



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 25

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

1. In a forest, 14% of the total number of animals are tiger. 40% of the remaining number of animals are elephants and the remaining are others. The difference between the number of tigers and the number of other animals in the forest is 7144. What is the difference between the number of elephants and the number of other animals in the forest?

- A. 3268 B. 3348 C. 3798 D. 2848 E. None of these

2. The sum of the present age of Mr. and Ms. Sinha is 54 years. At the time of their marriage, the sum of their age was 44 years. On the occasion of 15th marriage anniversary, the sum of the age of Mr. Sinha, Ms. Sinha, and their one daughter will become 86 years. What is the present age of their daughter?

- A. 1 year B. 2 years C. 0 year D. 3 years E. None of these

3. A person invests Rs. x in a bank under the simple interest for 10 years. After 5 years, he invests another amount which is 50% of the initial investments in the same bank. At the end of 10 years, he received Rs. 4500 interest. If instead of investing 50% more, he had withdrawn 50% and the bank had offered double of the initial rate of interest then he would have received Rs. 900 more. What is the value of x ?

- A. Rs. 6000 B. Rs. 9000 C. Rs. 3000 D. Rs. 7500 E. Can't be determined

4. In a mixture of milk and water solution, the concentration of milk is 40%. In what ratio should this mixture mixed with water so that in the new mixture, the concentration of water will become 80%?

- A. 2 : 1 B. 1 : 2 C. 1 : 1 D. 4 : 5 E. None of these

5. The diagonal of a square is $\sqrt{2}$ times of the diagonal of a rectangle area of which is 240 sq. meters. The ratio of length to breadth of the rectangle is 12 : 5. If the radius of the circle is equal to the perimeter of the square, then what is the circumference of the circle?

- A. 104π meters B. 208π meters C. 216π meters D. 108π meters E. None of these

6. 3 friends hired a horse for 5 hours for riding. If in one time, one person can ride for exactly one hour then what is the probability that all the friends ride the horse but none of them ride for more than two hours?

- A. $\frac{2}{27}$ B. $\frac{15}{81}$ C. $\frac{9}{100}$ D. $\frac{10}{27}$ E. None of these

7. A bag P contains 12 green and 15 blue balls. A ball is randomly drawn from the bag P and put in a bag Q which already contains red, blue and green balls in the ratio of 2 : 1 : 2 respectively. Now a ball is randomly drawn from the bag Q and the probability that the ball drawn is green is $\frac{65}{162}$. Find the total number of balls in the bag Q initially.

- A. 20 B. 25 C. 30 D. 35 E. None of these

8. Smith, John and Kevin started a business with initial investments of Rs. 7,500, Rs. 8,000 and Rs. 9,000, respectively. After one year Smith, John and Kevin made additional investments of Rs. 'x - 2000', Rs. 'x + 3000' and Rs. '2x + 2000' respectively. Find the profit share of Smith out of the total profit of Rs. 7,704 after two years.

- A. Rs. 2568 B. Rs. 2268 C. Rs. 1926 D. Rs. 1692 E. None of these

9. Boat A can cover 132 Km downstream and 78 Km upstream in 12 hours. Downstream speed of the boat B is 25% more than the speed of the boat B in still water. Boat B, whose speed is $(\frac{100}{3})\%$ more than the speed of boat A, goes downstream and comes back upstream up to a certain distance which is 60% of the distance covered by it downstream in 13 hours. Find the total distance covered by the boat B.

- A. 312 km B. 248 km C. 195 km D. 117 km E. None of these

10. The number of players in a basketball team having 6 players has to be selected from 9 males and 'x' females. What will be the value of 'x' if the number of ways to select the team having exactly two female players is 1890?

- A. 8 B. 9 C. 7 D. 5 E. 6

Correct Answers:

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

Explanations:

- 1.** Let the number of total animals in the forest = $100x$
The number of tiger = 14% of $100x = 14x$
The remaining number of animals = $100x - 14x = 86x$
The number of elephants = 40% of $86x = 34.4x$
The remaining number of animals i.e. the number of other animals = $86x - 34.4x = 51.6x$
According to the question, $51.6x - 14x = 37.6x = 7144$
 $x = 190$
The required difference = $51.6x - 34.4x = 17.2x = 17.2 \times 190 = 3268$
Hence, option A is correct.

- 2.** The sum of the present age of Mr. and Ms. Sinha is 54 years. At the time of their marriage, the sum of their age was 44 years

$$54 - 44 = \frac{10}{2} = 5 \text{ years before was their marriage}$$

On the occasion of 15th marriage anniversary, the sum of the age of Mr. and Ms. Sinha = $44 + 15 \times 2 = 44 + 30 = 74$ years

And the age of daughter = $86 - 74 = 12$ years.

Therefore, the present age of daughter = $12 - (15 - 5) = 12 - 10 = 2$ years

Hence, option B is correct.

- 3.** Let the bank offers $y\%$ per annum SI

Then, we know that, $SI = \frac{P \times R \times T}{100}$

$$x \times y \times \frac{5}{100} + 1.5x \times y \times \frac{5}{100} = 4500 \dots\dots (i)$$

$$12.5xy = 4500 \times 100$$

$$x \times 2y \times \frac{5}{100} + 0.5x \times 2y \times \frac{5}{100}$$

= $4500 + 900 = 5400$ ----- (ii) (he withdraws 50% of his initial investments i.e. $0.5x$ and the bank offers double the initial rate of interest i.e. $2y\%$)

$$15xy = 5400 \times 100$$

Since, we have two variable x and y we could not find the value of either x or y by solving this equation

Hence, option E is correct.

4. The concentration of water in the first mixture = $100 - 40 = 60\%$

By mixture and allegation method,



Therefore, $20 : 20 = 1 : 1$

Hence, option C is correct.

5. Let the length of the rectangle = $12x$ then the breadth of the rectangle = $5x$

$$\text{Area of the rectangle} = 12x \times 5x = 60x^2 = 240$$

$$x = 2 \text{ meters}$$

$$\text{The diagonal of the rectangle} = (12 \times 2)^2 + (5 \times 2)^2 = 26 \text{ meters}$$

$$\text{The diagonal of the square} = \sqrt{2} \times 26 \text{ meters}$$

$$\text{The side of the square} = \frac{\text{diagonal}}{\sqrt{2}} = 26 \text{ meters}$$

$$\text{The perimeter of the square} = 4 \times 26 = 104 \text{ meters} = \text{radius of the circle}$$

$$\text{The circumference of the circle} = 2\pi r = 2\pi \times 104 = 208\pi \text{ meters}$$

Hence, option B is correct.

6. Any of the three friends can ride the horse for each hour

$$\text{The number of total cases} = 3^5$$

Now, after 3 hours, two friends must be repeated

$$\text{That can be done in } {}^3C_2 \times \frac{5!}{2! \times 2!} = 90 \text{ ways}$$

$$\text{The required probability} = \frac{90}{3^5} = \frac{10}{27}$$

Hence, option D is correct.

7. Let, another bag contains $2x$ red, x blue and $2x$ green balls initially.

Case I: A green ball is drawn from the bag P

$$\text{Probability of drawing green ball from the bag Q} = \frac{\frac{12}{27} \times (2x + 1)}{5x + 1}$$

Case II: A blue ball is drawn from the bag P

$$\text{Probability of drawing green ball from the bag Q} = \frac{\frac{15}{27} \times (2x)}{5x + 1}$$

$$\text{So the probability of drawing a green ball from the bag} = \frac{\frac{12}{27} \times (2x + 1)}{5x + 1} + \frac{\frac{15}{27} \times (2x)}{5x + 1} = \frac{65}{162}$$

$$\frac{24x + 12 + 30x}{135x + 27} = \frac{65}{162}$$

$$\frac{54x + 12}{135x + 27} = \frac{65}{162}$$

$$8748x + 1944 = 8775x + 1755$$

$$27x = 189$$

$$x = 7$$

So, the total number of balls in the bag Q initially = $5 \times 7 = 35$

Hence, option D is correct.

8. Ratio of their investments = $(7500 + 7500 + x - 2000) : (8000 + 8000 + x + 3000) : (9000 + 9000 + 2x + 2000)$

$$= (13000 + x) : (19000 + x) : (20000 + 2x)$$

$$\text{Profit share of Smith} = \frac{13000 + x}{13000 + x + 19000 + x + 20000 + 2x} \times 7704$$

$$= \frac{13000 + x}{52000 + 4x} \times 7704$$

$$= \frac{13000 + x}{4(13000 + x)} \times 7704 = \frac{7704}{4} = 1926$$

So, the profit share of Smith = Rs. 1926

Hence, option C is correct.

9. Let the speed of boat B in still water = x Km/h
Let the speed of stream = y Km/h
Downstream speed of boat B = $x + y$ km/h
So according to question: $1.25x = x + y$
 $0.25x = y$
 $x = 4y$

So the speed of boat A in still water = $4y \div \left(1 + \frac{100}{300}\right) = 3y$ km/h

Downstream speed of boat A = $3y + y = 4y$ Km/h
Upstream speed of boat A = $3y - y = 2y$ Km/h
So according to question:

$$\frac{132}{4y} + \frac{78}{2y} = 12$$

$$\frac{33}{y} + \frac{39}{y} = 12$$

$$\frac{72}{y} = 12$$

$$y = 6$$

So the speed of stream = 6 Km/h

Speed of boat B in still water = $4 \times 6 = 24$ Km/h

Downstream speed of boat B = $24 + 6 = 30$ Km/h

Upstream speed of boat B = $24 - 6 = 18$ Km/h

Let the downstream distance covered by boat B = d Km

So the upstream distance covered by boat B = $0.60 \times d = 0.6d$ Km

So according to question:

$$\frac{d}{30} + \frac{0.6d}{18} = 13$$

$$\frac{d}{30} + \frac{0.1d}{3} = 13$$

$$\frac{d + d}{30} = 13$$

$$\frac{d}{15} = 13$$

$$d = 195$$

So the total distance covered by boat B = $195 + 0.60 \times 195 = 195 + 117 = 312$ Km

Hence, option A is correct.

10. Number of ways to select the team having exactly two female players = ${}^9C_4 \times {}^xC_2 = 1890$

$$126 \times \frac{x(x-1)}{2} = 1890$$

$$x^2 - x = 30$$

$$x^2 - x - 30 = 0$$

$$x^2 - 6x + 5x - 30 = 0$$

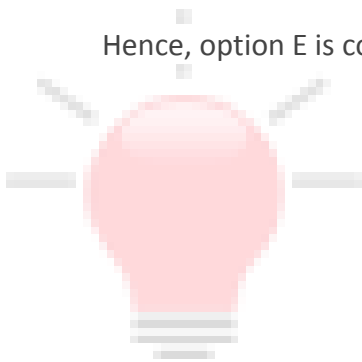
$$x(x-6) + 5(x-6) = 0$$

$$(x-6)(x+5) = 0$$

$$x = 6, -5$$

Number of players can't be negative, so the value of $x = 6$

Hence, option E is correct.



SmartKeeda
The Question Bank



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