of arranging three vowels i.e. I, E, and A = $3!$ Ways

The total number of words can be formed = $6! \times 3!$

The total number of ways of arranging IBPSEXAM = $8!$ Ways

$$\text{The reqd. probability} = \frac{6! \times 3!}{8!} = \frac{3 \times 2}{7 \times 8} = \frac{3}{28}$$

Hence, option B is correct.

3. Probability of choosing one red ball

$$= \frac{5}{4 + 5 + x} = \frac{1}{4}, \Rightarrow 20 = 9 + x, x = 11$$

The total number of balls = $4 + 5 + 11 = 20$ balls

$$\text{The probability of choosing 1 white ball} = \frac{4}{20} = \frac{1}{5}$$

Hence, option C is correct.

4. According to the question,
the ratio of the speed of the passenger train to that of express train is 1 : 4
the speed of the 180 m long passenger train = x meters per second
then, the speed of the 360 m long express train = $4x$ meters per second
Then, the relative speed = $(x + 4x) = 5x$ meters per second
We know that,

$$\text{speed} = \frac{\text{distance}}{\text{time}} = \frac{180 + 360}{12} = 5x$$

$$\frac{540}{12} = 5x$$

$$45 = 5x$$

$$x = 9 \text{ m/sec}$$

The speed of the express train = $4x = 9 \times 4 = 36$ meters per second

Hence, option B is correct.

5. 19 years ago, let woman's age = x years and daughter's age = y years

Then, $x + y = 47.5 \times 2 = 95$ years, ----- (i)

At present, the age of woman = $x + 19$ years and the age of daughter = $y + 19$ years

According to the question,

$$2(x + 19) = 5(y + 19)$$

$$2x - 5y = 95 - 38 = 57 \text{ ----- (i)}$$

Equation (i) $\times 5$ + (ii)

$$7x = 475 + 57 = 532$$

$$x = 76$$

19 years ago, daughter's age = $95 - x = 95 - 76 = 19$ years

At present, daughter's age = $19 + 19 = 38$ years,

19 years hence, daughter's age = $38 + 19 = 57$ years

Hence, option C is correct.

6. Let the average speed of the car = x km per hour
Then, the average speed of the train = $5x$ km per hour
According to the question,

$$\frac{1260}{x} - \frac{1260}{5x} = 168$$

$$1260 \times 4 = 5x \times 168$$

$$x = \frac{1260 \times 4}{5 \times 168} = 6$$

The speed of the train = $5x = 5 \times 6 = 30$ km per hour

The time it will take to cover 1260 km

$$= \frac{1260}{30} = 42 \text{ hours}$$

Hence, option B is correct.

7. A alone can do half of a work in 35 days

A can do the whole work in $35 \times 2 = 70$ days

The time taken by B to do one – third of the work is equal to the time taken by A to do one – fourth of the work

$$\frac{B}{3} = \frac{A}{4}$$

$$\frac{A}{B} = \frac{4}{3} = \text{The ratio of time}$$

We know that efficiency is inversely proportional to time

The ratio of efficiency A : B = 3 : 4

Let A's efficiency = $3x$ then B's efficiency = $4x$

Total units of work A alone will do in 70 days = $70 \times 3x$

The total units of work A and B together will do in 1 days = $3x + 4x = 7x$

The number of days they will take if they work together

$$= 70 \times \frac{3x}{7x} = 30 \text{ days}$$

Hence, option C is correct.

8. Let the cost price = Rs. x then the MP = Rs. $(x + 3500)$

When the shopkeeper offers 20% discount on the MP then the SP = $(100 - 20)\%$ of $(3500 + x) = 80\%$ of $(3500 + x)$

$$= 80 \times \frac{3500 + x}{100} = 0.8 (3500 + x) = 2800 + 0.8x$$

Profit = Rs. 1400

Therefore, CP = SP - P = $2800 + 0.8x - 1400 = 1400 + 0.8x = x$

$$0.2x = 1400$$

$$x = 7000 = \text{CP}$$

And MP = Rs. $(x + 3500) = \text{Rs. } (7000 + 3500) = \text{Rs. } 10500$

$$\text{The reqd. \%} = \frac{3500 \times 100}{7000} = 50\%$$

Hence, option C is correct.

9. Let the marked price = Rs. $100x$

When 25% discount was offered then the SP = 75% OF $100x = \text{Rs. } 75x$

Let the CP = Rs. a then according to the question,

$$\frac{a}{75x} = \frac{2}{3}$$

$$3a = 150x$$

$$a = 50x$$

$$\text{The reqd. \%} = \frac{(100x - 50x) \times 100}{50x} = 100\%$$

Hence, option E is correct.

10. Let B invested for x months

The ratio of their share = $5 \times 12 : 6 \times x + 4 \times 12 = 60 : 6x : 48$

B's share is 25% so,

$$6x \div (60 + 6x + 48) = 25\%$$

$$24x = 108 + 6x$$

$$x = 6$$

Hence, option B is correct.



SmartKeeda

The Question Bank

प्रस्तुत करते हैं

TestZone

भारत की सबसे किफायती टेस्ट सीरीज़

अभी
जुड़ें

12 Month Plan

2018-19 All Test Series

@ Just

₹ 399/-

300+ फुल लेन्थ टेस्ट

- श्रेष्ठ विश्लेषण
- उत्कृष्ट विषय सामग्री
- बेजोड़ व्याख्या

अभी जुड़ें