

## STAFF SELECTION COMMISSION – Solved Papers

### AGE DETERMINATION

1. The average age of 12 players of a team is 25 years. If the captain's age is included, the average age increases by 1 year. The age of the captain is:

- (1) 25 years      (2) 38 years  
(3) 36 years      (4) 26 years

**Ans : 2**

$$\begin{aligned} \text{Total age of 12 players} \\ = 12 \times 25 = 300 \end{aligned}$$

$$\begin{aligned} \text{Total age including captain} \\ = 13 \times 26 = 338 \end{aligned}$$

$$\begin{aligned} \therefore \text{Age of the captain} \\ = 338 - 300 = 38 \text{ years} \end{aligned}$$

2. In a class, there are 40 boys and their average age is 16 years. On one boy, aged 17 years. On one boy, aged 17 years, leaving the class and another joining, the average age becomes 15.875 years. The age of the new boy is :

- (1) 12 years      (2) 14.5 years  
(3) 15 years      (4) 17 years

**Ans : 1**

$$\begin{aligned} \text{Total age of 40 boys} \\ = 40 \times 16 = 640 \text{ years} \end{aligned}$$

$$\begin{aligned} \text{New total age of 40 boys} \\ = 40 \times 15.875 = 635 \text{ years} \end{aligned}$$

$\therefore$  Required answer

$$\begin{aligned} = [635 - (640 - 17)] \\ = 12 \text{ years} \end{aligned}$$

3. The average age of 30 boys in a class is 15 years. One boy, aged 20 years, left the class, but two new boys came in his

place whose ages differ by 5 years. If the average age of all the boys now in the class becomes 15 years, the age of the younger newcomer is :

- (1) 20 years      (2) 15 years  
(3) 10 years      (4) 8 years

**Ans : 2**

$$\begin{aligned} \text{Total age of 30 boys} \\ = 30 \times 15 = 450 \text{ years} \end{aligned}$$

One boy, aged 20 years, left the class

$$\begin{aligned} \text{Now total age of 29 boys} \\ = 450 - 20 = 430 \text{ years} \end{aligned}$$

Again, two new boys join the class

$$\begin{aligned} \text{Then, the total age of 31 boys} \\ = 15 \times 31 = 465 \text{ years} \end{aligned}$$

$$\begin{aligned} \therefore \text{Age of two new boys} \\ = 465 - 430 = 35 \text{ years} \end{aligned}$$

Let the individual ages of two boys be  $x$  and  $y$  years

$$\therefore x + y = 35$$

$x - y = 5$  (According to the question)

$$\therefore 2x = 40$$

$$x = \frac{40}{2} = 20 \text{ years}$$

$$\therefore y = 15 \text{ years}$$

$\therefore$  Age of the younger newcomer = 15 years

4. Harsha is 40 years old and Rith is 60 years old. How many years ago was the ratio of their ages 3 : 5?

- (1) 10 years      (2) 20 years  
(3) 37 years      (4) 5 years

**Ans : 1**

Let  $x$  years ago the ratio of their ages was 3 : 5

$\therefore$  According to the question

$$\begin{aligned} \frac{40-x}{40-x} = \frac{3}{5} \\ \Rightarrow 200 - 5x = 180 - 3x \end{aligned}$$

$$\Rightarrow 2x = 20$$

$$\therefore x = 10 \text{ years}$$

5. The ratio of present ages of two brothers is 1:2 and 5 years back the ratio was 1:3. What will be the ratio of their ages after 5 years?

- (1) 1 : 4      (2) 2 : 3  
(3) 3 : 5      (4) 5 : 6

**Ans : 3**

Let the present ages of two brothers be  $x$  and  $2x$  years.

$$\text{Now, } \frac{x-5}{2x-5} = \frac{1}{3}$$

$$\Rightarrow 3x - 15 = 2x - 5$$

$$\Rightarrow 3x - 2x = 15 - 5$$

$$\Rightarrow x = 10$$

$\therefore$  Their present ages

$$= 10 \text{ and } 20 \text{ years}$$

After 5 years their required

$$\text{ratio} = \frac{15}{25} = \frac{3}{5}$$

6. The average age of 8 men is increased by 2 years when two of them whose ages are 21 and

23 years replaced by two new men. The average age of the two new men is

- (1) 22 years      (2) 24 years  
(3) 28 years      (4) 30 years

**Ans : 4**

Overall increase in the total ages =  $8 \times 2 = 16$  years

$$\therefore \text{Total age of two new men} \\ = 21 + 23 + 16 = 60 \text{ years}$$

$\therefore$  Average age of them

$$= \frac{60}{2} = 30 \text{ years}$$

7. The average age of eleven players of a cricket team decreases by 2 months when two new players are included in the team replacing two players of ages 17 years and 20 years. The average age of new players is

- (1) 17 years 1 month  
(2) 17 years 7 months  
(3) 17 years 11 months  
(4) 18 years 3 months

**Ans : 2**

Trick

Average age of new players

$$= \left\{ (20+17) \times \frac{2}{12} \right\} \times \frac{1}{2} \\ = \frac{422}{12 \times 2} = \frac{211}{12} \Rightarrow 17 \frac{7}{12} \\ = 17 \text{ years } 7 \text{ months}$$

8. Four years ago, the ratio of the ages of A and B was 2 : 3 and after four years it will become 5 : 7. Find their present ages.

- (1) 36 years and 40 years

- (2) 32 years and 48 years  
(3) 40 years and 56 years  
(4) 36 years and 52 years

**Ans : 2**

Four years ago let the ages of A and B be  $2x$  and  $3x$  years respectively.

According to the question

$$\frac{2x+8}{3x+8} = \frac{5}{7}$$

$$\Rightarrow 14x + 56 = 15x + 40$$

$$\Rightarrow x = 16$$

Present age of A =  $2x$

$$= 2 \times 16 = 32 \text{ year}$$

Present age of B =  $2x$

$$= 3 \times 16 = 48 \text{ year}$$

9. The present age of a father is 3 years more than three times the age of his sons. Three years hence, father's age will be 10 years more than twice the age of the son. The father's present age is :

- (1) 33 years      (2) 39 years  
(3) 45 years      (4) 40 years

**Ans : 1**

Let the son's present age =  $x$  years

$\therefore$  Father's age =  $(3x+3)$  years.

After 3 years.

$$(3x+3)+3 = 2(x+3)+10$$

$$\Rightarrow 3x+6 = 2x+16$$

$$\Rightarrow x = 10$$

$\therefore$  Father's present age

$$= 3x+3 = 3 \times 10 + 3 = 33 \text{ years}$$

10. Average age of 6 sons of a family is 8 years. Average age

of sons together with their parents is 22 years. If the father is old than the mother by 8 years, the age of mother (in years) is :

- (1) 44                      (2) 52  
(3) 60                      (4) 68

**Ans : 3**

Let the mother's age

$$= x \text{ years}$$

$\therefore$  Father's age =  $(x+8)$  years

Sum of ages of 6 sons

$$= 8 \times 6 = 48 \text{ years}$$

Sum of ages of 6 sons and parents =  $22 \times 8 = 176$  years.

$\therefore$  Age of Parents =  $176 - 48$

$$= 128 \text{ years}$$

$$\Rightarrow x + x + 8 = 128$$

$$\Rightarrow 2x = 120$$

$$\Rightarrow x = 60$$

Hence, mother's age = 60 years

11. Out of 10 teachers of a school, one teacher retires and in his place, a new teacher of age 25 years joins. As a result, average age of teachers reduces by 3 years. The age of the retired teacher is

- (1) 50 years      (2) 55 years  
(3) 58 years      (4) 60 years

**Ans : 2**

Total age decreased

$$= 10 \times 3 = 30 \text{ years.}$$

$\therefore$  Age of the retired teacher

$$= 25 + 30 = 55 \text{ years.}$$

12. My grandfather was 8 times older than me 16 years ago. He would be 3 times of my age, 8 years from now. Eight years

ago, what was the ratio of my age to that of my grandfather?

- (1) 3 : 8            (2) 1 : 5  
 (3) 1 : 2  
 (4) None of the above

**Ans : 2**

Let 16 years ago, grandson's age =  $x$  years

$\therefore$  Grandfather's age =  $9x$

After 8 years from now,

$$9x + 16 + 8 = 3(x + 16 + 8)$$

or,  $9x + 24 = 3x + 72$

or,  $6x = 48$

$$\therefore x = \frac{48}{6} = 8$$

Son's present age =  $x + 16$

$$= 8 + 16 = 24$$

Grandfather's present age

$$= 9x + 16 = 9 \times 8 + 16 = 88$$

Before 8 years Son's age

$$= 24 - 8 = 16$$

Before 8 years Grandfather's age

$$= 88 - 8 = 80$$

$\therefore$  The required ratio

$$= 16 : 80 = 1 : 5$$

- 13.** The ratio of ages of two boys is 5 : 6. After two years, the ratio will be 7 : 8. The ratio of their ages after 10 years will be

- (1) 15 : 16            (2) 17 : 18  
 (3) 11 : 12            (4) 22 : 24

**Ans : 1**

Suppose the ages of two boys are  $5x$  and  $6x$  respectively

$\therefore$  According to question

$$\frac{5x+2}{6x+2} = \frac{7}{8}$$

$$\Rightarrow 42x + 14 = 40x + 16$$

$$\Rightarrow 2x = 2$$

$$\Rightarrow x = 1$$

Ratio of ages after 10 years

$$= \frac{5 \times 1 + 10}{6 \times 1 + 10} = \frac{15}{16} = 15 : 16$$

- 14.** The average age of 20 boys in a class is 12 years. 5 new boys are admitted to the class whose average age is 7 years. The average age of the boys in the class becomes

- (1) 8.2 years            (2) 9.5 years  
 (3) 12.5 years            (4) 11 years

**Ans : 4**

New average age of class

$$= \frac{20 \times 12 + 5 \times 7}{25} = \frac{240 + 35}{25}$$

$$= \frac{275}{25} = 11 \text{ years}$$

- 15.** There are 30 students in a class. The average age of first 10 students is 12.5 years. The average age of the remaining 20 students is 13.1 years. The average age (in years) of the students of the whole class is

- (1) 12.5                    (2) 12.7  
 (3) 12.8                    (4) 12.9

**Ans : 4**

Average age

$$= \frac{10 \times 12.5 + 20 \times 13.1}{10 + 20}$$

$$\frac{125 + 262}{30} = 12.9 \text{ years}$$

- 16.** 3 years ago, the average age of a family of 5 members was 17 years. A baby having been born, the average age of the family is the same today. The present age of the baby is :

- (1) 3 years            (2) 2 years  
 (3)  $1\frac{1}{2}$  years            (4) 1 year

**Ans : 2**

Total age of 5 members, 3 years ago =  $17 \times 5 = 85$  years

Total age of 5 members, now

$$= (85 + 3 \times 5) = 100 \text{ years}$$

Total age of 6 members, now

$$= 17 \times 6 = 102 \text{ years}$$

$\therefore$  Age of the baby

$$= 102 - 100 = 2 \text{ years}$$

- 17.** The average age of 5 boys is 12 years. The average age of 3 others is 16 years. The average age of all the 8 boys is :

- (1)  $13\frac{1}{2}$  years            (2) 14 years  
 (3)  $12\frac{1}{2}$  years            (4) 13 years

**Ans : 1**

Required average

$$= \frac{5 \times 12 + 3 \times 16}{5 + 3} = \frac{60 + 48}{8} = \frac{108}{8}$$

$$= \frac{27}{2} = 13\frac{1}{2} \text{ years}$$

- 18.** A person was asked to state his age in years. His reply was, "take my age three years hence, multiply it by 3 and then subtract three times my age three years ago and you will know old I am. "What was the age of the person?"

- (1) 24 years      (2) 20 years  
 (3) 32 years      (4) 18 years

**Ans : 4**

Let the present age of the person be  $x$  years.

According to the question.

$$\begin{aligned}x &= 3(x+3) - 3(x-3) \\ \Rightarrow x &= 3x+9 - 3x+9 \\ &= 18 \text{ years}\end{aligned}$$

- 19.** Out of 10 teachers of a school, one teacher retires and in his place a new teacher of age 25 years joins. As a result of it, the average age of the teachers is reduced by 3 years. The age of the retired teacher is

- (1) 60 years      (2) 58 years  
 (3) 56 years      (4) 55 years

**Ans : 4**

The average age is reduced by 3 years.

$$\begin{aligned}\therefore \text{Age of the retired teacher} \\ &= 25 + 3 \times 10 = 55 \text{ years}\end{aligned}$$

- 20.** The ratio of the present ages of Puneet and Appu is 2 : 3. After 3 years the ratio of their ages will be 3 : 4. The present age of Puneet is :

- (1) 3 years      (2) 6 years  
 (3) 9 years      (4) 4 years

**Ans : 2**

Let the present ages of Puneet and Appu be  $2x$  and  $3x$  years respectively.

After 3 years.

$$\begin{aligned}\frac{2x+3}{3x+3} &= \frac{3}{4} \\ \Rightarrow 9x+9 &= 8x+12\end{aligned}$$

$$\Rightarrow x = 3$$

$\therefore$  Present age of Puneet

$$= 2x = 2 \times 3 = 6 \text{ years}$$

- 21.** The average age of 40 students of a class is 15 years. When 10 new students are admitted, the average is increased by 0.2 year. The average age of the new students is :

- (1) 15.2 years      (2) 16 years  
 (3) 16.2 years      (4) 16.4 years

**Ans : 2**

Total age of 40 old students

$$= 40 \times 15 = 600 \text{ years.}$$

Total age of 40 old and 10 new students =  $50 \times 15.2 = 760$  years

$$\begin{aligned}\therefore \text{Total age of 10 new students} \\ &= 760 - 600 = 160 \text{ years.}\end{aligned}$$

$\therefore$  Required average age

$$= \frac{160}{10} = 16 \text{ years}$$

- 22.** When the average age of a husband and wife and their son was 42 years, the son got married and a child was born just one year after the marriage. When child turned to be five years then the average age of family became 36 years. What was the age of daughter-in-law at the time of marriage?

- (1) 26 years      (2) 25 years  
 (3) 24 years      (4) 23 years

**Ans : 1**

$$H + W + S = 42 \times 3 = 126$$

$$(H + W + S) + D + C$$

$$= 36 \times 5 = 180$$

$$(126 + 6 \times 3) + D + C = 180$$

$$\Rightarrow 144 + D + C = 180$$

$$\Rightarrow D + C = 180 - 144 = 36$$

$\therefore$  Age of daughter-in-law at the time of marriage :

$$= 36 - (6 + 6) = 26 \text{ years}$$

- 23.** In a school, the average age of students is 6 years, and the average age of 12 teachers is 40 years. If the average age of the combined group of all the teachers and students is 7 years, then the number of students is :

- (1) 396      (2) 400  
 (3) 408      (4) 416

**Ans : 1**

Let the number of students be  $n$ . Then

$$7 = \frac{n \times 6 + 12 \times 40}{n + 12}$$

$$\Rightarrow 7n + 84 = 6n + 480$$

$$\Rightarrow n = 480 - 84 = 396$$

- 24.** The average age of 11 players of a cricket team is increased by 2 months when two of them aged 18 years and 20 years are replaced by two new players. The average age of the new players is :

- (1) 19 years 1 month  
 (2) 19 years 9 months  
 (3) 19 years 11 months  
 (4) 19 years 5 months

**Ans : 3**

Total age increased

$$= 11 \times 2 = 22 \text{ months}$$

Total age of new players

$$\begin{aligned}
 &= (18 + 20) \text{ years} + 22 \text{ months} \\
 &= 39 \text{ years } 10 \text{ months} \\
 &= \frac{39 \text{ years } 10 \text{ months}}{2} \\
 &= 19 \text{ years } 11 \text{ months}
 \end{aligned}$$

25. The average age of 30 boys in a class is 15 years. One boy aged 20 years, left the class, but two new boys came in his place whose ages differ by 5 years. If the average age of all the boys now in the class still remains 15 years, the age of the younger newcomer is :

- (1) 20 years      (2) 15 years  
 (3) 10 years      (4) 8 years

**Ans : 2**

Let the age of younger boy be  $x$  years.

$\therefore$  Age of older boy

$$= (x + 5) \text{ years.}$$

Then, total age of 30 boys

$$= 30 \times 15 = 450 \text{ years.}$$

Total age of 31 boys after two newcomers join

$$= 450 - 20 + x + x + 5$$

$$= 435 + 2x$$

Clearly,  $435 + 2x$

$$= 31 \times 15$$

$$\Rightarrow 2x = 465 - 435$$

$$\Rightarrow x = \frac{30}{2} = 15 \text{ years}$$

26. The average age of 11 players of a cricket team is decreased by 2 months when two of them aged 17 years and 20 years are replaced by two new players. The average age of the new players is

- (1) 17 years 1 month  
 (2) 17 years 7 months  
 (3) 17 years 11 months  
 (4) 18 years 3 months

**Ans : 2**

Total decrease

$$= 11 \times 2 = 22 \text{ months}$$

$$= 1 \text{ year } 10 \text{ months}$$

Total age of new players

$$= [(17 + 20)] \text{ yrs} - 1 \text{ yr } 10 \text{ months}]$$

$$= 35 \text{ years } 2 \text{ months}$$

$\therefore$  Average age

$$= 17 \text{ years } 7 \text{ months}$$

27. The ratio of the ages of a father and his son 10 years hence will be 5 : 3 while 10 years ago, it was 3 : 1. The ratio of the age of the son to that of the father today, is

- (1) 1 : 2      (2) 1 : 3  
 (3) 2 : 3      (4) 2 : 5

**Ans : 1**

Let the age of father be 10 years hence is  $5x$  years, then age of son 10 years hence will be  $3x$  years.

According to the question,

$$\frac{5x - 10 - 10}{3x - 10 - 10} = \frac{3}{1}$$

$$\Rightarrow \frac{5x - 20}{3x - 20} = \frac{3}{1}$$

$$\Rightarrow 5x - 20 = 9x - 60$$

$$\Rightarrow 4x = 40 \text{ or } x = 10$$

$\therefore$  Required ratio

$$= (3x - 10) : (5x - 10)$$

$$= 20 : 40 = 1 : 2$$

28. The average age of 24 boys and their teacher is 15 years. When the teacher's age is excluded, the average age decreases by 1 year. The age of the teacher is

- (1) 38 years      (2) 39 years  
 (3) 40 years      (4) 41 years

**Ans : 2**

The age of the teacher

$$= (24 + 1) \times 15 - 24 \times (15 - 1)$$

$$= 25 \times 15 - 24 \times 14$$

$$= 375 - 336 = 39 \text{ years.}$$

29. There were 24 students in a class. One of them, who was 18 years old, left the class and his place was filled up by a newcomer. If the average of the class thereby, was lowered by one month, the age of the newcomer is

- (1) 14 years      (2) 15 years  
 (3) 16 years      (4) 17 years

**Ans : 3**

Total age decreased

$$= 24 \times 1 = 24 \text{ months} = 2 \text{ years}$$

$\therefore$  Age of newcomer

$$= 18 - 2 = 16 \text{ years}$$

30. The average age of 30 students is 9 years. If the age of their teacher is included, the average age becomes 10 years. The age of the teacher (in years) is

- (1) 27      (2) 31  
 (3) 35      (4) 40

**Ans : 4**

Total age of 30 students

$$= 9 \times 30 = 270 \text{ years}$$

Total age of 30 students and a teacher =  $31 \times 10 = 310$  years

$\therefore$  Age of the teacher

$$= 310 - 270 = 40 \text{ years}$$

31. From a class of 24 boys, a boy, aged 10 years, leaves the class and in his place a new boy is admitted. As a result, the average age of the class is increased by 2 months. What is the age of the new boy?

**Ans : 3**

Total age increased

$$= 2 \times 24 = 48 \text{ months}$$

$$= 4 \text{ years}$$

$\therefore$  Age of the new boy

$$= 10 + 4 = 14 \text{ years.}$$

32. The ratio of the present ages of Rahul and Rashmi is 2 : 1. The ratio of their ages after 30 years will be 7 : 6. What is the present age of Rahul?

- (1) 6 years      (2) 10 years  
(3) 12 years      (4) 20 years

**Ans : 3**

Let the present ages of Rahul and Rashmi be  $2x$  and  $x$  years respectively.

After 30 years,

$$\frac{2x+30}{x+30} = \frac{7}{6}$$

$$\Rightarrow 12x + 180 = 7x + 210$$

$$\Rightarrow 12x - 7x = 210 - 180$$

$$\Rightarrow 5x = 30 \Rightarrow x = \frac{30}{5} = 6$$

$\therefore$  Rahul's present age

$$= 2x = 2 \times 6 = 12 \text{ years}$$

33. 5 years ago, the average age of A, B, C and D was 45 years. With E joining them now, the average age of all the five is 49 years. How old is E?

- (1) 25 years      (2) 40 years  
(3) 45 years      (4) 64 years

**Ans : 3**

Sum of the present ages of A, B, C and D =  $45 \times 4 + 4 \times 5$

$$= 180 + 20 = 200 \text{ years}$$

Sum of the present ages of A, B, C, D and E

$$= 49 \times 5 = 245 \text{ years}$$

$\therefore$  Present age of E

$$= (245 - 200) \text{ years}$$

$$= 45 \text{ years}$$

34. The present average age of a family of four members is 36 years. If the present age of the youngest member of the family be 12 years, the average age of the family at the birth of the youngest member was

- (1) 48 years      (2) 40 years  
(3) 32 years      (4) 24 years

**Ans : 3**

Sum of the present ages of whole family

$$= 36 \times 4 = 144 \text{ years}$$

Sum of the ages of the family at the birth of youngest member

$$= 144 - 4 \times 12 = 96 \text{ years}$$

$\therefore$  Required Average age

$$= \frac{96}{3} = 32 \text{ years}$$

35. The present ages of A and B are in the ratio 4 : 5 and after 5 years they will be in the ratio 5 : 6. The present age of A is

- (1) 10 years      (2) 20 years  
(3) 25 years      (4) 40 years

**Ans : 2**

Let the present ages of A and B be  $4x$  and  $5x$  years respectively,

According to the question,

$$\frac{4x+5}{5x+5} = \frac{5}{6}$$

$$\Rightarrow 25x + 25 = 24x + 30$$

$$\Rightarrow x = 30 - 25 = 5$$

$\therefore$  A's present age

$$= 4x = 4 \times 5 = 20 \text{ years}$$

36. The average age of 40 students of a class is 18 years. When 20 new students are admitted to the same class, the average age of the students of the class is increased by 6 months. The average age of newly admitted student is

- (1) 19 years  
(2) 19 years 6 months  
(3) 20 years  
(4) 20 years 6 months

**Ans : 2**

Total age of 20 new students

$$= (60 \times 18.5 - 40 \times 18) \text{ years}$$

$$= (1110 - 720) \text{ years}$$

$$= 390 \text{ years}$$

$\therefore$  Their average age

$$= \frac{390}{20} = 19.5 \text{ years}$$

$$= 19 \text{ years } 6 \text{ months}$$

37. The average age of 40 students of a class is 15 years. When 10 new students are admitted, the average age is increased by 0.2 years. The average age of new students is

(1) 15.2 years      (2) 16 years

(3) 16.2 years      (4) 16.4 years

**Ans : 2**

Total age of 10 new students

$$= 50 \times 15.2 - 40 \times 15$$

$$= 760 - 600 = 160 \text{ years}$$

$\therefore$  Average age

$$= \frac{160}{10} = 16 \text{ years}$$

38. In a family, the average age of a father and mother is 35 years. The average age of the father, mother and their only son is 27 years. What is the age of the son?

(1) 12 years      (2) 11 years

(3) 10.5 years      (4) 10 years

**Ans : 2**

Father + mother

$$= 2 \times 35 = 70 \text{ years}$$

Father + mother + son

$$= 27 \times 3 = 81 \text{ years}$$

$$\therefore \text{ Son's age} = 81 - 70 = 11 \text{ years}$$

39. The average age of 9 students and their teacher is 16 year. The average age of the first four students is 19 years and that of the last five is 10 years. The teacher's age is

(1) 36 years      (2) 34 years

(3) 30 years      (4) 28 years

**Ans : 2**

Teacher's age

$$= 16 \times 10 - 19 \times 4 - 10 \times 5$$

$$= 160 - 76 - 50 = 34 \text{ years}$$

40. I am three times as old as my son, 15 years hence, I will be twice as old as my son. The sum of our ages is

(1) 48 years      (2) 60 years

(3) 64 years      (4) 72 years

**Ans : 2**

Let the son's present age =  $x$  years

$\therefore$  Father's present age =  $3x$  years

After 15 years

$$3x + 15 = 2(x + 15)$$

$$\Rightarrow x = 30 - 15 = 15$$

$\therefore$  Sum of their present ages

$$= x + 3x = 4x$$

$$= 4 \times 15 = 60 \text{ years}$$

41. The average age of group of 20 girls is 15 years and that of another group of 25 boys it is 24 years. The average age of the two groups mixed together is

(1) 19.5 years      (2) 20 years

(3) 21 years      (4) 21.5 years

**Ans : 2**

Required average age

$$= \left( \frac{20 \times 15 + 25 \times 24}{20 + 25} \right) \text{ years}$$

$$= \left( \frac{300 + 600}{45} \right) \text{ years}$$

$$= \left( \frac{900}{45} \right) \text{ years} = 20 \text{ years}$$

42. Five years ago, the average age of P, Q and R was 25 years and seven years ago, the average age of Q and R was 20 years. The present age of P is

(1) 36 years      (2) 29 years

(3) 24 years      (4) 21 years

**Ans : 1**

Sum of the present ages of P, Q and R

$$= (25 \times 3 + 3 \times 5) \text{ years}$$

$$= 54 \text{ years}$$

$\therefore$  P's present age

$$= (90 - 54) \text{ years} = 36 \text{ years}$$

43. The average age of eleven cricket players is 20 years. If the age of the coach is also included, the average age increases by 10%. The age of the coach is

(1) 48 years      (2) 44 years

(3) 40 years      (4) 36 years

**Ans : 2**

Total age of 11 players

$$= 11 \times 20 = 220 \text{ years}$$

Total age of 11 players and the teacher =  $12 \times 22 = 264$  years

$$\begin{aligned} \therefore \text{Age of the teacher} &= (264 - 220) \text{ years} \\ &= 44 \text{ years} \end{aligned}$$

44. The average age of a husband and a wife was 27 years when they married 4 years ago. The average age of the husband, the wife and a new-born child is 21 years now. The present age of the child is

- (1) 4 years            (2) 3 years  
(3) 2 years            (4) 1 year

**Ans : 4**

Sum of the present ages of husband and wife

$$= 2 \times 27 + 8 = 62 \text{ years}$$

Sum of the present ages of husband, wife and child

$$= 21 \times 3 = 63 \text{ years}$$

$\therefore$  present age of the child

$$= 63 - 62 = 1 \text{ year}$$

45. The average age of A and B is 30 years and that of B and C is 26 years. The difference of the age of A and B is :

- (1) 2 years            (2) 4 years  
(3) 6 years            (4) 8 years

**Ans : 4**

$$A + B = 60 \dots\dots\dots(i)$$

$$B + C = 52 \dots\dots\dots(ii)$$

Subtracting (ii) from (i).

$$A - C = 8 \text{ years}$$

46. The average age of a husband and wife, who were married 4 years ago, was 25 years at the time of their marriage. The average age of the family consisting of husband, wife and a child, born during the interval is 20 years today. The age of the child is

- (1) 1 year            (2) 2 years  
(3) 2.5 years        (4) 3 years

**Ans : 2**

Sum of the present ages of husband and wife

$$= 2 \times 25 + 2 \times 4 = 58 \text{ years}$$

Sum of the present ages of husband, wife and child

$$= 3 \times 20 = 60 \text{ years}$$

$\therefore$  Child's present age

$$= 60 - 58 = 2 \text{ years}$$

47. Five years ago, the average age of P and Q was 25. The average age of P, Q and R today is 25. Age of after 5 years will be

- (1) 15                (2) 20  
(3) 40                (4) 35

**Ans : 2**

Sum of the present ages of P and Q.

$$= 2 \times 25 + 10 = 60 \text{ years}$$

Sum of the present ages of P, Q and R

$$= 25 \times 3 = 75 \text{ years}$$

$\therefore$  R's present age

$$= 75 - 60 = 15 \text{ years}$$

$\therefore$  R's age after 5 years

$$= 20 \text{ years}$$

48. The average age of 45 persons is decreased by  $\frac{1}{9}$  year when one of them having 60 years is replaced by a new comer. Then the age of new comer is :

- (1) 45 years        (2) 55 years  
(3) 59 years        (4) 49 years

**Ans : 2**

Age of the new person

$$= 60 - 45 \times \frac{1}{9} = 55 \text{ years}$$

49. In a school with 600 students, the average age of the boys is 12 years and that of the girls is 11 years. If the average age of the school is 11 years and 9 months, then the number of girls in the school is

- (1) 450                (2) 150  
(3) 250                (4) 350

**Ans : 2**

Number of girls =  $x$

Number of boys =  $600 - x$

$$\therefore (600 - x) \times 12 + 11x$$

$$= 11\frac{3}{4} \times 600 = \frac{47}{4} \times 600$$

$$\Rightarrow 7200 - 12x + 11x = 7050$$

$$\Rightarrow x = 7200 - 7050 = 150$$

50. Average age of 8 men is increased by 3 years when two of them whose ages are 30 and 34 years are replaced by 2



persons. What is the average age of the 2 persons?

- (1) 24 years      (2) 32 years  
(3) 44 years      (4) 48 years

**Ans : 3**

Sum of the ages of two new persons

$$= 30 + 34 + 3 \times 8$$

$$= 88 \text{ years}$$

$\therefore$  Required average

$$\therefore \frac{88}{2} = 44 \text{ years}$$

51. The average age of a family of 10 members is 20 years. If the age of the youngest member of the family is 10 years, then the average age of the members of the family just before the birth of the youngest member was approximately

- (1) 27.14 years  
(2) 12.5 years  
(3) 14.28 years  
(4)  $11\frac{1}{9}$  years

**Ans : 4**

Sum of the present ages of 10 members

$$= 20 \times 10 = 200 \text{ years}$$

Total age of 9 members 10 years ago

$$= 100 \text{ years}$$

Required average

$$= \frac{100}{9} = 11\frac{1}{9} \text{ years}$$