

# SBI PO Prelims Quantitative Aptitude PDF

1. **Direction:** What value should come in place of the question mark (?) in the following question?

$$160\% \text{ of } ? + 265 = 1025$$

- A. 605
- B. 325
- C. 475
- D. 915
- E. None of these

2. **Direction:** What value should come in place of question mark (?) in the following questions?

$$(?)^2 + 15^2 - 33^2 = 97$$

- A. 33
- B. 32
- C. 34
- D. 30
- E. None of these

**Directions:** What should come in place of question mark (?) in the following question?

$$3. 1485 \times ? = 594$$

- A.  $\frac{2}{5}$
- B.  $\frac{3}{4}$
- C.  $\frac{3}{5}$
- D.  $\frac{5}{6}$
- E. None of these

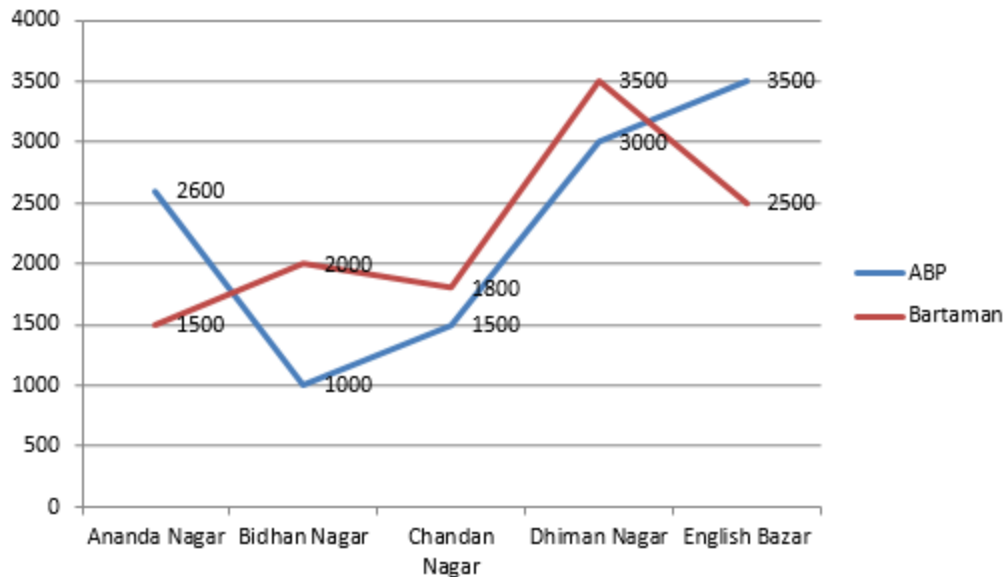
**Direction:** Study the line-chart given below and answer the questions that follow.

The line-chart given below shows the sale of two newspapers (ABP & Bartaman) in 5 different localities.



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4. What is the difference between the total sale of Bartaman newspaper and the total sale of ABP newspaper in all the localities together?

- A. 400
- B. 360
- C. 350
- D. 300
- E. None of these

5. The sale of Bartaman newspaper in Bidhan Nagar is approximately what percent of the total sale of Bartaman newspaper in all the localities together?

- A. 18%
- B. 20%
- C. 22%
- D. 15%
- E. 12%

6. What is the ratio of the sale of Bartaman newspaper in locality Dhiman Nagar to the sale of ABP newspaper in locality Chandan Nagar?

- A. 13 : 12
- B. 4 : 3
- C. 5 : 4
- D. 7 : 3
- E. None of the above

**DIRECTIONS:** What should come in place of question

Mark (?) in the following number series?

7. 16, 27, 49, 82, ?



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- A. 133
- B. 128
- C. 126
- D. 132
- E. None of these

**8.Directions:** What will come at the place of question mark(?) in the following series:

4, 13, 41, ?, 382, 1151

- A. 120
- B. 122
- C. 124
- D. 126
- E. None of these

**Direction:** What should come in place of the question mark '?' in the following number series?

9. 5, 7, 31, 283, ?

- A. 3301
- B. 3243
- C. 3874
- D. 4343
- E. 4533

10.The average weight of 15 students in a class is 55kg. If the weight of teacher is added while the one of the students weighing 45 kg is removed, the average increased by 1 kg. Find out the weight of teacher.

- A. 60 kg
- B. 65 kg
- C. 55 kg
- D. 62 kg
- E. None of these

11.The simple interest accrued on an amount of Rs. 21,500 at the end of four years is Rs. 10,320 what would be the compound interest accrued on the same amount at the same rate at the end of two years?(approx.)

- A. Rs. 5470
- B. Rs. 5250
- C. Rs. 5640
- D. Rs. 5300
- E. None of these



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12. A motor boat went downstream for 350 km and immediately returned. It took the boat 16 hours to complete the round trip. If the speed of river was twice the normal, the trip downstream and back would take 20 hours. What is the speed of boat in still water?

- A.  $140/3$  kmph
- B.  $137/3$  kmph
- C.  $145/3$  kmph
- D.  $119/2$  kmph
- E. None of these

13. The ratio of the angles of a triangle is 2: 3 : 5. What is the sum of the smallest and the largest angles?

- A.  $120^\circ$
- B.  $122^\circ$
- C.  $144^\circ$
- D.  $126^\circ$
- E. None of these

14. Ten years ago the average age of a family of four members was 28 years. Two children having been born, the present average of the family is the same. What are the present ages of the children if the age difference between both the children is 2 years?

- A. 7 years and 9 years
- B. 6 years and 8 years
- C. 7 years and 5 years
- D. Other than given options
- E. 6 years and 4 years

15. In two alloys, copper and zinc are present in the ratios of 4:1 and 1:3. 10 kg of 1st alloy 16 kg of 2nd alloy and some of pure copper are melted together. An alloy was obtained in which the ratio of copper to zinc was 3:2. Find the weight of the new alloy.

- A. 34 kg
- B. 35 kg
- C. 36 kg
- D. 22 kg
- E. 24 kg

**Direction:** Answer the questions based on the information given below:  
The pie – chart represents the percentage distribution of the number of students who got six different grades i.e. A, B, C, D, E and F, in an exam. The total number of students who got grade C is 24128.

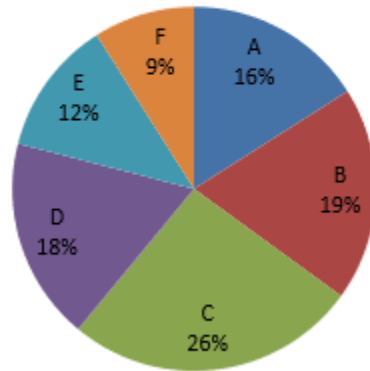


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**Percentage of total number of students of different grades in an exam**



16. The ratio of the number of girls to the number of boys who got grade F is 12: 17, respectively. Find the number of boys who got grade F.

- A. 4692
- B. 4848
- C. 4844
- D. 4896
- E. 4640

17. The total number of students who got a certificate of excellence was 25% of the total number of students who got grade A. What percent of the total students got a certificate of excellence?

- A. 5%
- B. 4%
- C. 5.5%
- D. 4.5%
- E. 3%

18. The ratio of the number of boys who got grade B to the number of boys who got grade C is 19: 29, respectively. If the total number of boys who got grade B was 8778 then find the difference between the number of girls who got grade B and the number of girls who got grade C.

- A. 1664
- B. 1520
- C. 1876
- D. 1836



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E. 1632

**Direction:** These questions are based on the following data. Study it carefully and answer the questions that follow.

In a school having 18000 students boys and girls are in the ratio 3 : 5 respectively. The students like Tea, Coffee or both. 12% of the boys like only Tea, 22% of the girls like only Coffee. 24% of the total students like only Tea and the number of boys liking both the beverages is six times the number of boys liking only Tea.

19. Total how many boys like Tea?

- A. 4260
- B. 5670
- C. 5975
- D. 4235
- E. None of these

20. How many girls like only Tea?

- A. 3485
- B. 3050
- C. 3864
- D. 3510
- E. None of these

21. Total how many students like Coffee?

- A. 13680
- B. 17110
- C. 12025
- D. 12053
- E. None of these

**Direction:** Study the information given below and answer the questions based on it.

The following tabular graph represents the number of people living in five villages in 2017. Use the information to answer the following question.

(Total people in a village = Male + Female + Children)

| Village | Male + Children | Female + Children | Male + Female |
|---------|-----------------|-------------------|---------------|
| A       | 190             | 140               | 230           |
| B       | 220             | 140               | 240           |
| C       | 180             | 240               | 260           |
| D       | 180             | 140               | 200           |
| E       | 280             | 180               | 340           |



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22. Find the difference between the total number of male from village A and the total number of female from village E.

- A. 80
- B. 20
- C. 60
- D. 40
- E. 100

23. The ratio of total number of married male to the total number of unmarried male from village B and village D together is 9:5. Find the number of unmarried male.

- A. 100
- B. 180
- C. 80
- D. 140
- E. 120

24. If in 2018, the total number of people is increased by 20% from village C and the number of males is increased by 30% and the number of females is increased by 10% from village C in 2017. Then, what is the total number of children in village C in 2018?

- A. 108
- B. 36
- C. 54
- D. 102
- E. 76

25. Pipes A and B together can fill the tank in 36 minutes. Both the pipes are opened simultaneously and after 30 minutes pipe B is closed. If the tank is filled in 40 minutes, then in how much time can pipe B alone fill the tank?

- A. 45 minutes
- B. 60 minutes
- C. 75 minutes
- D. 90 minutes
- E. 85 minutes

26. In a pattern A, B and C are working together to complete a job in 15 days, where C only worked for the first 6 days when  $\frac{37}{100}$  of the job was done and further work was completed by A & B. Also, the work done by A in 4 days is equal to the work done by B in 3 days. How many days would be required by the B to complete the entire work?

- A. 44 days
- B. 35 days



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- C. 25 days
- D. 10 days
- E. None of these

27. Vikash leaves from Delhi to Noida at 9:00 Am and Rahul leaves from Noida at 10:20 Am for Delhi. At 11:05 Am they meet at a hotel and after their meeting, they again started and take the same time to reach their destination. Find the time taken by both of them for reaching their destination?

- A. 75 Minutes
- B. 85Min
- C. 95 min
- D. 45 min
- E. 100 min

28. The ratio of the angles of a triangle is 2: 3 : 5. What is the sum of the smallest and the largest angles?

- A. 120 °
- B. 122 °
- C. 144 °
- D. 126 °
- E. None of these

29. Ten years ago the average age of a family of four members was 28 years. Two children having been born, the present average of the family is the same. What are the present ages of the children if the age difference between both the children is 2 years?

- A. 7 years and 9 years
- B. 6 years and 8 years
- C. 7 years and 5 years
- D. Other than given options
- E. 6 years and 4 years

30. In two alloys, copper and zinc are present in the ratios of 4:1 and 1:3. 10 kg of 1st alloy 16 kg of 2nd alloy and some of pure copper are melted together. An alloy was obtained in which the ratio of copper to zinc was 3:2. Find the weight of the new alloy.

- A. 34 kg
- B. 35 kg
- C. 36 kg
- D. 22 kg
- E. 24 kg



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**###ANSWERS###**

1. Ans. C.

$$160\% \text{ of } ? + 265 = 1025$$

$$160/100 * ? = 1025 - 265$$

$$? = 760 * 100 / 160$$

$$? = 475$$

2. Ans. E.

$$(?)^2 + 15^2 - 33^2 = 97$$

$$(?)^2 + 225 - 1089 = 97$$

$$(?)^2 = 961$$

$$? = \sqrt{961}$$

$$? = 31$$

3. Ans. A.

$$1485 \times ? = 594$$

$$? = \frac{594}{1485} = \frac{2}{5}$$

4. Ans. D.

$$\text{Sale of Bartaman} = 1500 + 2000 + 1800 + 3500 + 2500 = 11300$$

$$\text{Sale of ABP} = 2600 + 1000 + 1500 + 3000 + 3500 = 11600$$

$$\text{Required Difference} = 11600 - 11300 = 300$$

5. Ans. A.

$$\text{Sale of Bartaman} = 1500 + 2000 + 1800 + 3500 + 2500 = 11300$$

$$\text{Required percentage} = \frac{2000}{11300} \times 100 = 17.6\% \approx 18\%$$

6. Ans. D.

$$\text{Required Ratio} = 3500 : 1500 = 7 : 3$$

7. Ans. C.

The pattern is + 11, + 22, + 33, .....

$$\text{So, missing term} = 82 + 44 = 126.$$

8. Ans. D.

$$4 \times 3 + 1 = 13$$

$$13 \times 3 + 2 = 41$$

$$41 \times 3 + 3 = 126$$

$$126 \times 3 + 4 = 382$$

$$382 \times 3 + 5 = 1151$$

9. Ans. E.

The pattern of series is

$$5 \times 1^2 + 2 = 7$$

$$7 \times 2^2 + 3 = 31$$



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$$31 \times 3^2 + 4 = 283$$

$$283 \times 4^2 + 5 = 4533$$
 Will be next number.

10. Ans. A.

Average = sum of quantities/total number of quantities

Given, average weight of 15 students in a class is 55kg.

Sum total of weights =  $15 \times 55 = 825$  kg

Now, one of the student weighing 45 kg is replaced by the teacher.

Let the weight of teacher be 'x' kg.

∴ Sum total of weights =  $825 - 45 + x = (780 + x)$  kg

Given, the average increased by 1 kg.

$$\therefore 15 \times 56 = 780 + x$$

$$\Rightarrow 840 = 780 + x$$

$$\Rightarrow x = 60 \text{ kg}$$

11. Ans. A.

$$10,320 = \frac{21500 \times 4 \times r}{100}$$

$$r = 12\%$$

$$= 21500 \times \left( \frac{112}{100} \times \frac{112}{100} - 1 \right) = 5469.6$$

Compound Interest

12. Ans. A.

350 km = D distance.

Boat speed = b, Stream speed = s, twice speed = 2s.

Now,  $D/[b+s] + D/[b-s] = 16$

And,  $D/[b+2s] + D/[b-2s] = 20$

From these two statements, we get

$$16(b^2 - s^2) = 20(b^2 - 4s^2)$$

And from this we get  $b = 4s$

Now, 1st equation, putting values

$$350[1/5s + 1/3s] = 16$$

$$\Rightarrow 350 \times 8/[15 \times 16] = s \text{ and } 4s = b = 350 \times 8 \times 4/[15 \times 16] = 700/15 = 140/3$$

kmph

13. Ans. D.

$$2x + 3x + 5x = 180^\circ$$

$$10x = 180^\circ$$

$$x = \frac{180^\circ}{10} = 18^\circ$$



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$$\begin{aligned}\therefore \text{required sum} &= 2x + 5x = 7x \\ &= 7 \times 18 = 126^0\end{aligned}$$

14. Ans. A.

Ten years ago, age of 4 members

$$28 \times 4 = 112 \text{ years}$$

Total age of 4 members at present =  $(28 + 10) \times 4 = 152$  years

Present age of 4 members + 2 child =  $28 \times 6 = 168$  years

Sum of ages of 2 child =  $168 - 152 = 16$

Age of 1<sup>st</sup> child = 9 years

Age of 2<sup>nd</sup> child = 7 years

15. Ans. B.

Let the amount of pure copper =  $x$  kg.

Pure copper + copper in 1st alloy + copper in 2nd alloy

= Copper in 3rd alloy

$$x + \frac{4}{5} \times 10 + \frac{1}{4} \times 16 = \frac{3}{5}(10 + 16 + x)$$

$$12 + x = \frac{3}{5}(26 + x)$$

$$x = 9 \text{ kg.}$$

$\therefore$  weight of new alloy =  $10 + 16 + 9 = 35$  kg.

16. Ans. D.

Let, the total number of students be  $x$

So, 26% of  $x = 24128$

$$\text{So, } x = \frac{24128}{26} \times 100 = 92800$$

Therefore, the number of students who got grade F = 9% of 92800 = 8352

$$\text{So, the total number of boys who got grade F} = \frac{17}{29} \times 8352 = 4896$$

So option (d) is the correct answer.

17. Ans. B.

Let, the total number of students be  $x$

So, 26% of  $x = 24128$

$$\text{So, } x = \frac{24128}{26} \times 100 = 92800$$

Therefore, the number of students who got grade A = 16% of 92800 = 14848

So, the number of students who got a certificate of excellence =

25% of 14848 = 3712

$$\text{Therefore, required percentage} = \frac{3712}{92800} \times 100 = 4\%$$

So option (b) is the correct answer.

18. Ans. C.

Let, the total number of students be  $x$

So, 26% of  $x = 24128$



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$$\text{So, } x = \frac{24128}{26} \times 100 = 92800$$

Therefore, the number of students who got grade B = 19% of 92800 = 17632

And, the number of students who got grade C = 26% of 92800 = 24128

Let, the number of boys who got grade B and the number of boys who got grade C = 19x and 29x, respectively

$$\text{So, } 19x = 8778$$

$$x = 462$$

$$\text{So, the total number of boys who got grade B} = 19x = 8778$$

$$\text{Ans, the total number of boys who got grade C} = 29x = 13398$$

$$\text{So, the total number of girls who got grade B} = 17632 - 8778 = 8854$$

$$\text{Ans, the total number of girls who got grade C} = 24128 - 13398 = 10730$$

$$\text{Required difference} = 10730 - 8854 = 1876$$

So option (c) is the correct answer.

19. Ans. B.

The following table can be drawn from the above informations:-

No of girls having tea can be found = Total no of students having tea - boys having tea.

Girls having both = total no of girls - (Girls like tea + girls like coffee)

|        | Boys | Girls | Total |
|--------|------|-------|-------|
| Tea    | 810  | 3510  | 4320  |
| Coffee | 1080 | 2475  | 3555  |
| Both   | 4860 | 5265  | 10125 |
| Total  | 6750 | 11250 | 18000 |

$$\text{Boys who like tea} = \text{boys like only tea} + \text{like both} = 810 + 4860 = 5670$$

20. Ans. D.

|        | Boys | Girls | Total |
|--------|------|-------|-------|
| Tea    | 810  | 3510  | 4320  |
| Coffee | 1080 | 2475  | 3555  |
| Both   | 4860 | 5265  | 10125 |
| Total  | 6750 | 11250 | 18000 |

$$\text{Total girls like only Tea} = 3510$$

21. Ans. A.



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|        | Boys | Girls | Total |
|--------|------|-------|-------|
| Tea    | 810  | 3510  | 4320  |
| Coffee | 1080 | 2475  | 3555  |
| Both   | 4860 | 5265  | 10125 |
| Total  | 6750 | 11250 | 18000 |

Students who like coffee = 3555 + 10125 = 13680

22. Ans. B.

| Village | Total people | Male | Female | Children |
|---------|--------------|------|--------|----------|
| A       | 280          | 140  | 90     | 50       |
| B       | 300          | 160  | 80     | 60       |
| C       | 340          | 100  | 160    | 80       |
| D       | 260          | 120  | 80     | 60       |
| E       | 400          | 220  | 120    | 60       |

**From village A,**

Let M represents male, F represent female and C represents children. So,

$$M+C=190$$

$$F+C=140$$

$$M+F=230$$

$$2(M+F+C)=190+140+230=560$$

$$M+F+C=560/2=280$$

$$\begin{aligned} \text{Total number of males} &= (M+F+C) - (F+C) \\ &= 280 - 140 = 140 \end{aligned}$$

$$\begin{aligned} \text{Total number of females} &= (M+F+C) - (M+C) \\ &= 280 - 190 = 90 \end{aligned}$$

$$\begin{aligned} \text{Total number of children} &= (M+F+C) - (M+F) \\ &= 280 - 230 = 50 \end{aligned}$$

**From village E,**

$$M+C=280$$

$$F+C=180$$

$$M+F=340$$

$$2(M+F+C)=280+180+340=800$$

$$M+F+C=800/2=400$$

$$\begin{aligned} \text{Total number of females} &= (M+F+C) - (M+C) \\ &= 400 - 280 = 120 \end{aligned}$$

$$\begin{aligned} \text{Difference} &= \text{Male from village A} - \text{female from village E} \\ &= 140 - 120 = 20 \end{aligned}$$

Hence, option B is the correct answer.

23. Ans. A.



| Village | Total people | Male | Female | Children |
|---------|--------------|------|--------|----------|
| A       | 280          | 140  | 90     | 50       |
| B       | 300          | 160  | 80     | 60       |
| C       | 340          | 100  | 160    | 80       |
| D       | 260          | 120  | 80     | 60       |
| E       | 400          | 220  | 120    | 60       |

Let M represents male, F represents female and C represents children.

**From village B,**

$$M+C=220$$

$$F+C=140$$

$$M+F=240$$

$$2(M+F+C)=220+140+240=600$$

$$M+F+C=600/2=300$$

$$\text{Total number of male}=(M+F+C)-(F+C)$$

$$=300-140=160$$

**From village D,**

$$M+C=180$$

$$F+C=140$$

$$M+F=200$$

$$2(M+F+C)=180+140+200=520$$

$$M+F+C=520/2=260$$

$$\text{Total number of male}=(M+F+C)-(F+C)$$

$$=260-140=120$$

$$\text{Total male B+D}=160+120=280$$

$$\text{Ratio of married to unmarried}=9:5$$

$$\text{So total unmarried male}=280 \times \frac{5}{14}=100$$

Hence, option A is the correct answer.

24. Ans. D.

| Village | Total people | Male | Female | Children |
|---------|--------------|------|--------|----------|
| A       | 280          | 140  | 90     | 50       |
| B       | 300          | 160  | 80     | 60       |
| C       | 340          | 100  | 160    | 80       |
| D       | 260          | 120  | 80     | 60       |
| E       | 400          | 220  | 120    | 60       |

Let M represents male, F represents female and C represents children.

**From village C in 2017,**

$$M+C=180$$

$$F+C=240$$

$$M+F=260$$

$$2(M+F+C)=180+240+260=680$$

$$M+F+C=680/2=340$$

$$\text{Total number of males}=(M+F+C)-(F+C)$$



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$$=340-240=100$$

$$\text{Total number of females}=(M+F+C)-(M+C)$$

$$=340-180=160$$

$$\text{Total number of children}=(M+F+C)-(M+F)$$

$$=340-260=80$$

In 2018,

The number of males,

$$100 \times 130 / 100 = 130$$

The number of females,

$$160 \times 110 / 100 = 176$$

Total people increased by,

$$340 \times 120 / 100 = 408$$

$$\text{Total number of children} = 408 - (130 + 176)$$

$$= 408 - 306 = 102$$

25. Ans. D.

A and B can fill the tank in 36 minutes

Let the time taken by pipe A to fill the tank = x minutes

Ans, the time taken by pipe B to fill the tank = y minutes

$$\text{So, } \frac{1}{x} + \frac{1}{y} = \frac{1}{36}$$

$$\text{So, part of the tank filled in 30 minutes} = \frac{30}{36} = \frac{5}{6}$$

$$\text{Remaining part} = 1 - \frac{5}{6} = \frac{1}{6}$$

So,  $\frac{1}{6}$ th part of the tank is filled by A alone in 10 minutes

So total time taken by A to fill the tank = 60 minutes

$$\text{And, time taken by B to fill} = \frac{1}{36} - \frac{1}{60} = \frac{10}{360} - \frac{6}{360} = \frac{4}{360} = \frac{1}{90}$$

So, pipe B can fill the tank in 90 minutes.

So, option (d) is the correct answer.

26. Ans. C.

Let the work done by A, B and C in 1 day be a, b and c respectively

For first 2 days,

$$6(a + b + c) = 37/100 \dots\dots(1)$$

After C left the work, for remaining 9 days A and B worked

$$9(a + b) = 63/100 \dots\dots(2)$$

Further,

$$4a = 3b \dots\dots(3)$$

Solving equations (2) and (3),

$$3(a + b) = 21/100$$

$$3a + 3b = 21/100$$

$$3a + 4a = 21/100$$



$$7a = 21/100$$

$$a = 3\%$$

$$b = 4\%$$

B completes 4% of the work per day i.e. 4/100

Days taken to complete the entire work =  $100/4 = 25$  days

27. Ans. A.

Total time taken by vikash for meeting point → 125 minutes

Time taken by Rahul for meeting point → 45 minutes

And they takes equal time so,

$$\text{Time} = \sqrt{125 \times 45}$$

$$T = 75 \text{ Minutes}$$

28. Ans. D.

$$2x + 3x + 5x = 180^\circ$$

$$10x = 180^\circ$$

$$x = \frac{180^\circ}{10} = 18^\circ$$

$$\begin{aligned} \therefore \text{required sum} &= 2x + 5x = 7x \\ &= 7 \times 18 = 126^\circ \end{aligned}$$

29. Ans. A.

Ten years ago, age of 4 members

$$28 \times 4 = 112 \text{ years}$$

Total age of 4 members at present =  $(28 + 10) \times 4 = 152$  years

Present age of 4 members + 2 child =  $28 \times 6 = 168$  years

Sum of ages of 2 child =  $168 - 152 = 16$

Age of 1<sup>st</sup> child = 9 years

Age of 2<sup>nd</sup> child = 7 years

30. Ans. B.

Let the amount of pure copper =  $x$  kg.

Pure copper + copper in 1st alloy + copper in 2nd alloy

= Copper in 3rd alloy

$$x + \frac{4}{5} \times 10 + \frac{1}{4} \times 16 = \frac{3}{5}(10 + 16 + x)$$

$$12 + x = \frac{3}{5}(26 + x)$$

$$x = 9 \text{ kg.}$$

$\therefore$  weight of new alloy =  $10 + 16 + 9 = 35$  kg.



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