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Mixed Maths Questions for SBI Clerk Mains, IBPS Clerk Mains, RBI Assistant Mains, LIC AAO, SBI PO Pre, IBPS PO Pre and RRB Scale I Pre Exams.

Bank PO Maths Quiz 42

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

1. The rate of interest for the first 2 years is 3% per annum, for the next 3 years is 8% per annum, and for the period beyond 5 years is 10% per annum. If the man withdraws total amount of Rs. 5320 after 6 years, find the sum he deposited?
- A. Rs. 4800 B. Rs. 4320 C. Rs. 2380 D. Rs. 3380 E. None of these
2. Three persons A, B, and C complete a piece of work in 6 days for which they are paid a sum of Rs. 480. If the efficiency of A, B and C are in ratio 4 : 5 : 7, then find the daily income of B?
- A. Rs. 25 B. Rs. 30 C. Rs. 150 D. Rs. 20 E. None of these
3. AB de Villiers smashes 86 runs against Australia in 16 balls. If he only scored in boundaries (fours and sixes) only, then find the maximum percent of runs he scored by hitting fours.
- A. 23.25% B. 26.4% C. 74.5% D. 28% E. None of these
4. Average marks obtained in English by 17 girls of a class is 35. The marks obtained by them is arranged in ascending order form and in Arithmetic progression. If the marks obtained by the 2nd, 6th, 9th, 12th and 16th position are removed from the table, then find the new average of marks obtained by the remaining girls in English.
- A. 33 B. 35 C. 37 D. Can't be determined E. None of these
5. On a Big Billion day sale, Google flagship mobile phone was available at a discount of 20% on Flipkart. The customers who are purchasing for the first time on Flipkart will get additional cashback of 10% on the billing amount. Suraj being 1st time user of Flipkart purchases the mobile phone for Rs. 36000, find the actual cost price of the mobile phone.
- A. Rs. 50000 B. Rs. 45000 C. Rs. 52250 D. Rs. 47250 E. None of these

6. Cost of a pen , marker and sharpener is rupees 15, 18 and 5 respectively. To increase his sales the shopkeeper sells sets of 5 pens and 3 markers for Rs. 100. Find the amount paid by the customer if he buys 15 pens, 10 marker and 2 sharpeners.

- A. Rs. 378 B. Rs. 356 C. Rs. 328 D. Rs. 367 E. None of these

7. A bag has 9 balls – each of them is either white, yellow or Black. In every trial, one ball is drawn and put back in the bag before the next trial. The probability of getting a white ball in two consecutive trials is $\frac{1}{81}$. The probability of getting two yellow balls in two consecutive trials is $\frac{4}{9}$. What is the probability of getting balls of three different colours in three consecutive trials?

- A. $\frac{4}{81}$ B. $\frac{4}{243}$ C. $\frac{4}{9}$ D. $\frac{8}{27}$ E. None of these

8. Rashmi and Pallavi can make a carpet in 3 days and 12 days more than the time taken if both of them worked together. Find the time in which Rashmi can make the carpet alone.

- A. 9 days B. 6 days C. 12 days D. 8 days E. None of these

9. A cruise was 100 km from the nearest shore when the captain discovered a leak which admits 5 tons of water every 10 minutes, 120 tons would suffice to sink the cruise. The captain came up with a temporary solution by fixing a pump which can throw 10 tons of water in an hour. Find the average sailing rate of the cruise that may just allow cruise to reach the nearest shore

- A. 14.28 km/h B. 20 km/hr C. 16.67 km/hr D. 6 km/hr E. None of these

10. Incomes of John and Kelvin are in the ratio 4 : 7 and their spending are in the ratio 6 : 11. If John saves one third of his income, then what will be the ratio of their savings.

- A. 12 : 13 B. 13 : 12 C. 18 : 19 D. 12 : 19 E. None of these

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Correct Answers:

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

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Explanations:

1. Let principal be Rs P.

S.I. = S.I for 1 & 2 year + S.I. for 3,4&5 year +S.I. for 6th year

$$\text{S.I.} = \frac{P \times R_1 \times T_1}{100} + \frac{P \times R_2 \times T_2}{100} + \frac{P \times R_3 \times T_3}{100}$$

$$\Rightarrow P + P \left(\frac{2 \times 3 + 3 \times 8 + 1 \times 10}{100} \right) = 5320$$

$$\Rightarrow P = \text{Rs. } 3800$$

Alternate:

S.I. for six years = 40%

140% of P = 5320

P = 3800

Hence, option A is correct.

2. Total amount earned by A ,B, and C in 6 days =Rs 480

The amount earned by them in 1 day = $\frac{480}{6} = \text{Rs } 80$

Amount of money earned is proportional to the amount of work done

Let work done by A ,B and C be 4x, 5x and 7x.

∴ Total work done by A,B and C together= 16x

Work done by B = 5x

Daily income of B = $\frac{5x}{16x} \times 80 = \text{Rs. } 25$

Hence, option A is correct.

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3. ABD scored his runs only in boundaries
Let the number of fours be X and numbers of sixes be Y

Total balls played =16

$$X + Y = 16 \text{I}$$

Total runs scores =86

$$4X + 6Y = 86 \text{II}$$

Solving I AND II we get

$$X = 5 \text{ and } Y = 11$$

Runs scored in boundaries = 20

$$\% \text{ of runs scored in boundaries} = \frac{20}{86} \times 100 = 23.25\%$$

Hence, option A is correct.

4. Total marks obtained by 17 girls = $35 \times 17 = 595$

Let the marks obtained by 17 girls be(in ascending order) be:

$$(a - 8d), (a - 7d), (a - 6d), (a - 5d), (a - 4d), (a - 3d), (a - 2d), (a - d), (a), (a + d), (a + 2d), (a + 3d), (a + 4d), (a + 5d), (a + 6d), (a + 7d), (a + 8d)$$

$$A = 35$$

Sum of 2nd, 6th, 9th, 12th and 16th term = $5a = 175$

$$\text{New average} = \frac{595 - 175}{12} = \frac{420}{12} = 35$$

Hence, option B is correct.

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5. Let the price of mobile be Rs. 100X

Price of mobile after 20% discount = Rs. 80X

Price after further 10% discount = Rs. 72X

$$72X = 36000$$

$$X = 500$$

$$\text{Cost price of mobile} = 100 \times 500 = 50000$$

Hence, option A is correct.

6. Cost of Pen (P) = Rs 15

Cost of Marker(M) = Rs 18

Cost of Sharpener(S) = Rs 5

He sells a set of 5 pen and 3 marker for Rs 100 (This is not the cost price, he sells this set at lower price just to increase the sales)

$$5P + 3M = 100 \dots\dots I$$

$$3 \times (5P + 3M = 100)$$

$$15P + 9M = 300$$

Multiplying I by 3 we get cost of 15 pens and 9 marker = Rs 300

The remaining 1 marker and 2 sharpeners are not part of set and they have to bought separately at cost price

$$\text{Cost of 1 Marker and 2 Sharpener} = 18 + 10 = 28$$

$$\text{Therefore, cost of 15 pens 10 marker and 2 sharpeners} = 300 + 28 = \text{Rs } 328$$

Hence, option C is correct.

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7. Probability of getting a white ball in 2 trails

$$= \{P(W)\}^2 = \frac{1}{81}$$

$$\{P(W)\} = \frac{1}{9}; \therefore \text{Number of white ball} = 1$$

Similarly, probability of getting yellow ball in two trails = $\{P(Y)\}^2 = \frac{4}{9}$

$$\{P(Y)\} = \frac{2}{3}; \therefore \text{Number of yellow ball} = 6$$

$$\text{Number of Black balls} = 9 - (6 + 1) = 2$$

$$P(B) = \frac{2}{9}; P(W) = \frac{1}{9}; P(Y) = \frac{6}{9}$$

There are six different ways of getting 3 different balls of 3 different colour. They are (B, Y, W), (Y, B, W), (Y, W, B), (W, Y, B), (B, W, Y), (W, B, Y)

$$\text{Probability of each six} = \frac{2}{9} \times \frac{1}{9} \times \frac{6}{9} = \frac{4}{243}$$

$$\text{Reqd. probability} = \frac{4}{243} \times 6 = \frac{8}{81}$$

Hence, option E is correct.

8. Let the time both of them together will take to make the carpet be x days

Time taken by Rashmi alone = x + 3 days

Time taken by Pallavi alone = x + 12 days

One day work when they both work together = Sum of their individual per day work

$$\frac{1}{x} = \frac{1}{x+12} + \frac{1}{x+3}$$

$$\frac{1}{x} = \frac{2x+15}{x^2+15x+36}$$

$$x^2 + 15x + 36 = 2x^2 + 15x$$

$$x = 6$$

Time taken by Rashmi to make carpet alone = 6 + 3 = 9 days

Hence, option A is correct.

9. In 1 hours water entering the ship = $(30 - 10)$ tons = 20 tons

Time take for 120 tons of water to enter the ship

$$= \frac{120}{20} = 6 \text{ hours}$$

Distance to travel in 6 hours = 100km

$$\text{Average speed} = \frac{100}{6} = 16.67 \text{ km/hr}$$

Hence, option C is correct.

10. Let the income of

John $4x$,

Kelvin $7x$

And expenditure be:

John $\rightarrow 6y$(i)

Kelvin $\rightarrow 11y$

John spending = John's earning – John's savings

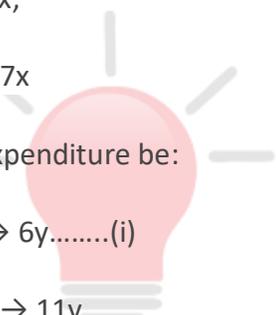
$$\text{John's expenditure} = 4x - \frac{4x}{3} = \frac{8}{3}x \text{(ii)}$$

(i) = (ii)

$$6y = \frac{8}{3}x \Rightarrow \frac{x}{y} = \frac{9}{4}$$

$$\text{Reqd. Ratio} = \frac{4x - 6y}{7x - 11y} = \frac{4x - \left(\frac{4}{9}x\right) 6}{7x - \left(\frac{4}{9}x\right) 11} = \frac{36 - 24}{63 - 44} = \frac{12}{19}$$

Hence, option D is correct.





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