

## BOATS AND STREAM

1. The speed of a boat in still water is 2 km/hr. If its speed upstream be 1 km/hr, then speed of the stream is  
 (1) 2 km/hr      (2) 3 km/hr      (3) 1 km/hr      (4) 1.5 km/hr      (5) None of these
2. A boat goes 14 km upstream in 56 minutes. The speed of stream is 2 km/hr. The speed of boat in still water is  
 (1) 6 km/hr      (2) 15 km/hr      (3) 14 km/hr      (4) 17 km/hr      (5) None of these
3. The speed of a boat in still water is 10 km/hr. If its speed downstream be 13 km/hr, then speed of the stream is:  
 (1) 1.5 km/hr      (2) 3 km/hr      (3) 11.5 km/hr      (4) 5.75 km/hr      (5) None of these
4. The rowing speed of man in still water is 20 km/hr. Going downstream, he moves at the rate of 25 km/hr. The rate of stream is  
 (1) 45 km/hr      (2) 2.5 km/hr      (3) 12.5 km/hr      (4) 5 km/hr      (5) None of these
5. A man can row downstream at the rate of 14 km/hr and upstream at 5 km/hr. Find man's rate in still water.  
 (1) 9.5 km/hr      (2) 8 km/hr      (3) 8.5 km/hr      (4) 9 km/hr      (5) None of these
6. A man can row downstream at the rate of 16 km/hr and upstream at 4 km/hr. Find man's rate in still water.  
 (1) 14 km/hr      (2) 13.5 km/hr      (3) 14.5 km/hr      (4) 15.5 km/hr      (5) None of these
7. A boat moves with a speed of 11 km per hour along the stream and 7 km per hour against the stream. The rate of the stream is \_\_\_\_\_.  
 (1) 1 km/hr      (2) 1.5 km/hr      (3) 2 km/hr      (4) 2.5 km/hr      (5) None of these
8. A man rows upstream 11 km and downstream 26 km taking 5 hours each time. The velocity of the current is \_\_\_\_\_.  
 (1) 1 km/hr      (2) 1.3 km/hr      (3) 1.5 km/hr      (4) 2.5 km/hr      (5) None of these
9. A man can row 4.5 km/hr in still water and he finds that it takes him twice as long to row up as to row down the river. Find the rate of stream.  
 (1) 2 km/hr      (2) 1.5 km/hr      (3) 2.5 km/hr      (4) 1.75 km/hr      (5) None of these
10. A man can row 6 km/hr in still water. It takes him twice as long to row up as to row down the river. Find the rate of the stream.  
 (1) 2 km/hr      (2) 3 km/hr      (3) 1.5 km/hr      (4) 1 km/hr      (5) None of these
11. The speed of a boat in still water is 15 km/hr and the rate of current is 3 km/hr. The distance travelled downstream in 12 minutes is  
 (1) 3.6 km      (2) 2.4 km      (3) 1.2 km      (4) 1.8 km      (5) None of these
12. Speed of a boat in standing water is 7 km/hr and the speed of the stream is 1.5 km/hr. A distance of 7.7 km, going upstream is covered in  
 (1) 1 hr 15 min      (2) 1 hr 12 min      (3) 1 hr 24 min      (4) 2 hr 6 min      (5) None of these
13. A boat travels upstream from B to A and downstream from A to B in 3 hours. If the speed of the boat in still water is 9 km/hr and the speed of the current is 3 km/hr, the distance between A and B (in km) is  
 (1) 4      (2) 6      (3) 8      (4) 12      (5) None of these
14. A man can row 6 km/hr in the still water. If the river is running at 2 km/hr, it takes him 3 hours to row to a place and back. How far is the place?  
 (1) 8 km      (2) 12 km      (3) 9 km      (4) 6 km      (5) None of these
15. The rate of flow of river water is 4 km/hr. A boat goes 6 km and back to the starting point in 2 hours. Find the speed of the boat in still water.  
 (1) 6 km/hr      (2) 8 km/hr      (3) 9 km/hr      (4) 10 km/hr      (5) None of these
16. In a stream running at 2 km/hr, a motorboat goes 12 km upstream and back again to the starting point in 2.5 hours. Find the speed of the motorboat in still water.  
 (1) 15 km/hr      (2) 12 km/hr      (3) 10 km/hr      (4) 9 km/hr      (5) None of these

17. A man can row 45 km upstream and 66 km downstream in 20 hrs. Find the speed of the man in still water and rate of the current.  
 (1) 8 km/hr, 3 km/hr      (2) 11 km/hr, 3 km/hr      (3) 11 km/hr, 8 km/hr  
 (4) 9 km/hr, 2 km/hr      (5) None of these
18. A man can row 60 km upstream and 88 km downstream in 26 hrs. Find the speed of the man in still water and rate of the current.  
 (1) 12 km/hr, 4 km/hr      (2) 16 km/hr, 6 km/hr      (3) 8 km/hr, 3 km/hr  
 (4) 7 km/hr, 4 km/hr      (5) None of these
19. Ajay can row a certain distance downstream in 5 hours and return the same distance in 7 hours. If the stream flows at the rate of 2 km per hour find the speed of Ajay in still water.  
 (1) 12 km/hr      (2) 10 km/hr      (3) 18 km/hr      (4) 16 km/hr      (5) None of these
20. Rohit can row a certain distance downstream in 8 hours and return the same distance in 12 hours. If the stream flows at the rate of 5 km per hour find the speed of Rohit in still water.  
 (1) 20 km/hr      (2) 30 km/hr      (3) 15 km/hr      (4) 25 km/hr      (5) None of these
21. A man can row at a speed of 4.5 km/hr in still water to a certain upstream point and back to the starting point in a river which flows at 1.5 km/hr. Find his average speed for total journey.  
 (1) 4 km/hr      (2) 6 km/hr      (3) 4.5 km/hr      (4) 5 km/hr      (5) None of these
22. A man row at a speed of 8 km/hr in still water to a certain distance upstream and back to the starting point in a river which flows at 4 km/hr. Find his average speed for total journey.  
 (1) 8 km/hr      (2) 6 km/hr      (3) 4 km/hr      (4) 10 km/hr      (5) None of these
23. A man can row 5 km/hr in still water. If the river is running at 1 km/hr, it takes 2 hours more in upstream than to go downstream for the same distance. How far is the place?  
 (1) 24 km      (2) 20 km      (3) 18 km      (4) 16 km      (5) None of these
24. A man can row 7 km/hr in still water. If the river is running at 3 km/hr, it takes 6 hours more in upstream than to go downstream for the same distance. How far is the place?  
 (1) 48 km      (2) 36 km      (3) 42 km      (4) 40 km      (5) None of these

### ANSWER

#### **BOATS AND STREAM**

1.3	2.4	3.2	4.4	5.1	6.2	7.3	8.3	9.2	10.1	11.1	12.3	13.4	14.1
15.2	16.3	17.1	18.3	19.1	20.4	21.1	22.2	23.1	24.4				

## ANSWERS WITH EXPLANATION

1. Speed of boat or man in still water ( $S_B$ ) =  $x$  km/hr
2. Velocity of the stream ( $V_s$ ) =  $y$  km/hr
3. Downstream speed ( $D_s$ ) =  $(x + y)$  km/hr
4. Upstream Speed ( $U_s$ ) =  $(x - y)$  km/hr
5. Speed of boat or man in still water =  $\frac{\text{Down stream speed} + \text{Upstream speed}}{2}$
6. Velocity of the stream =  $\frac{\text{Down stream speed} - \text{Upstream speed}}{2}$

1.3;  $S_B = 2$  km/hr

$(S_B - V_s) = 1$  km/hr

Hence, we get

$2 - V_s = 1$

$\therefore V_s = 2 - 1 = 1$  km/hr

2.4; Upstream speed =  $\frac{14}{56} \times 60 = 15$  km/hr

Now, we have

$S_B - V_s = 15$  km/hr

$V_s = 2$  km/hr

$\therefore S_B = 15 + V_s = 15 + 2 = 17$  km/hr

3.2;  $S_B = 10$  km/hr

$S_B + V_s = 13$  km/hr

$\therefore V_s = 13 - 10 = 3$  km/hr

4.4; Here, we have

$S_B = 20$  km/hr

$S_B + V_s = 25$  km/hr

$\therefore V_s = 25 - 20 = 5$  km/hr

5.1; Here, we have

$S_B + V_s = 14$  km/hr

And

$S_B - V_s = 5$  km/hr

$\therefore S_B = \frac{14+5}{2} = 9.5$  km/hr

6.2; Here we have

$S_B + V_s = 16$  km/hr

and,

$S_B - V_s = 11$  km/hr

$\therefore S_B = \frac{16+11}{2} = 13.5$  km/hr

7.3; Here, we have

$S_B + V_s = 11$  km/hr

And

$S_B - V_s = 7$  km/hr

$\therefore V_s = \frac{11-7}{2} = \frac{4}{2} = 2$  km/hr

8.3; Here, we have

$$S_B - V_s = \frac{11}{5} \text{ km/hr}$$

$$\text{And, } S_B + V_s = \frac{26}{5} \text{ km/hr}$$

$$V_s = \frac{\left(\frac{26}{5} - \frac{11}{5}\right)}{2} = 1.5 \text{ km/hr}$$

9.2; Here, we have

### Downstream

### Upstream

Time : 1  
Speed : 2  
Now, the ratio of speed of the boat ( $S_B$ ) in still water and velocity of the stream ( $V_s$ )

$S_B$	$V_s$
$\frac{(D_s + U_s)}{2}$	$\frac{(D_s - U_s)}{2}$
$\frac{(2+1)}{2}$	$\frac{(2-1)}{2}$

Now we get,

$$\frac{4.5}{V_s} = \frac{3}{1}$$

$$\therefore V_s = \frac{4.5 \times 1}{3} = 1.5 \text{ km/hr}$$

10.1; Here, we have

Downstream

<u>Time</u>	<u>1</u>		<u>2</u>
<u>Speed</u>	<u>2</u>		<u>1</u>

Therefore,

$S_B$	$V_s$
$\frac{(2+1)}{2}$	$\frac{(2-1)}{2}$
$\frac{3}{2}$	$\frac{1}{2}$

Hence,

$$\frac{6}{V_s} = \frac{3}{1}$$

$$\therefore V_s = \frac{6 \times 1}{3} = 2 \text{ km/hr}$$

11.1; Here we have,

$S_B = 15$  km/hr

$V_s = 3$  km/hr

Down stream speed =  $S_B + V_s = 18$  km/hr  
Now, the distance travelled in 12 minutes

in downstream =  $\frac{18}{60} \times 12 = 3.6$  km

12.3; Here, we have

$S_B = 7$  km/hr

$$V_s = 1.5 \text{ km/hr}$$

Upstream speed =  $7 - 1.5 = 5.5 \text{ km/hr}$   
Now, the required time to cover the distance  
of 7.7 km in upstream

$$= \frac{7.7}{5.5} \text{ hrs} = \frac{7}{5} \text{ hrs}$$

$$= \frac{7}{5} \times 60 = 84 \text{ min i.e. } 1 \text{ hr and } 24 \text{ mins}$$

13.4; Here, we have,

$$S_B = 9 \text{ km/hr}$$

$$V_s = 3 \text{ km/hr}$$

$$\text{Downstream speed} = (9 + 3) = 12 \text{ km/hr}$$

$$\text{Upstream speed} = (9 - 3) = 6 \text{ km/hr}$$

According to given question,

$$\frac{D}{12} + \frac{D}{6} = 3$$

(Where D = Distance between A and B)

Now,

$$D = \frac{12 \times 6 \times 3}{(12 \times 1 + 6 \times 1)} = \frac{12 \times 6 \times 3}{18} = 12 \text{ km}$$

14.2; Here, we have

$$S_B = 6 \text{ km/hr}$$

$$V_s = 2 \text{ km/hr}$$

$$\text{Downstream speed} = (6 + 2) = 8 \text{ km/hr}$$

$$\text{Upstream speed} = (6 - 2) = 4 \text{ km/hr}$$

According to the given question,

$$\frac{D}{8} + \frac{D}{4} = 3 \quad [\text{Where D = Distance}]$$

$$\therefore D = \frac{8 \times 4 \times 3}{(4 \times 1 + 8 \times 1)} = \frac{8 \times 4 \times 3}{12} = 8 \text{ km}$$

15.2; Here,

$$V_s = 4 \text{ km/hr}$$

$$D = 6 \text{ km}$$

$$T = 2 \text{ hrs}$$

Now, we have

$$\frac{6}{(S_B + 4)} + \frac{6}{(S_B - 4)} = 2$$

Solving, above equation, we get

$$S_B = 8 \text{ km/hr}$$

NOTE: If you go through the given options you  
can solve the questions easily.

16.3. Here, we have

$$V_s = 2 \text{ km/hr}$$

$$D = 12 \text{ km}$$

$$T = 2.5 \text{ hrs}$$

Now, we have

$$\frac{12}{(S_B + 2)} + \frac{12}{(S_B - 2)} = 2.5$$

Solving above equation, we get

NOTE : If you go through the given choices  
your task will be very easy.  
17.1; We have,

$$\frac{45}{(S_B - V_s)} + \frac{66}{(S_B + V_s)} = 15 \text{ hrs}$$

Also,

$$\frac{65}{(S_B - V_s)} + \frac{77}{(S_B + V_s)} = 20 \text{ hrs}$$

Now, suppose

$$\frac{1}{(S_B - V_s)} = a$$

and,

$$\frac{1}{(S_B + V_s)} = b$$

Now, we get

$$45a + 66b = 15 \dots \text{(i)}$$

$$65a + 77b = 20 \dots \text{(ii)}$$

Solving two equations we get,

$$a = \frac{1}{5} \therefore S_B - S_v = 5 \text{ km/hr}$$

and

$$b = \frac{1}{11} \therefore S_B + S_v = 11 \text{ km/hr}$$

$$\text{Now, } S_B = \frac{5+11}{2} = 8 \text{ km/hr}$$

Where,

$$V_s = \frac{11-5}{2} = 3 \text{ km/hr}$$

NOTE : If you go through the given options you  
can solve the question very easily.

## SIMPLE INTEREST

1. A sum of ₹ 4000 is lent for 5 years at the rate of 15% per annum. Find the interest.  
 (1) ₹ 3000      (2) ₹ 2000      (3) ₹ 1000      (4) ₹ 1500      (5) None of these
2. If the simple interest on ₹ 625 increases by ₹ 25, when the time increases by 2 years. Find the rate per cent per annum.  
 (1) 2%      (2) 3%      (3) 1%      (4) 0.5%      (5) None of these
3. A man deposits ₹ 1350 in a bank at 5% per annum and ₹ 1150 in another bank at 6% per annum. Find the rate of interest for the whole sum.  
 (1) 5.40%      (2) 6.40%      (3) 5.46%      (4) 115%      (5) None of these
4. The simple interest on a sum of money is  $\frac{4}{9}$  of the principal, and the number of years is equal to the rate per cent per annum. Find the rate per cent.  
 (1)  $6\frac{2}{3}\%$       (2)  $5\frac{3}{5}\%$       (3)  $7\frac{2}{3}\%$       (4)  $6\frac{1}{3}\%$       (5) None of these
5. If the simple interest on ₹ 1350 be more than the interest on ₹ 1250 by ₹ 20 in 2 years, find the rate per cent per annum.  
 (1) 5%      (2) 10%      (3) 6%      (4) 8%      (5) None of these
6. If simple interest on ₹ 375 increases by ₹ 75, when the rate % increases by 5% per annum. Find the time.  
 (1) 2 years      (2) 8 years      (3) 4 years      (4) None of these      (5) None of these
7. What annual instalment will discharge a debt of ₹ 4,200 due in 5 years at 10% simple interest?  
 (1) ₹ 700 per year      (2) ₹ 350 per year      (3) ₹ 750 per year      (4) ₹ 650 per year      (5) None of these
8. Arun borrowed a sum of money from Jayant at the rate of 8% per annum simple interest for the first four years, 10% per annum for the next 6 years and 12% per annum for the period beyond 10 years. If he pays a total of ₹ 12160 as interest only at the end of 15 years, how much money did he borrow?  
 (1) ₹ 8000      (2) ₹ 10000      (3) ₹ 12000      (4) ₹ 9000      (5) None of these
9. In what time does a sum of money become thrice at the simple interest rate of 8% per annum?  
 (1) 30 years      (2) 15 years      (3) 20 years      (4) 25 years      (5) None of these
10. A certain sum is invested for certain time. It amounts to ₹ 400 at 10% per annum. But when invested at 4% per annum, it amounts to ₹ 200. Find the time.  
 (1) 100 years      (2) 75 years      (3) 50 years      (4) 60 years      (5) None of these
11. A certain sum is invested for certain time. It amounts to ₹ 150 at 5% per annum. But when invested at 3% per annum, it amounts to ₹ 100. Find the sum.  
 (1) ₹ 50      (2) ₹ 25      (3) ₹ 30      (4) ₹ 60      (5) None of these
12. A sum was put at SI at a certain rate for 3 years. Had it been put at 4% higher rate, it would have fetched ₹ 600 more. Find the sum.  
 (1) ₹ 5000      (2) ₹ 4000      (3) ₹ 6000      (4) ₹ 3000      (5) None of these
13. A certain sum of money amounts to ₹ 550 in 3 years and to ₹ 650 in 4 years. Find the sum.  
 (1) ₹ 250      (2) ₹ 300      (3) ₹ 150      (4) ₹ 350      (5) None of these
14. A sum was put at SI at a certain rate for 4 years. Had it been put at 5% lower rate, it would have fetched ₹ 100 less. Find the sum.  
 (1) ₹ 500      (2) ₹ 5000      (3) ₹ 400      (4) ₹ 4000      (5) None of these
15. Anish borrowed ₹ 1500 at the rate of 12% and an other amount at the rate of 15% for two years. The total interest paid by him was ₹ 9000. How much did he borrow?  
 (1) ₹ 32000      (2) ₹ 33000      (3) ₹ 30000      (4) ₹ 63000      (5) None of these
16. At a certain rate of simple interest ₹ 400 amounted to ₹ 460 in 3 years. If the rate of interest be decreased by 3%, what will be the amount after 3 years?  
 (1) ₹ 424      (2) ₹ 484      (3) ₹ 242      (4) ₹ 848      (5) None of these
17. ₹ 1,200 amounts to ₹ 1,632 in 4 years at a certain rate of simple interest. If the rate of interest is increased by 1%, it would amount to how much?  
 (1) ₹ 1335      (2) ₹ 1644      (3) ₹ 1670      (4) ₹ 1680      (5) None of these
18. The simple interest on a sum of money will be ₹ 150 after 4 years. In the next 4 years principal becomes 5 times, what will be the total interest at the end of the 8th year?  
 (1) ₹ 950      (2) ₹ 850      (3) ₹ 900      (4) ₹ 860      (5) None of these
19. The simple interest on a sum of money will be ₹ 225 after 3 years. In the next 5 years principal becomes 3 times, what will be the total interest at the end of the 8th year?  
 (1) ₹ 1250      (2) ₹ 1330      (3) ₹ 1360      (4) ₹ 1350      (5) None of these
20. A sum of ₹ 1521 is lent out in two parts in such a way that the interest on one part at 10% for 5 years is equal to that on another part at 8% for 10 years. Find the two sums.  
 (1) ₹ 926, ₹ 595      (2) ₹ 906, ₹ 615      (3) ₹ 916, ₹ 605      (4) ₹ 936, ₹ 585      (5) None of these
21. A sum of money becomes two times at the simple interest rate of 2% per annum. At what rate per cent will it become five fold?  
 (1) 10%      (2) 8%      (3) 6%      (4) 9%      (5) None of these

22. A certain sum of money amounted to ₹ 810 at 4% in a time in which ₹ 450 amounted to ₹ 720 at 3%. If the rate of interest is simple, find the sum.  
 (1) ₹ 500      (2) ₹ 450      (3) ₹ 600      (4) ₹ 475      (5) None of these
23. A certain sum of money amounts to ₹ 5000 in 5 years at 10% per annum. In how many years will it amount to ₹ 6000 at the same rate?  
 (1) 8 years      (2) 6 years      (3) 10 years      (4) 9 years      (5) None of these
24. ₹ 8829 is divided into three parts in such a way that their amounts at 4% per annum simple interest after 5, 6 and 8 years are equal. Find each part of the sum.  
 (1) ₹ 3069, ₹ 2970, ₹ 2790      (2) ₹ 3609, ₹ 2970, ₹ 2790      (3) ₹ 3089, ₹ 2970, ₹ 2790  
 (4) ₹ 3069, ₹ 2960, ₹ 2760      (5) None of these
25. What principal will amount to ₹ 560 in 3 years at 4 per cent per annum simple interest?  
 (1) ₹ 540      (2) ₹ 500      (3) ₹ 550      (4) ₹ 560      (5) None of these
26. A person lent a certain sum of money at 4% simple interest, and in 5 years the interest amounted to ₹ 520 less than the sum lent. Find the sum lent.  
 (1) ₹ 600      (2) ₹ 650      (3) ₹ 700      (4) ₹ 750      (5) None of these
27. A sum of money doubles itself in 5 years. It will become 4 times of itself in  
 (1) 10 years      (2) 12 years      (3) 15 years      (4) 20 years      (5) None of these
28. The simple interest on ₹ 1250 will be less than the interest on ₹ 1400 at 3% simple interest by ₹ 45. Find the time.  
 (1) 10 years      (2) 9 years      (3) 8 years      (4) 6 years      (5) None of these
29. The difference in simple interests on a certain sum at 4% per annum for 3 years and at 5% per annum for 2 years is ₹ 50. Find the sum.  
 (1) ₹ 5000      (2) ₹ 4000      (3) ₹ 3000      (4) ₹ 2500      (5) None of these
30. The difference between the interest received from two different banks on ₹ 200 for 3 years is ₹ 60. Find the difference between their rates.  
 (1) 5%      (2) 7%      (3) 10%      (4) 9%      (5) None of these
31. A sum of money lent out at simple interest amounts to ₹ 720 in 2 years and to ₹ 1020 in 7 years. Find the rate per cent per annum.  
 (1) 10%      (2) 12%      (3) 5%      (4) 15%      (5) None of these
32. Sudhir borrows ₹ 6000 from a bank at SI. After 4 years he paid ₹ 2500 to the bank and at the end of 5 years from the date of borrowing he paid ₹ 4560 to the bank to settle the account. Find the rate of interest.  
 (1) 3%      (2) 3.5%      (3) 3.85%      (4) 4.5%      (5)  $3\frac{47}{55}\%$
33. Some amount out of ₹ 950 was lent at 6% per annum and the remaining at 4% per annum. If the total simple interest from both the fractions in 5 years was ₹ 200, find the sum lent at 6% per annum.  
 (1) ₹ 700      (2) ₹ 100      (3) ₹ 250      (4) ₹ 450      (5) None of these
34. Out of a certain sum,  $\frac{1}{3}$  rd is invested at 3%,  $\frac{1}{6}$  th at 6% and the rest at 8%. If the simple interest for 2 years from all these investments amounts to ₹ 600, find the original sum.  
 (1) ₹ 5000      (2) ₹ 6000      (3) ₹ 5200      (4) ₹ 5500      (5) None of these
35. The simple interest on certain sum ₹ 625 is ₹ 100, and the number of years is equal to the rate per cent per annum. Find the rate per cent.  
 (1) 5%      (2) 4%      (3) 3%      (4) 4.5%      (5) None of these
36. A certain sum of money is borrowed by a person at 3% simple interest for 4 years. If he has to pay ₹ 120 as interest, find the total amount he has to pay.  
 (1) ₹ 1020      (2) ₹ 820      (3) ₹ 1120      (4) ₹ 1220      (5) None of these
37. The simple interest on ₹ 400 for 5 years together with that on ₹ 600 for 4 years came to ₹ 132, the rate being the same in both the cases. Find the rate per cent of interest.  
 (1) 1%      (2) 5%      (3) 4%      (4) 3%      (5) None of these
38. On ₹ 3000 invested at a simple interest rate 6 per cent per annum, ₹ 900 is obtained as interest in certain years. In order to earn ₹ 1600 as interest on ₹ 4000 in the same number of years, what should be the rate of simple interest?  
 (1) 7 per cent      (2) 8 per cent      (3) 9 per cent      (4) Data inadequate      (5) None of these
39. At what rate of interest per annum will a sum double itself in 8 years?  
 (1) 12%      (2) 5%      (3) 6%      (4)  $10\frac{1}{2}\%$       (5) None of these
40. If x is the simple interest on y and y is the simple interest on z, the rate % and the time being the same in both cases, what is the relation between x, y and z?  
 (1)  $x^2 = yz$       (2)  $y^2 = xz$       (3)  $z^2 = xy$       (4)  $xyz = 1$       (5) None of these

### ANSWER

#### **SIMPLE INTEREST**

1.1	2.1	3.3	4.1	5.2	6.3	7.1	8.1	9.4	10.3	11.2	12.1	13.1	14.1
15.2	16.1	17.4	18.3	19.4	20.4	21.2	22.2	23.1	24.1	25.2	26.2	27.3	28.1
29.4	30.3	31.1	32.5	33.2	34.1	35.2	36.3	37.4	38.2	39.1	40.2		

# ANSWERS WITH EXPLANATION

$$1. \text{ Interest} = \frac{P \times r \times t}{100}$$

$$2. \text{ Rate} = \frac{I \times 100}{P \times t}$$

$$3. \text{ Time} = \frac{I \times 100}{P \times r}$$

$$4. \text{ Amount} = P + \text{Interest}$$

$$= \frac{P \times (100 + r \times t)}{100}$$

$$5. \text{ Sum} = \frac{A_1 \times r_2 - A_2 \times r_1}{r_2 - r_1}$$

$$6. \text{ Sum} = \frac{A_1 \times t_2 - A_2 \times t_1}{t_2 - t_1}$$

## SIMPLE INTEREST

1.1; Here  $r = 15\%$

$t = 5$  years

Therefore, the interest would be  $(15 \times 5) = 75\%$  of the sum.

$$\text{Thus, Interest} = \frac{4000 \times 75}{100} = ₹ 3000$$

2.1; Here, the extra interest is  $\left( \frac{25}{625} \times 100 = \right) 4\%$  of the sum.

Since, the increased time is two years, therefore the extra interest would be  $(2 \times r)\%$  of the sum (where  $r$  is the rate of interest).

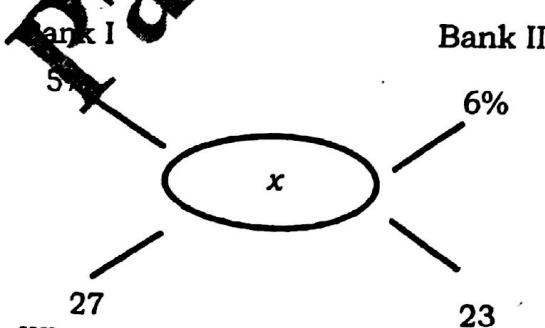
Now, we can conclude that

$$(2 \times r)\% = 4\%$$

$$\therefore r = 2\%$$

3.3; Here, the ratio of investments is  $1350 : 1150$   
 $27 : 23$

Now, use Alligation Method



Where  $x$  is the rate of interest for the whole sum.

Now,

$$x = \frac{5 \times 27 + 6 \times 23}{(27 + 23)}$$

$$= \frac{(135 + 138)}{50} = \frac{273}{50}$$

$$= 5.46\%$$

4.1; From the given statement in the question part we can conclude that the ratio of sum and interest is  $9 : 4$ .

Now, we have

Sum	Interest	Rate	Time
9	: 4	$x\%$	$x$ years

In the above case interest is  $x^2\%$  of the sum i.e.

$$\frac{x^2}{100} = 4$$

$$\text{or, } x^2 = \frac{4 \times 100}{9}$$

$$\therefore x = \sqrt{\frac{4 \times 100}{9}} = \frac{20}{3} = 6\frac{2}{3}$$

Thus, the required rate of interest is  $6\frac{2}{3}\%$

5.2; Look at the question part carefully. You came to know that ₹ 20 is the interest for a period of 2 years on the sum  $(1350 - 1250) = ₹ 100$ .

Hence, the required rate of interest =

$$\frac{20 \times 100}{100 \times 2} = 10\%$$

6.3; Here the extra interest (Rs. 75) is

$$\left( \frac{75}{375} \times 100 = \right) 20\% \text{ of the sum.}$$

Now, we have,  $5 \times t = 20$  (where 't' is time period)

$$\therefore t = \frac{20}{5} = 4 \text{ years}$$

7. Suppose the annual installment is ₹ 100.

Now, let us calculate that how much amount of debt will be discharged, in 5 years at the rate of 10 pcpa, through the annual installment of ₹ 100.

<u>Year</u>	<u>Sum</u>	<u>Interest</u>	<u>Total</u>
1st	100	$10 \times 4$	₹ 140
2nd	100	$10 \times 3$	₹ 130
3rd	100	$10 \times 2$	₹ 120
4th	100	$10 \times 1$	₹ 110
5th	100	NIL	₹ 100 ₹ 600

Thus, we came to know that an annual installment will discharge a debt of ₹ 600 in the given situation.

Hence, for a debt of ₹ 420, the annual installment :-

$$= \frac{100 \times 4200}{600} \\ = ₹ 700$$

8.1; Suppose, the borrowed amount by Arun is ₹ 100.

Then, the total interest for the above sum in a period of 15 years:-

First four years	$8 \times 4$	= ₹ 32
First Six years	$10 \times 6$	= ₹ 60
First five years	$12 \times 5$	= ₹ 60
		₹ 152

Now, we came to that if interest is ₹ 152 then the sum is ₹ 100.

For, the interest of ₹ 12150 the sum will be

$$\left( \frac{100 \times 12150}{152} \right) = ₹ 8000.$$

9.4; Here the ratio of sum and amount is 1 : 3. Therefore, the ratio of sum and interest would be 1 : 2.

Now, we have

<u>Sum</u>	<u>Interest</u>	<u>Rate</u>	<u>Time</u>
1	: 2	8%	t years

Note that the interest is  $\left( \frac{2}{1} \times 100 \right)$  = 200% of the sum.

Now, we get

$$8 \times t = 200$$

$$\therefore t = \frac{200}{8} = 25 \text{ years}$$

10.3; Here,

$$\text{sum} = \frac{200 \times 10 - 400 \times 4}{10 - 4} = \frac{200}{3}$$

$$\text{Interest} = 400 - \frac{200}{3} = \frac{1000}{3}$$

Thus, Sum : Interest

$$\frac{200}{3} : \frac{1000}{3}$$

$$1 : 5$$

Now, we have

<u>Sum</u>	<u>Interest</u>	<u>Rate</u>	<u>Time</u>
1	: 5	10%	years

Here, interest is  $\left( \frac{5 \times 100}{1} \right) = 500\% \text{ of sum.}$

$$\text{Hence, required time} = \frac{500}{10} = 50 \text{ years}$$

$$11.2; \text{Required sum} = \frac{100 \times 5 - 150 \times 3}{5 - 3} = \frac{50}{2} = ₹ 25.$$

12.1; Here, extra interest ₹ 600 is  $(3 \times 4) = 12\%$  of the sum.

$$\text{Hence, sum} = \frac{600}{12} \times 100 = ₹ 5000$$

$$13.1; \text{Required sum} = \frac{550 \times 4 - 650 \times 3}{4 - 3}$$

$$= \frac{2200 - 1950}{4 - 3} = \frac{250}{1} = ₹ 250$$

14.1; According to the given information, ₹ 100 is  $(4 \times 5) = 20\%$  of the sum.

$$\text{Hence, sum} = \frac{100 \times 100}{20} = ₹ 500$$

15.2; Here,

$$\frac{15000 \times 12 \times 2}{100} + \frac{x \times 15 \times 2}{100} = 9000$$

$$\text{or, } 3600 + \frac{3}{10}x = 9000$$

$$\therefore x = \frac{(9000 - 3600) \times 10}{3} = \frac{5400 \times 10}{3} = ₹ 18000$$

Hence, the total borrowed amount  
= 15000 + 18000 = ₹ 33000

$$16.1; \text{The required new amount} \\ - 460 - (3 \times 3)\% \text{ of } 400 = 460 - 26 = ₹ 424$$

17.4. The required new amount

$$= 1632 + (4 \times 1)\% \text{ of } 1200 \\ = 1632 + 48 = ₹ 1680$$

$$18.3; \text{Total interest at the end of 8 years} \\ = 150 + 5 \times 150 = ₹ 900.$$

19.4; Sum	Time	Interest
$x$	3 years	₹ 225
$x$	1 year	₹ 75
$3x$	1 year	₹ 225
$3x$	5 years	₹ 1125

Hence, the total interest at the end of 8 years would be  $225 + 1125 = ₹ 1350$ .

- 20; Suppose, the two parts of the sum are  $P_1$  and  $P_2$ .

According to the given information,

$$(10 \times 5)\% \text{ of } P_1 = (8 \times 10)\% \text{ of } P_2$$

$$\text{Therefore, } \frac{P_1}{P_2} = \frac{8 \times 10}{10 \times 5} = \frac{8}{5}$$

$$\text{Hence, } P_1 = \frac{8 \times 1521}{(8+5)} = ₹ 936$$

$$P_2 = 1521 - 936 = ₹ 585$$

21.2; Here,

<u>Sum</u>	<u>Interest</u>	<u>Rate</u>	<u>Sum</u>	<u>Interest</u>	<u>Rate</u>
1 : 1	2%	1 : 4	?		

From, the above information, it is clear that interest equal to 100% of the sum will be obtained if rate of interest is 2%. In order to obtain interest equal to 400% of the sum, the rate must be  $(2 \times 4 =) 8\%$ .

22.2; Here,

<u>Sum</u>	<u>Interest</u>	<u>Rate</u>	<u>Time</u>
₹ 450	₹ (720 - 450)	3%	?
Time = $\frac{270 \times 100}{450 \times 3} = 20 \text{ years}$			

Now,

<u>Sum</u>	<u>Amount</u>	<u>Rate</u>	<u>Time</u>
$x$	₹ 810	4%	20 years

Here, ₹ 810 is the sum of principal and interest.

Thus, we can conclude that ₹ 810 is  $(100 + 20 \times 4) \% \text{ of the sum.}$

$$\text{Hence, sum} = \frac{810 \times 100}{180} = ₹ 450$$

23.1; Here, the amount ₹ 5000 is  $(100 + 5 \times 10)\%$  of the sum. Therefore, the amount ₹ 6000

would be  $\left( \frac{150}{5000} \times 6000 \right) 180\% \text{ of }$

sum, where interest is equal to 80% of sum.  
Thus, we get  $10 \times t = 80$

$$\therefore t = 8 \text{ years}$$

24.1; Suppose the three parts of the sum be  $P_1$ ,  $P_2$

and  $P_3$ .  
According to the given information  
 $(100 + 4 \times 5)\% \text{ of } P_1 = (100 + 4 \times 6)\% \text{ of } P_2$   
 $= (100 + 4 \times 8)\% \text{ of } P_3$   
i.e.  $120\% \text{ of } P_1 = 124\% \text{ of } P_2 = 132\% \text{ of } P_3$   
Hence,

$$\frac{P_1}{P_2} = \frac{124}{120} = \frac{31}{30}$$

And,

$$\begin{aligned} \frac{P_2}{P_3} &= \frac{132}{124} = \frac{33}{31} \\ P_1 &\quad P_2 \\ 31 &\quad 30 \\ &\quad 33 \end{aligned} \quad : \quad 31$$

$$\begin{array}{ccc} 31 \times 33 & 30 \times 33 & : 30 \times 31 \\ 1023 & 990 & : 930 \end{array}$$

Thus,

$$P_1 = \frac{1023 \times 8829}{(1023 + 990 + 930)}$$

$$= \frac{1023 \times 8829}{2943} = ₹ 3069$$

$$P_2 = \frac{990 \times 8829}{2943} = ₹ 2970$$

$$P_3 = \frac{930 \times 8829}{2943} = ₹ 2790$$

25.2; Here ₹ 560 is  $(100 + 3 \times 4)\%$  of the sum.

$$\text{Hence, sum} = \frac{560 \times 100}{112} = ₹ 500$$

26.2; Here, ₹ 520 is  $(100 - 4 \times 5)\%$  of the sum.

$$\text{Hence, sum} = \frac{520 \times 100}{80} = ₹ 650.$$

27.3; Here,

<u>Sum</u>	<u>Interest</u>	<u>Time</u>	<u>Sum</u>	<u>Interest</u>	<u>Time</u>
1 : 1	5Y	1 : 3	?		

Note that the interest equal to 100% of the sum is obtained in 5 years. In order to obtain interest equal to 300% of the sum, the required time would be  $(5 \times 3 =) 15$  years.

28.1; Here

<u>Sum</u>	<u>Interest</u>	<u>Rate</u>	<u>Time</u>
(₹ 1400 - 1250)	45	3%	?

$$\text{Hence, required time} = \frac{45 \times 100}{150 \times 3} = 10 \text{ Years}$$

29.4; For the first case the interest would be  $(4 \times 3) = 12\%$  of the sum. Whereas, for the second case the interest would be  $(5 \times 2) = 10\%$  of the sum.

Now, according to the given information,

$$(12 - 10)\% \text{ of the sum} = ₹ 50$$

$$\text{Hence, sum} = \frac{50 \times 100}{2} = ₹ 2500$$

30.3; The required difference in rate of interest.

$$= \frac{60 \times 100}{200 \times 3} = 10\%$$

$$31.3; \text{Here, Sum} = \frac{720 \times 7 - 1020 \times 2}{7 - 2}$$

$$= \frac{5040 - 2040}{5} = \frac{3000}{5} = ₹ 600$$

Now, we have

<u>Sum</u>	<u>Interest</u>	<u>Time</u>	<u>Rate</u>
₹ 600	₹ (720 - 600)	2 years	?

$$\text{Hence, required rate of interest} = \frac{120 \times 100}{600 \times 2} = 10\%$$

32.5; Total interest paid by Sudhir is  $(4560 + 2000) - 6000 = ₹ 1060$

Now, according to the given information

$$= \frac{6000 \times 4 \times r}{100} + \frac{(6000 - 2500) \times 1 \times r}{100} = 1060$$

$$\text{or, } 240r + 35r = 1060$$

$$\text{or, } 275r = 1060$$

$$\therefore r = \frac{1060}{275} \approx 3.854\%$$

$$33.2; \text{Here, } \frac{x \times 6 \times 5}{100} + \frac{(950 - x) \times 4 \times 5}{100} = 200$$

$$\text{or, } \frac{30x + 950 \times 20 - 20x}{100} = 200$$

$$\text{or, } 10x = 20000 - 19000$$

$$x = \frac{1000}{10} = 100$$

34.1; Suppose, the sum is ₹ 600

<u>Part of Sum</u>	<u>Rate</u>	<u>Interest (in a year)</u>
$600 \times \frac{1}{3} = 200$	3%	₹ 6
$600 \times \frac{1}{6} = 100$	6%	₹ 6
Remaining = 300	8%	$\frac{24}{76}$

Thus, we can conclude that the interest for two years for the sum ₹ 600 is  $(36 \times 2) = ₹ 72$ .

Now, we have

$$\frac{\text{Interest}}{₹ 72} : \frac{\text{Sum}}{₹ 600} :: \frac{\text{Interest}}{₹ 600} : ?$$

Thus, the required sum  $= \frac{600 \times 600}{72} = ₹ 5,000$

35.2; Here we have

<u>Sum</u>	<u>Interest</u>	<u>Rate</u>	<u>Time</u>
₹ 625	₹ 100	x %	x years

Now, we can conclude that

$$\frac{625 \times x^2}{100} = 100$$

$$\text{or, } x^2 = \frac{100 \times 100}{625}$$

$$\therefore x = 4$$

Hence, the required rate of interest is 4%.

36.3; Here, ₹ 120 is  $(3 \times 12) = 36\%$  of the sum. Hence, the required amount will be 112% of the sum.

$$\text{i.e. } \frac{120}{12} \times 112 = ₹ 1120$$

$$37.4; \text{We have } \frac{400 \times 5 \times r}{100} + \frac{600 \times 4 \times r}{100} = 132$$

$$\text{or, } 20r + 24r = 132$$

$$\text{or, } 44r = 132$$

$$\therefore r = \frac{132}{44} = 3\%$$

38.2; Here,

<u>Sum</u>	<u>Interest</u>	<u>Rate</u>	<u>Time</u>
₹ 3000	₹ 900	6%	?

$$\text{Time} = \frac{900 \times 100}{3000 \times 6} = 5 \text{ years}$$

Now, we have

<u>Sum</u>	<u>Interest</u>	<u>Time</u>	<u>Rate</u>
₹ 4000	₹ 1600	5 years	?

$$\text{The required rate of interest} = \frac{1600 \times 100}{4000 \times 5} = 8\%$$

39.1; Here,

<u>Sum</u>	<u>Interest</u>	<u>Time</u>	<u>Rate</u>
1	1	8 years	?

Here the interest is 100% of the sum. Thus,

$$\text{the required rate of interest} = \frac{100}{8} = 12.5\%$$

40.2; Here, we have

$$\frac{y \times r \times t}{100} = x \quad \dots \dots \dots (1)$$

$$\text{Also, } \frac{z \times r \times t}{100} = y \quad \dots \dots \dots (2)$$

$$\text{Now, } \frac{y \times r \times t}{100} = \frac{x}{z}$$

$$\frac{z \times r \times t}{100} = y^2$$

$$\text{or, } \frac{y}{z} = \frac{x}{y}$$

$$\therefore y^2 = xz.$$

## COMPOUND INTEREST

1. Raviraj invested an amount of ₹ 10,000 at compound interest rate of 10 per cent per annum for a period of three years. How much amount will Raviraj get after 3 years?  
 (1) ₹ 12340      (2) ₹ 13210      (3) ₹ 13320      (4) ₹ 13310      (5) None of these
2. Seema invested an amount of ₹ 16000 for two years at compound interest and received an amount of ₹ 17640 on maturity. What is the rate of interest?  
 (1) 8 pcpa      (2) 5 pcpa      (3) 4 pcpa      (4) 3 pcpa      (5) None of these
3. Find the amount of ₹ 1000 in 1 year at 5 per cent per annum compound interest payable half yearly.  
 (1) ₹ 1050 (Approx)      (2) ₹ 950 (Approx)      (3) ₹ 1125 (Approx)      (4) ₹ 1025 (Approx)      (5) None of these
4. Find the amount of ₹ 6400 in 1 year 6 months at 5 pcpa compound interest, interest being calculated half yearly.  
 (1) ₹ 6882.10      (2) ₹ 6892.10      (3) ₹ 6982.10      (4) ₹ 7282.05      (5) None of these
5. Find the compound interest on ₹ 10000 in 9 months at 4 p.c.p.a interest payable quarterly.  
 (1) ₹ 303 (Approx)      (2) ₹ 313 (Approx)      (3) ₹ 203 (Approx)      (4) ₹ 204 (Approx)      (5) None of these
6. Find the compound interest on ₹ 8000 in 3 months at 5 p.c.p.a interest payable quarterly.  
 (1) ₹ 250      (2) ₹ 200      (3) ₹ 150      (4) ₹ 100      (5) None of these
7. What principal will amount to ₹ 1352 in 2 years at 4 p.c.p.a compound interest?  
 (1) ₹ 1520      (2) ₹ 1260      (3) ₹ 1250      (4) ₹ 1220      (5) None of these
8. On what principal will the compound interest for 3 years at 5 p.c.p.a amount to ₹ 63.05?  
 (1) ₹ 400      (2) ₹ 500      (3) ₹ 450      (4) ₹ 550      (5) None of these
9. ₹ 50000 is borrowed at CI at the rate of 1% for the first year, 2% for the second year and 3% for the third year. Find the amount to be paid after 3 years.  
 (1) ₹ 50355.3      (2) ₹ 53055.3      (3) ₹ 53505.3      (4) ₹ 53053.5      (5) None of these
10. ₹ 125000 is borrowed at CI at the rate of 2% for the first year, 3% for the second year and 4% for the third year. Find the amount to be paid after 3 years.  
 (1) ₹ 135678      (2) ₹ 136587      (3) ₹ 163578      (4) ₹ 136578      (5) None of these
11. At what rate per cent compound interest, will ₹ 100 amount to ₹ 441 in 2 years?  
 (1) 4%      (2) 5%      (3) 6%      (4) 3%      (5) None of these
12. At what rate per cent compound interest will ₹ 625 amount to ₹ 676 in 2 years?  
 (1) 3%      (2) 2%      (3) 4%      (4) 5%      (5) None of these
13. On what sum will the amount for 2.5 years at 10 p.c.p.a becomes ₹ 6352.50?  
 (1) ₹ 4900      (2) ₹ 5500      (3) ₹ 5000      (4) ₹ 5800      (5) None of these
14. Find the amount of ₹ 4000 for 2.5 years at 6 p.c.p.a compound interest.  
 (1) ₹ 4629.23      (2) ₹ 4692.32      (3) ₹ 4639.32      (4) ₹ 4682.32      (5) None of these
15. A sum of money placed at compound interest doubles itself in 6 years. In how many years will it amount to 16 times itself?  
 (1) 24 years      (2) 26 years      (3) 22 years      (4) 20 years      (5) None of these
16. A sum of money placed at compound interest thrice itself in 4 years. In how many years will it amount to 27 times itself?  
 (1) 12 years      (2) 15 years      (3) 14 years      (4) 10 years      (5) None of these
17. If a sum of money at compound interest amounts to thrice itself in 3 years, then in how many years will it be 9 times itself?  
 (1) 12 years      (2) 6 years      (3) 9 years      (4) 15 years      (5) None of these
18. At what rate per cent will the compound interest, does a sum of money become four fold in 2 years?  
 (1) 100%      (2) 100%      (3) 200%      (4) 75%      (5) None of these
19. At what rate p.c.p.a will the compound interest, does a sum of money become 27 times in 3 years?  
 (1) 10%      (2) 150%      (3) 75%      (4) 200%      (5) None of these
20. If the CI on a certain sum for 2 years at 4 p.c.p.a be ₹ 510, what would be the SI?  
 (1) ₹ 500      (2) ₹ 505      (3) ₹ 400      (4) ₹ 475      (5) None of these
21. If the CI on a certain sum for 2 years at 6 p.c.p.a be ₹ 25.75, what would be the SI?  
 (1) ₹ 25      (2) ₹ 24      (3) ₹ 20      (4) ₹ 15      (5) None of these
22. The simple interest on a certain sum of money for 2 years at 5 p.c.p.a is ₹ 100. Find the compound interest at the same rate and for the same time.  
 (1) ₹ 102.50      (2) ₹ 103      (3) ₹ 103.50      (4) ₹ 102.25      (5) None of these
23. The simple interest on a certain sum of money for 2 years at 6 p.c.p.a is ₹ 300. Find the compound interest at the same rate and for the same time.  
 (1) ₹ 310      (2) ₹ 308      (3) ₹ 307  
 (108)      (4) ₹ 309      (5) None of these

24. The compound interest on a certain sum for 2 years is ₹ 105 and simple interest is ₹ 100. Find the rate of interest per annum and the sum.  
 (1) 10%, ₹ 500      (2) 10%, ₹ 1000      (3) 20%, ₹ 1000      (4) 4%, ₹ 1500      (5) None of these
25. The compound interest on a certain sum for 2 years is ₹ 60.60 and simple interest is ₹ 60. Find the rate of interest per annum and the sum.  
 (1) 2%, ₹ 1600      (2) 2%, ₹ 1400      (3) 3%, ₹ 1500      (4) 2%, ₹ 1500      (5) None of these
26. On a certain sum of money, the simple interest for 2 years is ₹ 150 at the rate of 3% per annum. Find the difference in CI and SI.  
 (1) ₹ 5      (2) ₹ 4.5      (3) ₹ 2.5      (4) ₹ 2.25      (5) None of these
27. On a certain sum of money, the simple interest for 2 years is ₹ 200 at the rate of 7% per annum. Find the difference in CI and SI.  
 (1) ₹ 7      (2) ₹ 6      (3) ₹ 3.5      (4) ₹ 4.5      (5) None of these
28. The difference between the compound interest and the simple interest on a certain sum of money at 10% per annum for 2 years is ₹ 2.50. Find the sum.  
 (1) ₹ 350      (2) ₹ 275      (3) ₹ 250      (4) ₹ 325      (5) None of these
29. The difference between the compound interest and the simple interest on a certain sum of money at 4% per annum for 2 years is ₹ 1.40. Find the sum.  
 (1) ₹ 875      (2) ₹ 857      (3) ₹ 785      (4) ₹ 925      (5) None of these
30. Find the difference between the compound interest and the simple interest for the sum ₹ 625 at 8% per annum for 2 years.  
 (1) ₹ 3      (2) ₹ 4      (3) ₹ 4.5      (4) ₹ 5      (5) None of these
31. Find the difference between the compound interest and the simple interest for the sum ₹ 2500 at 6% per annum for 2 years.  
 (1) ₹ 9      (2) ₹ 8      (3) ₹ 7.5      (4) ₹ 6      (5) None of these
32. On what sum will the difference between the simple and compound interests for 3 years at 5 per cent per annum amount to ₹ 12.20?  
 (1) ₹ 1600      (2) ₹ 800      (3) ₹ 1200      (4) ₹ 1500      (5) None of these
33. On what sum will the difference between the simple and compound interests for 3 years at 4 per cent per annum amount to ₹ 3.04?  
 (1) ₹ 1250      (2) ₹ 625      (3) ₹ 650      (4) ₹ 675      (5) None of these
34. Find the difference between the simple and compound interest on ₹ 10000 for 3 years at 3 p.c.p.a.  
 (1) ₹ 27.8      (2) ₹ 27.27      (3) ₹ 27.27      (4) ₹ 37.8      (5) None of these
35. Find the difference between the simple and compound interest on ₹ 8000 for 3 years at 5 p.c.p.a.  
 (1) ₹ 61      (2) ₹ 60      (3) ₹ 51      (4) ₹ 59      (5) None of these
36. A certain amount of money at compound interest grows upto ₹ 7520 in 15 years and upto ₹ 7896 in 16 years. Find the rate per cent per annum.  
 (1) 10%      (2) 8%      (3) 5%      (4) 6.5%      (5) None of these
37. A certain amount of money at compound interest grows upto ₹ 3840 in 4 years and upto ₹ 3936 in 5 years. Find the rate per cent per annum.  
 (1) 2.05%      (2) 2.5%      (3) 2%      (4) 3.5%      (5) None of these
38. What sum of money at compound interest will amount to ₹ 650 at the end of the first year and ₹ 676 at the end of the second year?  
 (1) ₹ 625      (2) ₹ 630      (3) ₹ 620      (4) ₹ 720      (5) None of these
39. What sum of money at compound interest will amount to ₹ 480 at the end of the first year and ₹ 576 at the end of the second year?  
 (1) ₹ 420      (2) ₹ 450      (3) ₹ 400      (4) ₹ 375      (5) None of these
40. Find the ratio of CI to SI on a certain sum at 5% per annum for 2 years.  
 (1) 41 : 40      (2) 42 : 41      (3) 43 : 40      (4) 41 : 35      (5) None of these
41. Find the ratio of CI to SI on a certain sum at 8% per annum for 2 years.  
 (1) 27 : 26      (2) 26 : 25      (3) 26 : 21      (4) 25 : 24      (5) None of these
42. ₹ 2400 becomes ₹ 3000 in 3 years at a certain rate of compound interest. What will be the sum after 6 years?  
 (1) ₹ 4750      (2) ₹ 3750      (3) ₹ 3570      (4) ₹ 3850      (5) None of these
43. ₹ 1200 becomes ₹ 1500 in 2 years at a certain rate of compound interest. What will be the sum after 6 years?  
 (1) ₹ 2433.25      (2) ₹ 2334.75      (3) ₹ 2343.75      (4) ₹ 2343.25      (5) None of these
44. Find the compound interest on ₹ 9375 in 2 years, the rate of interest being 2% for the first year and 4% for the second year.  
 (1) ₹ 570      (2) ₹ 1140      (3) ₹ 1155      (4) ₹ 670      (5) None of these

45. Find the compound interest on ₹ 8000 in 2 years, the rate of interest being 5% for the first year and 10% for the second year.  
 (1) ₹ 1340      (2) ₹ 1420      (3) ₹ 1240      (4) ₹ 1350      (5) None
46. What sum of money at compound interest will amount to ₹ 562.38 in 3 years, if the rate of interest is 3% for the first year, 4% for the second year and 5% for the third year?  
 (1) ₹ 400      (2) ₹ 450      (3) ₹ 500      (4) ₹ 520      (5) None of these
47. What sum of money at compound interest will amount to ₹ 2893.8 in 3 years, if the rate of interest is 4% for the first year, 5% for the second year and 6% for the third year?  
 (1) ₹ 2500      (2) ₹ 2400      (3) ₹ 2200      (4) ₹ 2250      (5) None of these
48. A man borrows ₹ 4000 at 20% compound rate of interest. At the end of each year he pays back ₹ 1000. How much amount should he pay at the end of the third year to clear all his dues?  
 (1) ₹ 2592      (2) ₹ 2852      (3) ₹ 2952      (4) ₹ 2953      (5) None of these
49. A man borrows ₹ 3000 at 30% compound rate of interest. At the end of each year he pays back ₹ 1000. How much amount should he pay at the end of the third year to clear all his dues?  
 (1) ₹ 3602      (2) ₹ 3601      (3) ₹ 3603      (4) ₹ 3604      (5) None of these
50. Divide ₹ 2708 between A and B, so that A's share at the end of 6 years may equal B's share at the end of 8 years, compound interest being at 8%.  
 (1) ₹ 1458, ₹ 1250      (2) ₹ 1448, ₹ 1260      (3) ₹ 1438, ₹ 1270  
 (4) ₹ 1468, ₹ 1240      (5) None of these
51. Divide ₹ 1105 between A and B, so that A's share at the end of 5 years may equal B's share at the end of 7 years, compound interest being at 10%.  
 (1) ₹ 505, ₹ 600      (2) ₹ 605, ₹ 500      (3) ₹ 705, ₹ 400      (4) ₹ 625, ₹ 480      (5) None of these
52. Divide ₹ 6100 between A and B, so that A's share at the end of 3 years may equal B's share at the end of 5 years, compound interest being at 20%.  
 (1) ₹ 3600, ₹ 2500      (2) ₹ 3500, ₹ 2600      (3) ₹ 3400, ₹ 2700  
 (4) ₹ 3450, ₹ 2650      (5) None of these
53. The difference between the simple and the compound interest compounded every six months at the rate of 10 per cent per annum at the end of two years is ₹ 124.05. What is the sum?  
 (1) ₹ 10000      (2) ₹ 6000      (3) ₹ 12000      (4) ₹ 8000      (5) None of these
54. A person invested a certain amount at simple interest at the rate of 6 per cent per annum earning ₹ 900 as an interest at the end of three years. Had the interest been compounded every year, how much more interest would he have earned on the same amount with the same interest rate after three years?  
 (1) ₹ 38.13      (2) ₹ 25.33      (3) ₹ 55.08      (4) ₹ 35.30      (5) None of these

### ANSWER

#### **COMPOUND INTEREST**

1.4	2.2	3.1	4.2	5.1	6.4	7.3	8.1	9.2	10.4	11.2	12.3	13.3	14.1
15.1	16.1	17.2	18.2	19.4	20.1	21.1	22.1	23.4	24.1	25.4	26.4	27.1	28.3
29.1	30.2	31.1	32.1	33.2	34.2	35.1	36.3	37.2	38.1	39.3	40.1	41.2	42.2
43.3	44.1	45.3	46.3	47.1	48.3	49.2	50.1	51.2	52.1	53.4	54.3		

## PROBLEMS BASED ON AGES

1. The age of Arvind's father is 4 times his age. If 5 years ago, father's age was 7 times of the age of his son at that time, what is Arvind's father's present age?  
 (1) 84 years      (2) 70 years      (3) 40 years      (4) 35 years      (5) None of these
2. The age of Ramesh is four times the age of Suresh. After ten years the age of Ramesh will be only twice the age of Suresh. Find the present age of Suresh.  
 (1) 10 years      (2) 11 years      (3) 12 years      (4) 5 years      (5) None of these
3. 10 years ago Chandravati's mother was 4 times older than her daughter. The present age of Chandravati is: twice older than the daughter. The present age of Chandravati will be after 10 years, the mother will be  
 (1) 5 years      (2) 10 years      (3) 20 years      (4) 30 years      (5) None of these
4. 14 years ago Ram was 4 times the age of Pankaj. If the present age of Ram is twice the age of Pankaj, what will be the total of their present ages?  
 (1) 42 years      (2) 63 years      (3) 62 years      (4) 30 years      (5) None of these
5. At present the age of the father is 3 times the age of his son, 9 years hence the father's age would be twice that of his son. What is the sum of the present ages of father and his son?  
 (1) 36 years      (2) 38 years      (3) 32 years      (4) 48 years      (5) None of these
6. The sum of the ages of a father and a son is 50 years. Also, 5 years ago, the father's age was 7 times the age of the son. The present ages of the father and the son respectively, are:  
 (1) 35 years, 15 years      (2) 40 years, 10 years      (3) 38 years, 12 years      (4) 46 years      (5) None of these
7. The sum of the ages of a son and father is 56 years. After four years, the age of the father will be three times that of the son. Their ages respectively are:  
 (1) 12 years, 44 years      (2) 16 years, 48 years      (3) 16 years, 42 years  
 (4) 18 years, 36 years      (5) None of these
8. The ratio of the ages of father and son at present is 7 : 4. After 5 years, the ratio will become 7 : 2. The present age of the son is:  
 (1) 10 years      (2) 9 years      (3) 6 years      (4) 5 years      (5) None of these
9. The ratio of the ages of A and B at present is 4 : 3. 10 years earlier, the ratio was 3 : 2, then find the present ages of A and B (in years).  
 (1) 40,30      (2) 48,36      (3) 64,48      (4) 20,15      (5) None of these
10. The ratio of the ages of A and B at present is 5 : 3. After 7 years the ratio will become 3 : 2. What is the sum of the present ages of A and B?  
 (1) 46 years      (2) 48 years      (3) 56 years      (4) 58 years      (5) None of these
11. If the product of the present ages of A and B is 750 years and the ratio of their present ages is 6 : 5. Find the difference between their present ages.  
 (1) 10 years      (2) 15 years      (3) 8 years      (4) 5 years      (5) None of these
12. If the ratio of the ages of A and B at present is 2 : 1. 6 years earlier, the ratio was 3 : 1. What is the sum of the present ages of A and B?  
 (1) 24 years      (2) 26 years      (3) 34 years      (4) 36 years      (5) None of these
13. A man's age is 150% of what it was 10 years ago, but 75% of what it will be after 10 years. What is his present age?  
 (1) 25 years      (2) 30 years      (3) 35 years      (4) 40 years      (5) None of these
14. The ratio of P's and Q's ages is 5 : 7. If the difference between the present age of Q and the age of P 6 years hence is 2 then what is the total of present ages of P and Q?  
 (1) 52 years      (2) 48 years      (3) 56 years      (4) Data inadequate      (5) None of these
15. If the ages of P and R are added to twice the age of Q, the total becomes 59. If the ages of Q and R are added to thrice the age of P, the total becomes 68. And if the age of P is added to thrice the age of Q and thrice the age of R, the total becomes 108. What is the age of P?  
 (1) 15 yrs      (2) 19 yrs      (3) 17 yrs      (4) 12 yrs      (5) None of these
16. The product of the ages of Harish and Seema is 240. If twice the age of Seema is more than Harish's age by 4 years, what is Seema's age in years?  
 (1) 12 years      (2) 20 years      (3) 10 years      (4) 14 years      (5) None of these
17. Jayesh is twice as old as Vijay and half as old as Suresh. If the sum of Suresh's and Vijay's ages is 85 years, what is Jayesh's age in years?  
 (1) 34      (2) 36      (3) 68      (4) Can't say      (5) None of these

18. Present age of Rahul is 8 years less than Ritu's present age. If 3 years ago Ritu's age was  $x$ , which of the following represents Rahul's present age?  
 (1)  $x + 3$       (2)  $x - 5$       (3)  $x - 3 + 8$       (4)  $x + 3 + 8$       (5) None of these
19. The ratio of the present ages of a son and his father is  $1 : 5$  and that of his mother and father is  $4 : 5$ . After 2 years the ratio of the age of the son to that of his mother becomes  $3 : 10$ . What is the present age of the father?  
 (1) 30 years      (2) 28 years      (3) 35 years      (4) 30 years      (5) None of these
20. 20 years ago my age was  $\frac{1}{3}$  of what it is now. What is my present age?  
 (1) 30 years      (2) 25 years      (3) 35 years      (4) 40 years      (5) None of these
21. 15 years hence, A will be twice as old as B, but five years ago A was 4 times as old as B. Find the difference of their present ages.  
 (1) 15 years      (2) 45 years      (3) 30 years      (4) 25 years      (5) None of these
22. A says to B "I am twice as old as you were when I was as old as you are". The sum of their ages is 63 years. Find the difference of their ages.  
 (1) 27 years      (2) 12 years      (3) 9 years      (4) 6 years      (5) None of these
23. A is as much younger than B as he is older than C. If the sum of B's and C's ages is 40 years. Find the age of A.  
 (1) 20 years      (2) 25 years      (3) 30 years      (4) 27 years      (5) None of these
24. A is twice as old as B was two years ago. If the difference in their ages be 9 years, find A's age.  
 (1) 14 years      (2) 18 years      (3) 8 years      (4) 12 years      (5) None of these
25. In ten years, A will be twice as old as B was 10 years ago. If A is now 9 years older than B. Find the present age of B.  
 (1) 39 years      (2) 40 years      (3) 36 years      (4) 49 years      (5) None of these
26. Five years ago, the total of the ages of father and son was 60 years. The ratio of their present ages is  $4 : 1$ . Then the present age of the father is \_\_\_\_\_.  
 (1) 48 years      (2) 51 years      (3) 56 years      (4) 61 years      (5) None of these
27. Two years ago, A was four times as old as B. 8 years hence, A's age will exceed B's age by 12 years. The ratio of the present ages of A and B is \_\_\_\_\_.  
 (1)  $3 : 1$       (2)  $4 : 1$       (3)  $3 : 2$       (4)  $5 : 1$       (5) None of these
28. A is 3 years younger to B. C is two years older than A. Then B's relation to C is \_\_\_\_\_.  
 (1) two years older      (2) one year younger      (3) one year older  
 (4) two years younger      (5) None of these
29. If C's age is twice the average age of A, B and C. A's age is one half the average of A, B and C. If B is 5 years old, the average age of A, B and C is \_\_\_\_\_.  
 (1) 10 years      (2) 15 years      (3) 12 years      (4) 9 years      (5) None of these
30. A father's age is three times the sum of the ages of his two children, but 20 years hence his age will be equal to the sum of their ages. Then the father's age is \_\_\_\_\_.  
 (1) 30 years      (2) 40 years      (3) 35 years      (4) 45 years      (5) None of these
31. A father's age is four times as much as the sum of the ages of his three children but 6 years hence his age will be only double the sum of their ages. Then the age of the father is \_\_\_\_\_.  
 (1) 30 years      (2) 40 years      (3) 60 years      (4) 45 years      (5) None of these
32. The respective ages of a father and his son are 41 and 16 years. In how many years will the father be twice as old as his son?  
 (1) 19 years      (2) 9 years      (3) 10 years      (4) 15 years      (5) None of these
33. The total ages of A, B and C at present is 90 years. Ten years ago the ratio of their ages was  $1 : 2 : 3$ . Then the present age of B is \_\_\_\_\_.  
 (1) 30 years      (2) 20 years      (3) 40 years      (4) 45 years      (5) None of these
34. The sum of the ages of a father and son is 45 years. Five years ago, the product of their ages was four times the father's age at that time, then the present ages of the father and son respectively are \_\_\_\_\_ and \_\_\_\_\_ years.  
 (1) 39, 6      (2) 35, 10      (3) 36, 9      (4) 40, 10      (5) None of these
35. The ratio of the father's and son's age is  $7 : 4$ . The product of their ages is 1008. The ratio of their ages after 6 years hence will be \_\_\_\_\_.  
 (1)  $5 : 3$       (2)  $8 : 5$       (3)  $7 : 4$       (4)  $5 : 8$       (5) None of these
36. Ratio of Sujeet's age to Sameer's age is  $4 : 3$ . Sujeet will be 26 years old after 6 years. Then the present age of Sameer is \_\_\_\_\_.  
 (1) 21 years      (2) 15 years      (3) 24 years      (4) 18 years      (5) None of these

37. If 6 years are subtracted from the present age of Randheer and the remainder is divided by 18, then the present age of his grandson Anup is obtained. If Anup is 2 years younger to Mahesh whose age is 5 years, then what is the age of Randheer?  
 (1) 96 years      (2) 84 years      (3) 48 years      (4) 60 years      (5) None of these
38. The ratio of Vimal's age and Arun's age is 3 : 5 and sum of their ages is 80 years. The ratio of their ages after 10 years will be \_\_\_\_\_.  
 (1) 2 : 3      (2) 1 : 2      (3) 3 : 2      (4) 3 : 5      (5) None of these
39. Shyam is 3 times as old as his son. After 10 years, the sum of their ages will be 76 years. The respective ages of the father and the son are \_\_\_\_\_ and \_\_\_\_\_ years.  
 (1) 42, 14      (2) 39, 13      (3) 45, 15      (4) 47, 17      (5) None of these
40. A is 20 years older than B. He is also 6 times as old as B. Then the respective ages of A and B are \_\_\_\_\_ and \_\_\_\_\_ years.  
 (1) 24, 4      (2) 42, 7      (3) 30, 5      (4) 35, 5      (5) None of these
41. The ages of A, B and C together total 185 years. B is twice as old as A and C is 17 years older than A. Then the respective ages of A, B and C are  
 (1) 40, 86 and 59 years      (2) 42, 84 and 59 years      (3) 40, 86 and 65 years  
 (4) 42, 88 and 58 years      (5) None of these
42. The ratio of Vimal's age and Arun's age is 3 : 5 and the sum of their ages is 80 years. Find the ratio of their ages.  
 (i) after 10 years and (ii) 10 years ago  
 (1) 2 : 3, 2 : 1      (2) 2 : 3, 1 : 2      (3) 3 : 2, 1 : 2      (4) 3 : 2, 1 : 1      (5) None of these
43. In 10 years, A will be twice as old as B was 10 years ago. If A is now 5 years older than B, the present age of A is:  
 (1) 29 years      (2) 39 years      (3) 19 years      (4) 48 years      (5) None of these
44. Kamla got married 6 years ago. Today her age is  $1\frac{1}{4}$  times her age at the time of marriage. His son's age is (1/10) times her age. The age of her son is:  
 (1) 2 years      (2) 3 years      (3) 4 years      (4) 5 years      (5) None of these
45. Sachin was twice as old as Ajay 10 years back. How old is Ajay today if Sachin will be 40 years old 10 years hence?  
 (1) 20 years      (2) 10 years      (3) 30 years      (4) 15 years      (5) None of these

### ANSWER

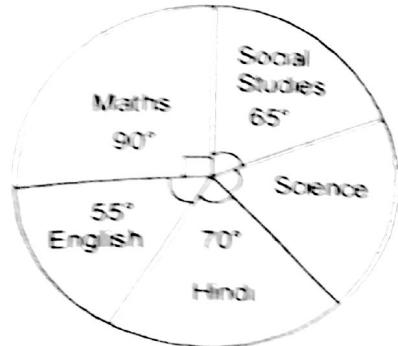
#### PROBLEM BASED ON AGES

1.3	2.4	3.3	4.2	5.1	6.2	7.1	8.4	9.1	10.3	11.4	12.4	13.2	14.4
15.4	16.1	17.1	18.2	19.5	20.1	21.3	22.3	23.1	24.3	25.1	26.3	27.1	28.3
29.1	30.1	31.3	32.2	33.	34.3	35.2	36.2	37.4	38.1	39.1	40.1	41.2	42.2
43.4	44.2	45.1											

# **DATA INTERPRETATION**

# **DATA INTERPRETATION**

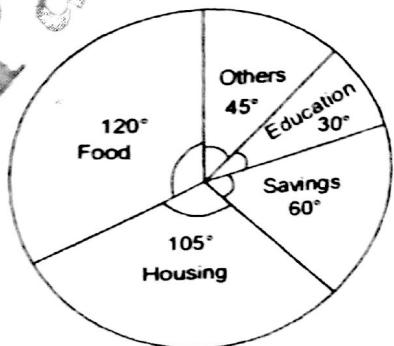
**Directions :** The pie-chart given below shows the marks obtained by a student. If the marks obtained by him in the examination were 540, answer question Nos. 1 to 4 based on this pie-chart.





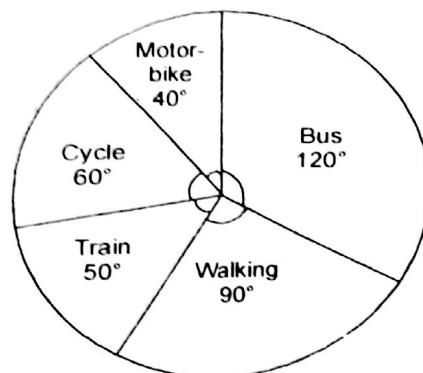

*Direction : For O. No. 5 to 8.*

The pie-chart given here shows expenditures incurred by a family on various items and their savings, which amount to ₹ 8,000 in a month. Study the chart and answer the questions number 5 to 8 based on the pie-chart.





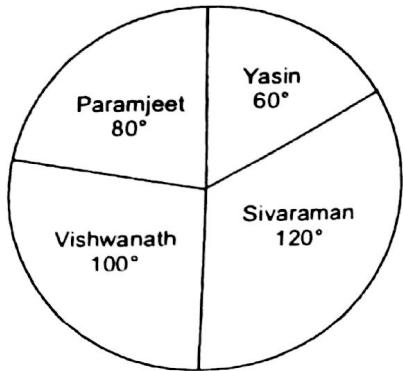

The pie-chart given here, shows how 1080 workers travel from their home to the factory where they work. Study the pie-chart and answer Question Nos 9 to 12.



**Direction : For Q. No. 13 to 15.**

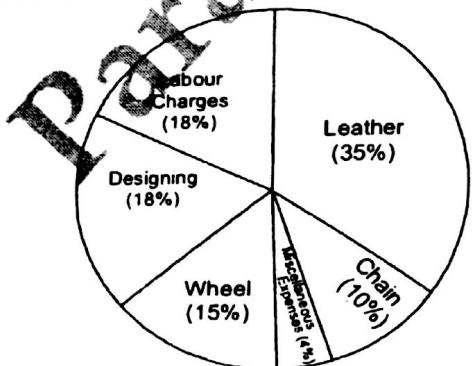
The pie chart, given here, represents the number of valid votes obtained by four students who contested election for school leadership. The total number of valid votes polled was 720.

**Observe the chart and answer question number 13-15 based on it.**






**Direction:** Q. 16-20 are based on the following Pie-chart which gives the percentage expenses on various items during bag production and sale.



**Study the Pie-chart and answer the questions**

16. The central angle for the sector on "Cost on Chain" is

(a)  $22\frac{1}{2}^\circ$       (b)  $16^\circ$   
(c)  $54.8^\circ$       (d)  $36^\circ$   
(e) None of these

17. If the 'Cost of Leather' is ₹ 17500, the Cost of wheel paid is

(a) ₹ 8750      (b) ₹ 7500  
(c) ₹ 3150      (d) ₹ 6300  
(e) None of these

18. If the "miscellaneous expenses" are ₹ 6000, how much more are "Labour charges" than "Wheel"?

(a) ₹ 6000      (b) ₹ 5500  
(c) ₹ 4500      (d) ₹ 10500  
(e) None of these

19. The central angle corresponding to the sector on "Leather" is more than that of "Designing" by

(a)  $72^\circ$       (b)  $61.2^\circ$   
(c)  $60^\circ$       (d)  $54.8^\circ$   
(e) None of these

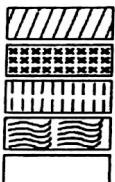
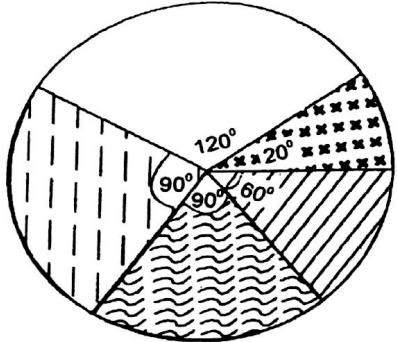
0. The "Expenses on Chain" is approximately what percent of "Leather cost"?

(a) 20.3 %      (b) 28.6 %  
(c) 30 %      (d) 32.5 %  
(e) None of these

**Directions:** For Q. 21-24

The pie-chart, given here, shows the land distribution of a village.

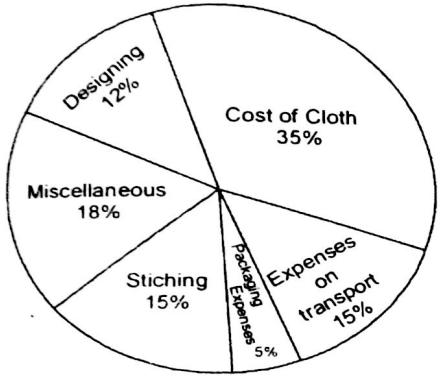
**Study the pie-chart and answer the questions number 21-24 based on it**



Inhabited land  
Land used for roads  
Cultivated land  
Wet land  
Waste land

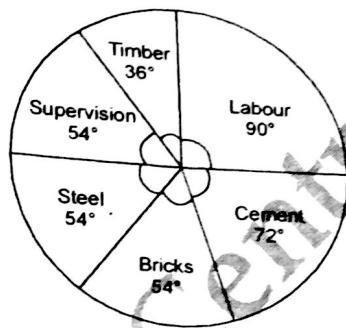
22. If the total area of the village is 7200 acres, the total area of the wet land is  
 (a) 1028 acres (b) 5040 acres  
 (c) 3600 acres (d) 1400 acres  
 (e) None of these
23. What percent of total land is used for cultivation?  
 (a) 24 (b) 25  
 (c) 50 (d) 90  
 (e) None of these
24. The ratio of the waste land to the cultivated land is  
 (a) 4 : 3 (b) 3 : 2  
 (c) 2 : 1 (d) 3 : 1  
 (e) None of these

**Direction (Q. 25-29):** The pie-chart given here shows the expenses incurred by a factory in producing hankerchief.



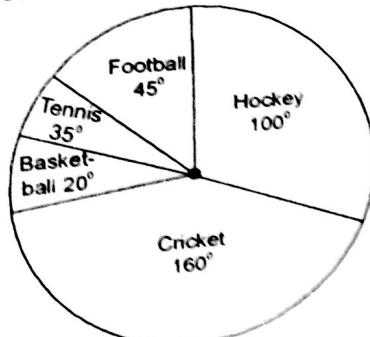
- Study the pie-chart and answer question number 25 to 29 based on it.**
25. If the Packaging charges are ₹ 1,500 then the miscellaneous charges are  
 (a) ₹ 3,750 (b) ₹ 4,500  
 (c) ₹ 5,250 (d) ₹ 5,400  
 (e) None of these
26. The ratio of the cost of Cloth to Stiching is  
 (a) 3 : 7 (b) 7 : 3  
 (c) 7 : 1 (d) 1 : 7  
 (e) None of these
27. If the cost of Cloth is ₹ 10,500, then the cost of transport is  
 (a) ₹ 4,500 (b) ₹ 5,400  
 (c) ₹ 6,000 (d) ₹ 6,250  
 (e) None of these
28. The measure of the central angle of the sector for the designing charges is  
 (a)  $64.8^\circ$  (b)  $54^\circ$   
 (c)  $43.2^\circ$  (d)  $36^\circ$   
 (e) None of these
29. If 5000 hankerchiefs are produced, Packaging expenses amount to ₹ 1,500 and the shopkeeper wants a profit of 25%, then the marked price of one hankerchief should be  
 (a) ₹ 7.50 (b) ₹ 10  
 (c) ₹ 12.5 (d) ₹ 15  
 (e) None of these

**Direction (Q. 30-33):** The pie chart given here shows the break-up of the cost of construction of a house on various heads. Study the chart and answer question numbers 30 to 33 based on it.

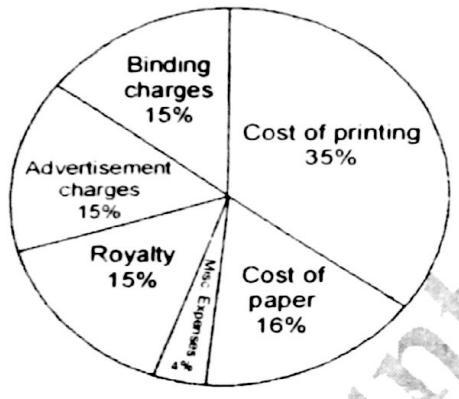


30. If the total cost of construction of the house is ₹ 15,00,000, how much amount of money was spent on labour.  
 (a) ₹ 9,000 (b) ₹ 2,50,000  
 (c) ₹ 3,60,000 (d) ₹ 3,75,000  
 (e) None of these
31. The total expenditure incurred on bricks, steel and cement is what percent of the total cost of construction?  
 (a) 50 (b) 54  
 (c) 72 (d) 75  
 (e) None of these
32. Expenditure incurred in timber is what percent of the expenditure on cement?  
 (a) 36 (b) 50  
 (c) 72 (d) 18  
 (e) None of these
33. Out of the total cost (₹ 15,00,000) of construction, how much was spent on labour and supervision combined together?  
 (a) ₹ 1,44,000 (b) ₹ 3,00,000  
 (c) ₹ 6,00,000 (d) ₹ 7,50,000  
 (e) None of these

**Direction :** The pie chart, given here, show the amount of money spent on various sports by a school administration in a particular year. Observe the pie chart and answer Question Nos. 34 to 36 based on this graph.



**Direction (Q. 37-40):** The pie-chart given here shows the expenditure incurred by a publisher on various items to bring out a book. Study the chart and answer the following questions:








**Directions:** The pie chart given below, shows the expenditure on various items and savings of a family during the year 2009. Study the pie chart and answer question no. 41 to 45 based on it.

## Percentage of Money Spent Various Items and Savings A Family During 2009

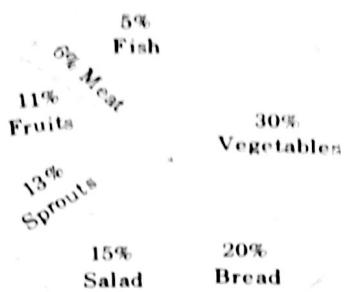


45. If the total income of the family was ₹ 1,50,000 then the money spent on food was

(a) ₹ 20,000      (b) ₹ 23,000  
 (c) ₹ 30,000      (d) ₹ 34,500  
 (e) None of these

**Directions (Q. 46-50): Study the following Pie-chart carefully and answer the questions given below:**

**Statistics of a Survey on the food item's preference of the people, Conducted on a sample of 30,000 people.**



46. What is the total number of people preferring vegetables and those preferring sprouts?

(a) 11,900      (b) 12,300  
 (c) 12,500      (d) 11,500

(e) None of these

47. What is the difference between the total numbers of people preferring meat to the total number of people preferring fish?

(a) 150      (b) 200  
 (c) 300      (d) 350

(e) None of these

48. People preferring fruits are approximately what per cent of the people preferring vegetables?

(a) 48      (b) 35  
 (c) 46      (d) 37

(e) 30

49. Out of the total sample population, how many people have given preference for fish?

(a) 1500      (b) 1800  
 (c) 1500      (d) 1400

(e) None of these

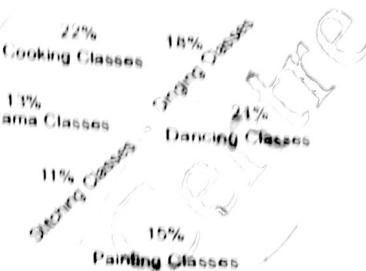
50. What is the respective ratio of the number of people preferring meat to the number of people preferring salad?

(a) 2:5      (b) 3:5  
 (c) 2:3      (d) 4:3

(e) None of these

**Directions (Q. 51-55): Study the pie chart carefully to answer the questions that follow.**  
**Percentage of students enrolled in different Hobby classes in a School**

Total number of students = 3600



51. What is the ratio of number of students enrolled in Singing and Dancing classes together to those enrolled in Drama Classes respectively?

(a) 3:1      (b) 4:7  
 (c) 7:5      (d) 3:5  
 (e) None of these

Number of students enrolled in Painting classes are approximately what percent of those enrolled in Singing classes?

(a) 78      (b) 92  
 (c) 83      (d) 66  
 (e) 72

52. 53. What is the total number of students enrolled in Stitching and Drama Classes together?

(a) 684      (b) 846  
 (c) 648      (d) 864

(e) None of these

54. How many students are enrolled in Painting Classes?

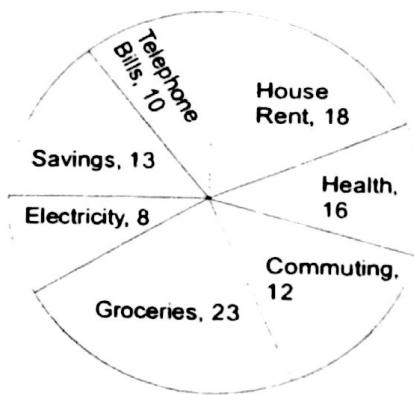
(a) 550      (b) 480  
 (c) 450      (d) 520  
 (e) None of these

55. The number of students enrolled in Cooking Classes is what percent of those enrolled in Dancing Classes? (rounded off to two digits after decimal)

(a) 101.45      (b) 104.76  
 (c) 113.84      (d) 110.28  
 (e) None of these

**Directions (Q. 56-60) Study the pie-chart carefully to answer the questions that follow:**  
**Percentage-Wise Break Up of Spending Pattern of A Family in A Month**

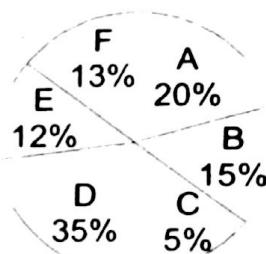
Total Amount Spent in a Month = ₹. 60,000/-



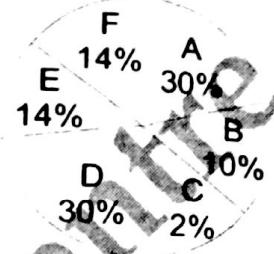
56. What is the amount spent by the family on Commuting?  
 (a) ₹ 9,600/-      (b) ₹ 8,400/-  
 (c) ₹ 7,200/-      (d) ₹ 6,000/-  
 (e) None of these
57. What is the total amount spent by the family on Telephone Bills, Health and Electricity together?  
 (a) ₹ 13,800/-      (b) ₹ 18,600/-  
 (c) ₹ 17,400/-      (d) ₹ 20,400/-  
 (e) None of these
58. What is the respective ratio of amount spent by family on Groceries to the amount spent on House rent?  
 (a) 23:18      (b) 13:28  
 (c) 18:23      (d) 28:13  
 (e) None of these
59. Amount invested by the family on Savings forms what percent of amount spent on Health?  
 (a) 123      (b) 81.25  
 (c) 120.50      (d) 85.75  
 (e) None of these
60. Total amount spent by the family on Commuting and Telephone Bills together forms approximately what percent of the amount spent on Groceries?  
 (a) 153      (b) 148  
 (c) 135      (d) 112  
 (e) 96

**Directions (Q. 61-65): Study the following information to answer the given questions.**  
**percentage of students in various courses (A, B, C, D, E, F) and Percentage of girls out of these.**

Total students : 1200  
 (800 girls + 400 boys)  
**PERCENTAGE IN VARIOUS COURSES**



Total Girls : 800  
**PERCENTAGE OF GIRLS IN COURSES**



61. How many girls are in course C?  
 (a) 44      (b) 16  
 (c) 40      (d) 160  
 (e) None of these
62. For which pair of courses in the number of boys the same?  
 (a) E & F      (b) A & D  
 (c) C & F      (d) B & D  
 (e) None of these
63. For course E, the number of girls is how much per cent more than the boys for course E?  
 (a) 250      (b) 350  
 (c) 150      (d) 80  
 (e) None of these
64. For which course is the number of boys the minimum?  
 (a) E      (b) F  
 (c) C      (d) A  
 (e) None of these
65. For course D what is the respective ratio of boys and girls?  
 (a) 3:4      (b) 4:5  
 (c) 3:5      (d) 5:6  
 (e) None of these
66. The following figure shows the proportion of the population for four years in various age groups in percentage:

	1971	1981	1991	2001
0 to 14 years	42.03	35.57	37.46	35.44
15 to 29 years	23.97	25.90	26.71	26.65
30 to 64 years	28.03	28.04	29.03	30.44
65 years and above	5.97	6.49	6.80	7.47

Based on the information provided above identify the state of dependency ratio from 1971 to 2001

- (a) It has increased
- (b) It has decreased
- (c) It has remained constant
- (d) Can't be decided.
- (e) None of these

**Directions (Q. 67-70):** The table given below shows the incomes (in rupees), together with their sources, received by 5 employees of a company during the last month of a particular year:

Study the table and answer the following questions:

Employee → A	B	C	D	E	
Source of Income ↓					
Salary	12000	6000	21000	9000	12000
Bonus	2400	1200	4500	2400	3000
Overtime	5400	2100	6000	5100	6000
Arrears	6000	5400	12000	4200	7500
Miscellaneous income	1200	300	1500	300	1500
Total	27000	15000	45000	21000	30000

67. How many employees have their salaries more than four times the income from bonus?
- (a) 2
  - (b) 3
  - (c) 4
  - (d) 5
  - (e) None of these
68. What is the average overtime allowance given to employees A, B, C, D and E?
- (a) ₹ 4820
  - (b) ₹ 3920
  - (c) ₹ 4920
  - (d) ₹ 4800
  - (e) None of these
69. How much percent of his total income is the bonus of employee B?
- (a) 10%
  - (b) 6%
  - (c) 7%
  - (d) 8%
  - (e) None of these
70. Which employee has the largest ratio of his salary to his total income?
- (a) B
  - (b) E
  - (c) B and E both
  - (d) F
  - (e) None of these

**Directions (Q. 71-75):** Study the following table carefully to answer these questions.

Number of Employees in different departments of five organizations

	A	B	C	D	E
IT	145	120	100	220	160
	120	75	90	115	140
	150	90	115	200	190
Admin.	225	110	160	110	220
	180	120	130	110	130

71. What is the average number of employees working in Marketing department of all the organizations?
- (a) 149
  - (b) 145
  - (c) 146
  - (d) 148
  - (e) None of these
72. What is the total number of employees working in all the departments of organization B together?
- (a) 350
  - (b) 375
  - (c) 425
  - (d) 475
  - (e) None of these
73. What is the ratio between number of employees from Finance and Marketing departments together of organization B and these two departments together of organization D respectively?
- (a) 14 : 9
  - (b) 9 : 14
  - (c) 11 : 28
  - (d) 28 : 11
  - (e) None of these
74. What is the ratio between the total number of employees from all organizations together in HR and Administration departments respectively?
- (a) 132:137
  - (b) 137:132
  - (c) 122:137
  - (d) 137:122
  - (e) None of these
75. Number of employees in IT department of organization C is what percent of the total number of employees in organization C in all the departments together?
- (a) 26.5
  - (b) 25.6
  - (c) 25.4
  - (d) 26.4
  - (e) None of these

**Directions (Q76-80): Study the following table carefully and answer the questions given below:**

## **Number of students in Five Disciplines of a college over the years**

Dis. Year	Arts	Sc.	Com.	Man.	Agr.
2001	240	358	275	215	314
2002	260	390	286	234	365
2003	275	374	265	269	336
2004	284	368	290	255	348
2005	296	415	272	284	326
2006	312	432	364	276	383



**Directions (Q. 81-85): Study the following table carefully to answer these questions.**

**Number of students appeared in board examination from five schools over the years**

School	1998	1999	2000	2001	2002
School A	1200	1300	1400	1500	1600
School B	1000	1100	1200	1300	1400
School C	1100	1200	1300	1400	1500
School D	1300	1400	1500	1600	1700
School E	1500	1600	1700	1800	1900

<u>School</u>	A	B	C	D	E
<u>Year</u>	2004	650	760	820	780
	2005	700	740	860	780
	2006	800	620	940	750
	2007	750	880	920	840
	2008	800	840	900	860
					770