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# Bank PO Mixed Maths Questions for IBPS PO Pre, IBPS Clerk, SBI PO Pre and SBI Clerk exams

## BANK PO MATHS QUIZ 13

Directions: Read the following questions carefully and choose the right answer.

1. In a parallelogram shaped field, one of its side is 15 meters and the length of the perpendicular distance between the opposite sides is 16 m. In the field, if wheat seeds were to sow at the rate of Rs. 15 per sq. meter, then how much money will be needed to sow wheat seeds in the field?

A. Rs. 1800

B. Rs. 3600

C. Rs. 2700

D. Rs. 4200

E. None of these

2. Some students had organized a party by taking contribution from each member. 75% of the total number of students had contributed 60% of the total funds collected and if the average of the total contribution of the funds was Rs. 100, then what was the average contribution of the remaining 25% of the students?

A. Rs. 180

B. Rs. 160

C. Rs. 175

D. Rs. 140

E. None of these

3. An inlet pipe P can fill a water tank in 12 hours less than that the time taken by other inlet pipe Q. The pipes P and Q together can fill the water tank in  $280/17$  hours. If pipe P can fill the water tank together with an outlet pipe R in 40 hours, then Pipe Q can fill the water tank together with the outlet pipe R in how many hours?

- A. 75 hours                      B. 70 hours                      C. 60 hours  
D. 80 hours                      E. None of these

**4. In a forest, there are some venomous snakes and some non-venomous snakes. An ayurvedic company executive goes to the forest to catch some venomous snakes then the probability that one venomous snake is caught is  $\frac{2}{17}$ . If in the forest there are total 153 snakes, then how many non – venomous snakes are there in the forest?**

- A. 134                              B. 133                              C. 135  
D. 149                              E. None of these

**5. A small slice from a circular shaped pizza of diameter 21 cm and thickness 4 cm was cut. If the small slice makes an angle of 30 degree at the centre of the pizza then what was the total volume (in  $\text{cm}^3$ ) of the remaining part of the pizza?**

- A. 1460.5                      B. 1270.5                      C. 1320.50  
D. 1120                              E. None of these

**6. What amount of water (in ml) should be added to reduce 7 ml lotion containing 70% alcohol to a lotion containing 35% alcohol ?**

- A. 35 ml                              B. 4 ml                              C. 7 ml  
D. 10.5 ml                              E. Can't be determined

**7. Before 6 months, when the value of \$ 1 was equal to Rs. 60, India was importing crude oil of Rs. 5.52 billion per month. Today, the value of \$ 1 is equal to Rs. x then India is importing crude oil of Rs. 6.21 billion per month. What is the value of x if**

today India is importing 10% less quantity than 6 months before and there were no changes in the price of crude oil in the international market?

- A. 72                                      B. 74                                      C. 75  
D. 80                                      E. None of these

8. Two runners A and B start running simultaneously from a point P around a circular park at the speed of 15 m per sec and 25 m per sec respectively in the opposite direction of each other. If the circumference of the park is 600 meters then at what distance from point P will they meet each other for the second time?

- A. 120 meters                              B. 150 meters                              C. 180 meters  
D. 200 meters                              E. 215 meters

9. The number of days taken by 16 men to complete a piece of work is 2 days less than that by 18 women to complete the same work. If the efficiency of one woman is 20% less than that of one man, then in how many days all 16 men and 18 women together can complete the same work?

- A.  $9\frac{9}{19}$  days                              B.  $9\frac{4}{17}$  days                              C.  $8\frac{1}{17}$  days  
D.  $9\frac{12}{19}$  days                              E. None of these

10. The cost price of three articles A, B, and C are in the ratio of 5 : 7 : 3 respectively and the selling price of these articles are in the ratio of 3 : 4 : 2 respectively. If each of the articles was sold

for the profit of Rs. 250 then what was the overall profit percentage?

A. 15%

B. 25%

C. 12.5%

D. 20%

E. None of these



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### Correct answers:

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

### Explanations:

1.

The boundary meets perpendicularly the opposite side it means it the perpendicular distance between the opposite sides.

The area of a parallelogram = base  $\times$  perpendicular distance between the opposite sides =  $15 \times 16 = 240$  sq. m

The total money required =  $240 \times 15 = \text{Rs. } 3600$

Hence, option B is correct.

2.

Let the number of students =  $100x$

Total money contributed =  $100y = 100 \times 100x = 10000x$  (because average is 100)

75% of  $100x = 75x$  contributed 60% of  $100y = 60y = 60 \times 100x = 6000x$

The remaining money =  $10000x - 6000x = 4000x$  contributed by remaining 25x students

The average contribution of remaining 25x students

$$= \frac{4000x}{25x} = 160$$

Hence, option B is correct.

**3.**

Let pipe P takes  $x$  hours then the pipe Q will take  $x + 12$  hours to fill the tank

$$\frac{1}{x} + \frac{1}{x + 12} = \frac{17}{280}$$

Solve the quadratic equation

$$(x + 12 + x)280 = 17(x^2 + 12x)$$

$$560x + 3360 = 17x^2 + 204x$$

$$17x^2 - 356x - 3360 = 0$$

By solving,  $x = 28$  or  $-7.06$

Both pipes are inlet therefore negative value is not possible

Let pipe R takes  $r$  hours to empty the tank, then

$$\frac{1}{28} - \frac{1}{r} = \frac{1}{40}$$

$$\frac{1}{28} - \frac{1}{40} = \frac{1}{r}$$

$$\frac{1}{r} = \frac{10 - 7}{280} = \frac{3}{280}$$

The time taken by pipe Q =  $x + 12 = 40$  hours

When, Q and R operate together then the time taken to fill the tank

$$= \frac{1}{40} - \frac{3}{280} = \frac{7-3}{280} = \frac{4}{280} = \frac{1}{70}$$

The time taken to fill the tank = 70 hours

Hence, option B is correct.

**4.**

Let the total number of venomous snakes = x

The probability to catch one venomous snake

$$= \frac{x}{153} = \frac{2}{17}$$

By solving, x = 18

The number of non – venomous snakes = 153 – 18 = 135

Hence, option C is correct.

**5.**

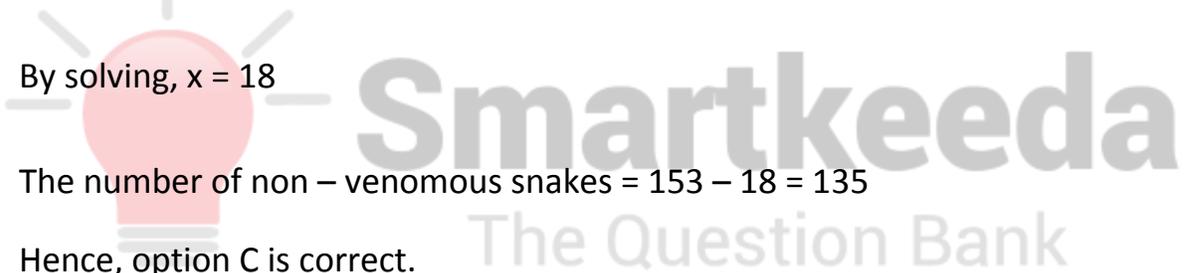
The volume of the pizza =  $\pi r^2 \times$  thickness

$$= \frac{22}{7} \times 10.5 \times 10.5 \times 4 = 1386 \text{ cm}^3$$

The volume of small slice of pizza

$$= \frac{\pi r^2 \theta}{360} \times \text{thickness}$$

$$= \frac{(22/7 \times 21 \times 21 \times 4 \times 30)}{4 \times 360}$$



$$= \frac{22 \times 3 \times 21}{12} = 115.5 \text{ cm}^3$$

The volume of the remaining part =  $1386 - 115.5 = 1270.5 \text{ cm}^3$

Hence, option B is correct.

**6.**

Let the required volume of water to be added =  $x \text{ ml}$

When added to  $7 \text{ ml}$  lotion, the total volume = " $7 + x$ "  $\text{ml}$

If the lotion contains  $70\%$  alcohol, then it contains  $30\%$  water

If it contains  $35\%$  alcohol, it contains  $65\%$  water.

By balancing the volume of water before and after dilution of the lotion, we get:

(Amount of water in lotion before dilution) + (amount of water added) =  
(amount of water in lotion after dilution)

( $30\%$  of  $7$ ) +  $x$  = ( $65\%$  of " $7 + x$ ")

$$\Rightarrow \left(30 \times \frac{7}{100}\right) + x = 65 \times \frac{7 + x}{100}$$

$$\Rightarrow 210 + 100x = 65 \times (7 + x)$$

$$\Rightarrow 210 + 100x = 455 + 65x$$

$$\Rightarrow 35x = 245$$

$$\Rightarrow x = 7$$

Hence, option (C) is correct.

**Alternate method:-**

7 ml lotion contains 70% alcohol , it means 4.9 ml alcohol is there.

Now we need to add water in the lotion to make the percentage of alcohol to 35

Since we are not adding any alcohol so the quantity of alcohol in the final lotion will be same as initial quantity of alcohol which is 4.9 ml

$$\text{So, } 35\% = 4.9$$

$$100\% = 14$$

It means in 14 ml lotion the alcohol is 35%.

Initially there was 7ml lotion but the final lotion required is 14ml.

So we need to add  $(14 - 7) = 7$ ml of water.

Hence option (C) is correct

7.

Before 6 months, let India was importing 100x litres crude oil

The, the total amount it was paying in dollars

$$= \frac{5.52}{60} = \$ 0.092 \text{ billion}$$

$$\text{The price of } x \text{ litres petrol} = \frac{0.092}{100} = \$ 0.00092 \text{ billion}$$

Today, India is importing 90x litres crude oil

$$\text{The total price of } 90x \text{ litres crude oil} = 0.00092 \times 90 = \$ 0.0828 \text{ billion}$$

But it is paying Rs. 6.21 billion

$$\frac{6.21}{x} = 0.0828$$

$$x = \frac{6.21}{0.0828} = 75$$

Hence, option C is correct.

**8.**

The relative speed of P and Q =  $15 + 25 = 40$  m/sec

The first time they will meet each other in  $600/40 = 15$  sec

Again, the second time they will meet each other in the next 15 seconds

In the second meeting, the distance from point P will be  $(25 - 15) \times 15 = 150$  meters

Or  $600 - 150 = 450$  meters

Hence, option B is correct.

**9.**

Let the efficiency of one man =  $5x$  then the efficiency of one woman = 20% less than  $5x = 4x$

We know that,

$$M_1D_1 = M_2D_2$$

$$16 \times 5x \times y = 18 \times 4x \times (y + 2)$$

$$8y = 144$$

$$y = 18$$

$$\text{Total work} = 16 \times 5x \times 18 = 80x \times 18$$



The total efficiency of 16 men and 18 women =  $16 \times 5x + 18 \times 4x = 80x + 72x = 152x$

The reqd. number of days =  $\frac{80x \times 18}{152x} = \frac{180}{19} = 9\frac{9}{19}$  days

Hence, option A is correct.

**10.**

Let us first take CP and SP of A and B (any two term)

$$\frac{5x + 250}{7x + 250} = \frac{3}{4}$$

$$20x + 1000 = 21x + 750$$

$$x = 250$$

The cost price of all the three articles =  $5x + 7x + 3x = 15x = 15 \times 250$

The total profit =  $250 \times 3 = 750$

$$\text{The reqd. \%} = \frac{750 \times 100}{15 \times 250} = 20\%$$

Hence, option D is correct.



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