

Mixed Quant questions for RRB Office Asst. Mains.

Directions (1-4) : Study the following information carefully and answer the questions given below :

Two trains A and B running at speeds 42 km/hr and 48 km/hr respectively are approaching each other. They are [A] km far from each other. After 12 minutes, a vulture starts flying from train A towards train B at the speed of [B] km/hr. It reverses its direction as soon as it reached B and starts filying towards A and continues this until trains A and B meet. The total distance covered by it is [C] km. The vulture meets train B (first time) in half the time train A meets train B (from the time vulture started). The distance between the points where train B meets vulture for the first time and train B meets train A is 72 km. The distance between trains A and B, when the vulture meets train B for the second time is [D].

1. What should come in place of A? A. 180 km B. 270 km C. 288 km D. 225 km E. 305 km 2. What will come in place of B? D. 96 A. 115 B. 145 C. 84 3. What should come in place of C? A. 288 km B. 340 km E. Can't be determined C. 270 km What should come in place of D? 4. A. 20.4 km B. 32.6 km C. 7.4 km D. 56.3 km E. 16.5 km

5. After the implementation of goods and services tax (GST), there is an increase in the price on local items by 12% and imported items by 15%. The present salary of Raman is Rs. 3570 which is equal to his expenditure. The ratio of his expenditure on local items and imported items is 3 : 7. How much should the salary be increased so that he can maintain his consumption to the same level?

A. 303.37	B. 513.77	C. 305.37	D. 503.37	E. None of these
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6. Mr. Fakir Chand invested a total sum of Rs. 32,000 in two schemes S1 and S2 for 2 years. S1 offers C.I. at the rate of 20% per annum and S2 offers S.I. at the rate of 24% per annum. He earned a total of Rs. 14892 as interest from both the schemes. Find the amount invested by him in S2.

A. Rs. 22880 B. Rs. 20850 C. Rs. 24000 D. Rs. 20300 E. Rs. 22

- 7. A ship, Titanic can travel 125000 meters along the stream in 1.25 hours. If speed of the ship in still water is 125/6 m/s, then find the time (in hours) taken by the ship to cover the same distance against the stream.
- A. $\frac{5}{4}$ hours B. $\frac{5}{2}$ hours C. $\frac{5}{3}$ hours D. 5 hours E. None of these
- 8. The CP of a Watch was Rs. x. There was a loss of 22% after selling the Watch at 40% discount. So, the shopkeeper had increased the marked price of the Watch by 40% but had allowed the same discount percent. If he earned Rs. 184 as profit after increasing the marked price, then find the value of x.

A. 2200 B. 2000 C. 1800 D. 2400 E. None of these

- 9. Hari Om is 8 years older than his brother Hari Ram. Hari Ram is 24 years younger than their mother. If the ratio between the ages of Hari Om and their mother is 7 : 11, what will be the age of Hari Ram after 3 years?
- A. 21 years B. 24 years C. 26 years D. 23 years E. None of these
- 10. A and B entered into a business and invested money in the ratio 2 : 3. C enters the partnership after 4 months and is to be provided Rs. X as monthly salary from the profit apart from his share. The profit at the end of the year is Rs. 240000. If the ratio of investments by B and C is 6 : 5 and B's share is Rs. 90000, then find the monthly salary (X) received by C.
- A. Rs. 3950 B. Rs. 5550 C. Rs. 5000 D. Rs. 3000 E. None of these

Directions (11-13) : Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer:

11. What is the speed of boat in still water?

Statement I: Amit can travel 150 km distance in 5 hours in downstream. **Statement II:** Amit can travel 48 km more distance in downstream than the distance travel in upstream in 3 hours.

A. The data in statements I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.

B. The data in statements II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

- C. The data in statements I alone or in statement II alone is sufficient to answer the question.
- D. The data in both the statements I and II is not sufficient to answer the question.
- E. The data in both the statements I and II together is necessary to answer the question.

12. Find the difference between the two numbers X and Y.

Statement I: X is 20 less than the 2 times of Y. **Statement II:** If 80 is added in the X, it becomes 3 times of Y.

A. The data in statements I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.

B. The data in statements II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

13. What is the total profit earned by Company D by selling 200 sarees?

Statement I: Company D mark the marked price on saree 20% more than the cost price that is Rs 700 and gave 10% discount on marked price.

Statement II: The selling price of 30 sarees is Rs 27000 after given the discount of 20% on marked price.

A. The data in statements I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.

B. The data in statements II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

Directions (14-15) : Directions: Each of the questions below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer:

14. What is the present age of Rahul?

Statement I: At the time of marriage Rahul's age was 25 years.

Statement II: The average age of Rahul and Rahul's wife at the time of marriage was 24 years. **Statement III:** The difference between the present ages of Rahul and his son is 24 years.

A. The data in statements I alone is sufficient to answer the question, while the data in statement II and III is not sufficient to answer the question.

B. The data in statements II alone is sufficient to answer the question, while the data in statement I and III is not sufficient to answer the question.

C. The data in statements I alone or in statement II alone or in statement III alone is sufficient to answer the question.

D. The data in all the statements I, II and III is not sufficient to answer the question.

E. The data in all the statements I, II and III together is necessary to answer the question.

15. What is the ratio of the volume of the cube to the volume of the cuboid?

Statement I: The Total Surface Area of the cuboid is 352 cm² and the ratio of the length, breadth and height of the cuboid is 3 : 2 : 1.

Statement II: The Total Surface Area of the cube is 726 cm².

Statement III: The length of the cuboid is 1.5 times of the breadth of the cuboid and 3 times of the height of the cuboid. The difference between the height and the length of the cuboid is 8cm.

A. The data in statements I alone is sufficient to answer the question, while the data in statement II and III is not sufficient to answer the question.

B. The data in statements II and III is sufficient to answer the question, while the data in statement I is not sufficient to answer the question.

C. The data in statements I and II or in statement II and III is sufficient to answer the question.

D. The data in all the statements I, II and III is not sufficient to answer the question.

E. The data in all the statements I, II and III together is necessary to answer the question.

Directions (16-20) : Study the following pie and table chart carefully and answer the questions given below :

The pie chart show the percentage of the students who took part in different activities and table shows the ratio of the boys and girls.



16.	What is the ratio of the boys who participate in craft and singing together and the girls who participate in Dancing and Drawing together?				
A. 49 :	61	B. 51 : 62	C. 40 : 51	D. 62 : 41	E. None of these
17.	What is the	e average number o	of boys participate	in all activity?	
A. 469)	B. 502	C. 453	D. 463	E. 526
18.	If 25% of th the student students w	e students who pa ts who participate ho participate in oi	rticipate in Dancin in Craft, also partic nly Dancing and on	g, also participate i ipate in Dancing, fi ly Craft.	n Craft and 20% of nd the ratio of the
A) 7 : 3	8	B. 2 : 3	C. 11 : 10	D. 13 : 17	E. None of these
19.	The numbe participate	er of boys who pa in Acting?	rticipate in Ancho	ring is what perce	nt of the girls who
A. 85%	6	В. 90%	C. 92%	D. 75%	E. None of these
20.	20. If the age of the 50% of the boys participate in Acting and 40% of the girls participate in Acting is below 16 years, find the number of students whose age is above 16 years participate in Acting.				
A. 650		B. 465	c. 684 e Que	D. 55601 Bai	E. None of these
21. Monthly salary of Jamal is 1/4 th of his father's monthly salary. Jamal's brother's monthly salary is 2/5 th of their father's monthly salary. Jamal's brother pays Rs. 12,800 as home loan which is 1/4 th of his monthly salary. Savings and expenses out of the monthly salary of Jamal is in the ratio of 3 : 5. What is Jamal's saving each month?					
A. Rs.	12,000	B. Rs. 10,600	C. Rs. 10,400	D. Rs. 12,600	E. Rs. 12,400
22.	22. A shopkeeper mixed Soybean at Rs. 12 per kg with Soybean at Rs. 9 per kg in a ratio of "a : b" and sold the mixture at Rs. 11 per kg to have a profit of 12.5% . The value of "a : b" is-				
A. 7 : 2	20	B. 9 : 12	C. 1 : 2	D. 3 : 4	E. None of these
23. Abhishek wants to buy a 11000 mAh power bank on a condition that he will pay Rs. 500 at the time of buying, Rs. 425 at the end of 1 year and Rs. 289 at the end of second year. If the compounded interest rate is 6.25%, then what is the present value of power bank?					
A. Rs.	1150	B. Rs. 1050	C. Rs. 1156	D. Rs. 1256	E. Rs. 1080

24.	4. In an examination there are 4 subjects. Maahi secures 60% marks in Maths out of 80 marks, 75% marks in English out of 60 marks, 50% marks in Hindi out of 90 marks. If she wants to secure 60% marks in all 4 subjects, How many percent marks does she require in science out of 70 marks?				
A. 60%	б В. 50	1%	C. 6%	D. 75%	E. 82%
25.	The incomes of A in the ratio 8 : 7 on food and rest	Amitabh and S . If each saves : on dress, the	Shahid are in the ra Rs. 10000 and Am n find the amount	atio 13 : 12 and the itabh spends 40% o that Amitabh spen	ir expenditures are of the expenditures t on dress.
A. Rs.	6400 B. Rs	. 9600	C. Rs. 9000	D. Rs. 8000	E. None of these
Direc	tions (26-30) : Wh	at will come i	n place of question	mark (?) in the fol	lowing series?
26.	15, 17, 26, 4	7, 86, ?			
A. 132	B. 14	9	C. 169	D. 172	E. 152
27.	8, 39, 79, 39	4, 789, ?			
A. 214	9 B. 35	42	C. 2862	D. 3944	E. None of these
28.	47, 58 <mark>, 7</mark> 1	., 79,	⁹⁵ he [?] Oue	stion Bar	hk
A. 108	B. 10	17	C. 105	D. 109	E. None of these
29.	7, 9, 12,	48, ?, 890)		
A. 128	B. 19	0	C. 172	D. 168	E. None of these
30.	3, 9, 24, 57	', ?, 267,	552		
A. 121	B. 11	.8	C. 114	D. 126	E. None of these

Directions (31-35) : Study the following table chart carefully and answer the questions given below :

The table chart given below gives the information about human resource of SBI bank across eight states of India.

States	States Total Number of Branches		The respective ratio of male and female employees	Percentage of post graduate employees	
Bihar	196	4488	7:5	75%	
Utter Pradesh	205	4595	3:2	40%	
Delhi	98	2205	11:10	60%	
Madhya Pradesh	198	4752	13:11	50%	
Maharashtra	168	3328	17 : 15	25%	
Karnataka	152	3680	11:9	55%	
Andhra Pradesh	84	1485	8:7	60%	
Kerala	102	2296	20:21	25%	
A. 14808 : 12021 32. In which c	B. 14807 : 12021	C. 14808 : 12023	D. 14809 : 12025	E. None of these	
32. In which c	of the following st	lates, the total numb	per of post graduate	es is second highest?	
A. Madhya Pradesh	B. Bihar	C. Karnataka	D. Uttar Pradesh	E. None of these	
33. What is the Utter Prace Karnataka	33. What is the difference between the sum of post graduate employees in states Bihar, Utter Pradesh, Delhi together and the number of post graduate employees in states Karnataka, Andhra Pradesh, Kerala together?				
A. 3039	B. 3029	C. 3028	D. 3038	E. None of these	
34. It is given that across other states of India SBI has 200% number of branches than it has in the given eight states and the average number of employees per branch across India is 32. Then find how many number of total employees SBI has in India?					
A. 115588	B. 124488	C. 115488	D. 123498	E. None of these	
35. Which of	Which of the following states has highest number of total employees per branch?				
A. Karnataka	B. Uttar Pradesh	C. Madhya Pradesh	n D. Bihar	E. None of these	
36. A commit probabilit	6. A committee of 5 members is to be made out of 4 women and 5 men. What is the probability that the committee has at least 3 women?				
A. 3/7	B. 9/17	C. 5/14	D. 2/11	E. None of these	

37. A and B can separately do a work in 20 and 15 days respectively. They worked together for 6 days after which B was replaced by C. If the work is finished in next four days, the number of days in which C alone can do the work will be-

A. 54 daysB. 45 daysC. 35 daysD. 40 daysE. None of these

38. Two trains, A and B start from stations X and Y towards each other. They take 3 hours 22.5 mins and 2 hours 40 mins to reach Y and X respectively after they meet. If train A is moving at 48 km/hr, then the speed of train B is

A. Karnataka B. Uttar Pradesh C. Madhya Pradesh D. Bihar E. None of these

39. The length of a rectangle, breadth of the same rectangle and the side of a square are in the ratio 12 : 9 : 11. The perimeter of the square is 264 cm. Find the area of the rectangle, if the length of the rectangle is increased by 25% and the breadth of the rectangle is decreased by 25%.

A. 3604 cm^2 B. 5126 cm^2 C. 3966 cm^2 D. 4126 cm^2 E. None of these

C. Rs. 108

40. Two wage workers, Nick and Priyanka were employed to complete a work. The daily wages of the both are Rs. 4.5 and Rs. 3.5 respectively. When Nick finishes the work alone, he gets a total wage of Rs. 90. When Priyanka finishes the same work alone, she gets total wage of Rs. 105. If both of them do it together, what will be the total cost of work?

A. Rs. 120

B. Rs. 84

D. Rs. 96

E. None of these



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Correct Answers:

1	2	3	4	5	6	7	8	9	10
С	E	D	В	D	D	В	В	D	С
11	12	13	14	15	16	17	18	19	20
E	E	Α	D	С	В	С	Α	В	E
21	22	23	24	25	26	27	28	29	30
Α	Α	С	Α	В	В	D	D	С	D
31	32	33	34	35	36	37	38	39	40
Α	А	D	С	А	С	D	С	Е	D





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Explanations:

1. Let speed of vulture be a km/hr

Relative speed of A and B = (42 + 48) = 90 km/hr

Relative speed of vulture and B (when vulture approaches B) = a + 48

Given: Vulture reaches B in half time as A from the point vulture starts

Let x be the distance travelled

$$\frac{X}{90} = 2 \times \left[\frac{X}{48 + a}\right]$$

180 = 48 + a

a = 132 km/hr (Blank B)

Distance between B's meeting point with vulture and A is 72

Time taken by B = $\frac{72}{48}$ = 1.5 hours

This 1.5 hour will be half the time as Vulture reaches B in half time as A from the point vulture starts

So, total times for A to meet B (from the point when Vulture started) = $2 \times 1.5 = 3$ hours

Hence total meeting time = $3 + \frac{12}{60} = 3.2$ hours

Distance (blank A) = 3.2 × (48 + 42) = 288 km

Hence, option C is correct.

2. Let speed of vulture be a km/hr

Relative speed of A and B = (42 + 48) = 90 km/hr

Relative speed of vulture and B (when vulture approaches B) = a + 48

Given: Vulture reaches B in half time as A from the point vulture starts

Let x be the distance travelled

$$\frac{x}{90} = 2 \times \left[\frac{x}{48 + a}\right]$$

180 = 48 + a a = 132 km/hr (Blank B) Hence, option E is correct.

3. Let speed of vulture be a km/hr

Relative speed of A and B = (42 + 48) = 90 km/hr

Relative speed of vulture and B (when vulture approaches B) = a + 48

Given: Vulture reaches B in half time as A from the point vulture starts

Let x be the distance travelled

$$\frac{x}{90} = 2 \times \left[\frac{x}{48 + a}\right]$$

180 = 48 + a

a = 132 km/hr (Blank B)

Distance between B's meeting point with vulture and A is 72

Time taken by B = $\frac{72}{48}$ = 1.5 hours

This 1.5 hour will be half the time as Vulture reaches B in half time as A from the point vulture starts So, total times for A to meet B (from the point when Vulture started) = $2 \times 1.5 = 3$ hours Distance travelled by vulture = $132 \times 3 = 396$ km (Blank C) Hence, option D is correct.

4. Let speed of vulture be a km/hr

Relative speed of A and B = (42 + 48) = 90 km/hr

Relative speed of vulture and B (when vulture approaches B) = a + 48

Given: Vulture reaches B in half time as A from the point vulture starts

Let x be the distance travelled

$$\frac{x}{90} = 2 \times \left[\frac{x}{48 + a}\right]$$

180 = 48 + a a = 132 km/hr (Blank B)

Distance between B's meeting point with vulture and A is 72 Time taken by B = $\frac{72}{48}$ = 1.5 hours This 1.5 hour will be half the time as Vulture reaches B in half time as A from the point vulture starts So, total times for A to meet B (from the point when Vulture started) = $2 \times 1.5 = 3$ hours Distance travelled by vulture = $132 \times 3 = 396$ km (Blank C) Distance between A and B (when vulture starts) = $3 \times (48 + 42) = 270$ km Vulture meets B in 1.5 hours (given) Distance between A and B when Vulture meets B for the first time = $(3 - 1.5) \times (48 + 42) = 135$ Time taken by Vulture to reach till A = $\frac{135}{132 + 42} = \frac{45}{58}$ hours Distance between A and B when Vulture meets A (after return) = $135 - \frac{45}{100} \times 90 = 65.2$ km Time taken for vulture to travel 65.2 (to meet B for second time) = $\frac{65.2}{180} = \frac{163}{450}$ hours Distance (Blank D) = $65.2 - \frac{163}{450} \times 90 = 32.6$ km Hence, option B is correct. The Question Bank Let the expenditure on local items and imported items be 3x and 7x respectively

 \therefore According to the question,

5.

⇒ 3x + 7x = 3570⇒ 10x = 3570⇒ x = 357∴ Expenditure on local items = Rs. $3 \times 357 = Rs. 1071$ And expenditure on imported items = $7 \times 357 = Rs. 2499$ New expenditure = 112% of Rs. 1071 + 115% of Rs. 2499 ⇒ $1.12 \times 1071 + 1.15 \times 2499$ ⇒ 1199.52 + 2873.85⇒ 4073.37 = New salaryIncrease in income = New salary – Old salary ⇒ 4073.37 - 3570⇒ Rs. 503.37Hence, option D is correct. **6.** Let amount invested in S2 = Rs. x

Amount invested in S1 = Rs. 32000 - x

Compound interest = P1 $\left[\left(1 + \frac{R}{100}\right) - 1\right]$

Simple Interest =
$$\frac{P_2T_2}{100}$$

According to the question,

P1
$$\left[\left(1 + \frac{R_1}{100} \right)^T - 1 \right] + \frac{\frac{P_2 K_2 I_2}{100}}{100} = 14892$$

 $\Rightarrow (32000 - x) \left| \begin{array}{c} 1 + \frac{20}{100} \\ 100 \end{array} - 1 + \frac{48x}{100} = 14892 \right]$

On solving the above equation we get the value of x = Rs. 20300

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Hence, option D is correct.

7. 125000 meters = 125 km

$$\frac{125}{6}$$
 m/s = $\frac{125}{6} \times \frac{18}{5}$ = 75 km/

Let, speed of stream be x km/h.

 \therefore Speed of the ship along the stream = (75 + x) km/h

 \therefore Speed of the ship against the stream = (75 – x) km/h

According to question,

 $\Rightarrow 1.25 \times (75 + x) = 125$ $\Rightarrow 93.75 + 1.25x = 125$ $\Rightarrow 1.25x = 32.75$ $\Rightarrow x = 25$

 \therefore Speed of stream = 25 km/h.

 \therefore Speed of the ship against the stream = 75 – 25 = 50 km/h

$$\therefore \text{ Reqd. time} = \frac{125}{50} \text{ hours} = \frac{5}{2} \text{ hours}$$

Hence, option B is correct.

8. Let MP of the Watch be y. :...78% of x = 60% of y $\Rightarrow \frac{39x}{50} = \frac{3y}{5}$ $\Rightarrow x = \frac{10y}{13}$ And, 60% of 140% of y – x = 184 $\Rightarrow \frac{21\gamma}{25} - x = 184$ $\Rightarrow \frac{273y - 250y}{325} = 184$ \Rightarrow 23y = 184 × 325 : CP of the Watch = $x = \frac{10y}{13} = \frac{10 \times 2600}{13} = Rs. 2000$ The Question Bank Hence, option B is correct. 9. Let the age of Hari Ram be 'a'. Hari Om's age = a + 8Mother's age = a + 24Thus, $\frac{a+8}{a+24} = \frac{7}{11}$ 11a + 88 = 7a + 168 \Rightarrow 4a = 80 ⇒ a = 20 Thus, Hari Ram's age 3 years later = 23 years Hence, option D is correct.

10. C's monthly salary = Rs. x

Total profit = Rs. 240000

Therefore, profit to be shared = Rs. (240000 - 8x)

Ratio of investments by A and B = 2 : 3 = 4 : 6

Ratio of investments by B and C = 6 : 5

Ratio of investments by A, B and C = 4 : 6 : 5

Profit will be shared in the ratio (4×12) : (6×12) : $(5 \times 8) = 6:9:5$

Given, B's share = 90000

$$\Rightarrow \frac{9}{20} \times (240000 - 8x) = 90000$$

 $\Rightarrow 240000 - 8x = 200000$

- ⇒ 8x = 40000
- \Rightarrow x = Rs. 5000

Hence, option C is correct.

11. Let the speed of boat in still water = x km/h, speed of stream = y km.

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Statement I: Downstream speed = x + y

$$x + y = \frac{150}{5}$$

x + y = 30 km/h

Statement I alone is not sufficient to give the answer.

Statement II: Let Distance = D km, time = 3 hours

$$3(x + y) - 3(x - y) = 48$$

3x + 3y - 3x + 3y = 48

6y = 48

Statement II alone is not sufficient to give the answer.

Statement I + Statement II:

x + y = 30, y = 8

x = 30 - 8 = 22

Speed of boat in still water = 22 km/h

Hence, option E is correct.

12. Numbers = X, Y

Statement I:

 $X = 2 \times Y - 20$

Statement I alone is not sufficient to answer the question.

Statement II:

X + 80 = 3 × Y Statement II alone is not sufficient to answer the question.

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Statement I + Statement II:

 $X = 2 \times Y - 20 \dots 1$

 $X + 80 = 3 \times Y \dots 2$

Equation 1 – Equation 2

Y = 60

Put the value of Y in Equation 1.

 $X = 2 \times 60 - 20$

X = 120 - 20

X = 100

Difference = 100 - 60 = 40

Both the Statement I and Statement II are necessary to answer the question.

Hence, option E is correct.

13. Statement I:

Cost price = Rs 700, marked price = 700 × 120% = Rs 840

Selling price = 840 × 90% = Rs 756

Profit (1 saree) = 756 - 700 = Rs 56

Profit (200 saree) = 56 × 200 = Rs 11200

Statement I alone is sufficient to give the answer.

Statement II:

Selling price of 30 sarees = Rs 27000

Selling price of 1 saree = Rs 900

Marked price = $\frac{900}{80\%}$ = 1125

Statement II alone is not sufficient to answer the question.

Hence, option A is correct.

14. Statement I:

The age of Rahul at the time of marriage = 25 years.

Statement I alone is not sufficient to answer the question.

Statement II:

Total age of Rahul and his wife at the time of marrige = $24 \times 2 = 48$ years.

Statement II alone is not sufficient to answer the question.

Statement III:

Difference between the ages of Rahul and his son = 24 years.

Statement III alone is not sufficient to answer the question.

All the statements are not sufficient to answer the question because in these statements it is not given that when Rahul got married

The Question Bank

Hence, option D is correct.

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15.
       Statement I: Total Surface Area of cuboid = 2 (lb + bh + hl)
       Let length = 3x, breadth = 2x, height = x
       352 = 2 (3x \times 2x + 2x \times x + x \times 3x)
       176 = (6x^2 + 2x^2 + 3x^2)
       176 = 11x^2
       x^2 = 16
       x = 4
       Length = 12cm, Breadth = 8cm, Height = 4cm
       Volume = lbh
       = 12 \times 8 \times 4 = 384 cm<sup>3</sup>
       Statement II: Total Surface Area of cube = 6s<sup>2</sup>
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       384 = 6s^2
       s^2 = 64
                                              The Question Bank
       s = 8 cm
       Volume of the cube = s^3 = 8^3 = 512 cm<sup>3</sup>
       Statement III: Height of the cuboid = x cm, length = 3x, breadth = 2x
       Difference = 3x - x
       8 = 2x
       x = 4
       length = 12cm, breadth = 8cm, height = 4cm
       Volume = lbh = 12 \times 8 \times 4 = 384 cm^3
       We can solve this question with the help of either statement I and II or statement II and III.
       Hence, option C is correct.
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16. Boys who participate in Craft = $5400 \times 15\% \times 3/5 = 486$ Boys who participate in Singing = $5400 \times 18\% \times 4/9 = 432$ Girls who participate in Dancing = $5400 \times 14\% \times 4/7 = 432$ Girls who participate in Drawing = $5400 \times 19\% \times 2/3 = 684$ Ratio = 486 + 432 : 432 + 684 = 918 : 1116 = 51 : 62 Hence, option B is correct. 17. Boys participate in Singing = $5400 \times 18\% \times 4/9 = 432$ Boys participate in Dancing = $5400 \times 14\% \times 3/7 = 324$ Boys participate in Acting = $5400 \times 22\% \times 6/11 = 648$ Boys participate in Craft = $5400 \times 15\% \times 3/5 = 486$ keeda Boys participate in Drawing = $5400 \times 19\% \times 1/3 = 342$ Boys participate in Anchoring = $5400 \times 12\% \times 3/4 = 486$ Average = (432 + 324 + 648 + 486 + 342 + 486) / 6 = 2718 / 6 = 453

- Hence, option C is correct.
- **18.** Students who participate in Dancing = 5400 × 14% = 756

25% of the Students who participate in Dancing also participate in Craft = 756 × 25% = 189

Students who participate in Craft = 5400 × 15% = 810

20% of the Students who participate in Craft also participate in Dancing = 810 × 20% = 162

Students who only participate in Dancing = (756 + 162) - (162 + 189) = 567

Students who only participate in Craft = (810 + 189) – (162 + 189) = 648

Ratio = 567 : 648 = 7 : 8

Hence, option A is correct.

19. Boys participate in Anchoring = $5400 \times 12\% \times 3/4 = 486$ Girls participate in Acting = $5400 \times 22\% \times 5/11 = 540$ percent = $486/540 \times 100 = 90\%$ Hence, option B is correct.

Boys Participate in Acting = 5400 × 22% × 6/11 = 648
Age below 16 = 648 × 50% = 324
Girls participate in Acting = 5400 × 22% × 5/11 = 540
Age below 16 = 540 × 40% = 216
Age above 16 = (648 - 324) + (540 - 216) = 324 + 324 = 648

Hence, option E is correct.

21. Jamal's brother's monthly salary = $12800 \times 4 = \text{Rs.} 51200$ Their father's monthly salary = $51200 \times \frac{5}{2} = \text{Rs.} 128000$

Jamal's monthly salary = $\frac{1}{4} \times 128000$ = Rs. 32000

Jamal's monthly savings = $32000 \times \frac{3}{8}$ = Rs. 12000

Hence, option A is correct.

22. Let the amounts of the two types of Soybean be 'a' and 'b' kg respectively.

Cost price = 12a + 9bSelling price = 11a + 11bGain = SP - CP = (11a + 11b) - (12a + 9b) = 2b - a $\therefore 2b - a = (12a + 9b) \times \frac{12.5}{100} \Rightarrow (12a + 9b) \times \frac{1}{8}$ $\Rightarrow 16b - 8a = 12a + 9b$ $\Rightarrow 7b = 20a$ $\Rightarrow a : b = 7 : 20$ Hence, option A is correct. **23.** Let the present value of power bank = Rs. x

After paying Rs. 500 Rest cost = Rs. (x - 500)

 $\therefore \text{ Compounded amount of this cost for 1 year} = (x - 500) \times \left(1 + \frac{6.25}{100}\right) = \frac{17}{16} (x - 500)$

Now, rest cost after paying Rs. $425 = \frac{17}{16} (x - 500) - 425$

: Compounded amount for next year

$$= \left[\frac{17}{16} \left(x - 500\right) - 425\right] \times \left(1 + \frac{6.25}{100}\right)$$
$$= \frac{17}{16} \left[\frac{17}{16} \left(x - 500\right) - 425\right]$$

24.

Now, after paying Rs. 289, All instalments are completed,

$$\therefore \frac{17}{16} \frac{17}{16} (x - 500) - 425 = 289$$

$$\Rightarrow 17 (x - 500) - 425 \times 16 = 272$$

$$\Rightarrow 17x - 8500 - 6800 = 4352$$

$$\Rightarrow 17x = 19652$$

$$\Rightarrow x = 1156$$

$$\therefore \text{ Present value of power bank = Rs. 1156}$$

Hence, option C is correct.

Marks in maths = 80 × 60% = 48
Marks in English = 60 × 75% = 45
Marks in Hindi = 90 × 50% = 45
Total marks = (80 + 60 + 90 + 70) × 60% = 300 × 60% = 180
Marks in Science = 180 - (48 + 45 + 45) = (180 - 138) = 42
Marks % = (42/70) × 100 = 60%
Hence, option A is correct.

25. According to the question,

(13x - 10,000) : (12x - 10000) = 8 : 7

7 (13x - 10,000) = 8 (12x - 10,000)

91x - 70,000 = 96x - 80,000

96x - 91x = 80,000 - 70,000

5x = 10,000

x = 2000

Amitabh's expenditure = Rs. (26,000 - 10,000) = Rs. 16,000

Expense on dress = 16,000 × 60% = Rs.9600

Hence, option B is correct.

26.

	í _ C	moutlead
Series <mark>Pattern G</mark>	iven Series	omarikeeu
15	15	
$15 + (1^3 + 1) = 17$	17	The Overstien Deale
15 + (2 ³ + 3) = 26	26	I ne Question Bank
15 + (3 ³ + 5) = 47	47	
15 + (4 ³ + 7) = 86	86	
$15 + (5^3 + 9) = 149$	149 🗸	

Hence, option (B) is correct.

27.

Series Pattern	Given Series
8	8
8 × 5 – 1 = 39	39
39 × 2 + 1 = 79	79
79 × 5 – 1 = 394	394
394 × 2 + 1 = 789	789
789 × 5 – 1 = 3944	1 3944 v

Hence, option (D) is correct.

28.

Series Pattern	Given Series
47	47
47 + (7 + 4)	58
58 + (5 + 8)	71
71 + (7 + 1)	79
79 + (7 + 9)	95
95 + (9 + 5)	109

 \checkmark

Hence, option D is correct.

29.

Series Pattern	Given Series
7	7
7 × 1 + 1 × 2	9
9×2-2×3	12
$12 \times 3 + 3 \times 4$	48
$48 \times 4 - 4 \times 5$	172
$172 \times 5 + 5 \times 6$	890

Hence, option C is correct.

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30.

Series Pattern	Given Series
3	3
3 × 2 + 3	9
9 × 2 + 6	24
24 × 2 + 9	57
57 × 2 + 12	126
126 × 2 + 15	267
267 × 2 + 18	552

Hence, option D is correct.

31. Total numbe of male

$$=\frac{7}{12} \times 4488 + \frac{3}{4} \times 4595 + \frac{11}{21} \times 2205 + \frac{13}{24} \times 4752 + \dots$$

 $\dots + \frac{17}{32} \times 3328 + \frac{11}{20} \times 3680 + \frac{8}{15} \times 1485 + \frac{20}{41} \times 2296$

= 2618 + 2757 + 1155 + 2574 + 1768 + 2024 + 792 + 1120 = 14808

The total number of employees = 26829 The total number of female = 26829 – 14808 = 12021 The required ratio = 14808 : 12021 Hence, option A is correct.

32. The total number of post graduates in Bihar = 75% of 4488 = 3366 The total number of post graduates in UP = 40% OF 4595 = 1838 The total number of post graduates in Delhi = 60% of 2205 = 1323 The total number of post graduates in MP = 50% of 4752 = 2376 The total number of post graduates in Maharashtra = 25% of 3328 = 832 The total number of post graduates in Karnataka = 55% of 3680 = 2024 The total number of post graduates in AP = 60% of 1485 = 891 The total number of post graduates in Kerala = 25% of 2296 = 574 It is second highest in MP Hence, option A is correct.

33. The total number of post graduates in Bihar = 75% of 4488 = 3366

The total number of post graduates in UP = 40% OF 4595 = 1838

The total number of post graduates in Delhi = 60% of 2205 = 1323

Sum = 3366 + 1838 + 1323 = 6527

The total number of post graduates in Karnataka = 55% of 3680 = 2024

The total number of post graduates in AP = 60% of 1485 = 891

The total number of post graduates in Kerala = 25% of 2296 = 574

Sum = 3489

The required difference = 6527 - 3489 = 3038

Hence, option D is correct.

- 34. The total number of branches in the given eight states = 1203 The total number of branches in other states = 200% of 1203 = 2406 The total number of branches in India = 1203 + 2406 = 3609 the average number of employees per branch across India is 32 so, the total number of employees across India = 3609 × 32 = 115488 Hence, option C is correct.
- 35. Karnataka has highest number of total employees per branch. Hence, option A is correct.
- 36. Favourable outcomes,

 $3w + 2m = {}^{4}C_{3} \times {}^{5}C_{2} = 4 \times 5 \times 4/2 = 40$ $4w + 1m = {}^{4}C_{4} \times {}^{5}C_{1} = 1 \times 5 = 5$

Total outcomes = ${}^{9}C_{5}$ = (9 × 8 × 7× 6) / (4 × 3 × 2 × 1) = 126 Probability = (40 + 5) / 126 = 45/126 = 5/ 14

Hence, option C is correct.

37. Let A takes p days to complete a work while B takes q days to complete the same work

 \Rightarrow p = 20 days and q = 15 days (Given in the question)

Then their one day's work are 1/p and 1/q respectively

It means their one day work is $\frac{1}{r}$ + $=\frac{1}{20}$ + $\frac{1}{15}$ = $\frac{7}{60}$ (i)

 \Rightarrow work done by both of them in 6 days = $\frac{7}{60} \times 6 = \frac{7}{10}$

 \Rightarrow remaining work = $1 - \frac{7}{10} = \frac{3}{10}$

Let C takes 'r' days to complete the work.

It means his one day work will be (1/r)

Since, C working with A completes the remaining work (3/10) in 4 days

$$\Rightarrow \left(\frac{1}{p} + \frac{1}{r}\right) \times 4 = \frac{3}{10}$$

$$\Rightarrow \frac{1}{r} = \frac{3}{40} - \frac{1}{20}$$

$$\Rightarrow \frac{1}{r} = \frac{1}{40}$$

 \Rightarrow r = 40 days

 \Rightarrow C alone will take 40 days to complete the work

Hence, option D is correct.

38. Let the speed of train A be $S_A = 48$ kmph and that of train B be S_B .

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Then, time taken by Train $A = T_A$ The Question Bank

= 3 hrs 22.5 mins = 3 +
$$\frac{22.5}{60} = \frac{27}{8}$$
 hrs

Similarly, time taken by Train $B = T_B$

= 2 hrs 40 mins =
$$2\frac{2}{3} = \frac{8}{3}$$
 hrs
Using formula $\frac{S_A}{S_B} = \sqrt{\frac{T_B}{T_A}}$
 $\therefore \frac{48}{S_B} = \sqrt{\frac{8}{3} \times \frac{8}{27}} = \sqrt{\frac{64}{81}} = \frac{8}{9}$
or, S_B = $\frac{48 \times 9}{8} = 54$ kmph

Hence, option C is correct.

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39.
       The length of the rectangle = 12x, breadth of the rectangle = 9x, side of the square = 11x
       Perimeter of square = 4 \times side
       264 = 4 \times 11x
       x = 6 \text{ cm}
       Length of the rectangle = 72 cm, breadth = 54 cm
       New Area = I \times b
       = (72 \times 125\%) \times (54 \times 75\%)
       = 3645 \text{ cm}^2
       Hence, option E is correct.
40.
       The daily wage of Nick = Rs. 4.5
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       Total wage of Nick = Rs. 90
        Number of days taken by Nick = \frac{90}{4.5} = 20 days
       The daily wage of Priyanka = Rs. 3.5
       Total wage of Priyanka = Rs. 105
       Number of days taken by Priyanka = \frac{105}{35} = 30 days
       Number of days Taken by Nick and Priyanka together
       =\frac{1}{1 \quad 1}=12 \text{ days}
         \overline{20}^+\overline{30}
       Cost of Nick for 12 days = 12 \times 4.5 = Rs. 54
       Cost of Priyanka for 12 days = 12 \times 3.5 = Rs. 42
       ∴ Total cost = 54 + 42 = Rs. 96
```

Hence, option D is correct.



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