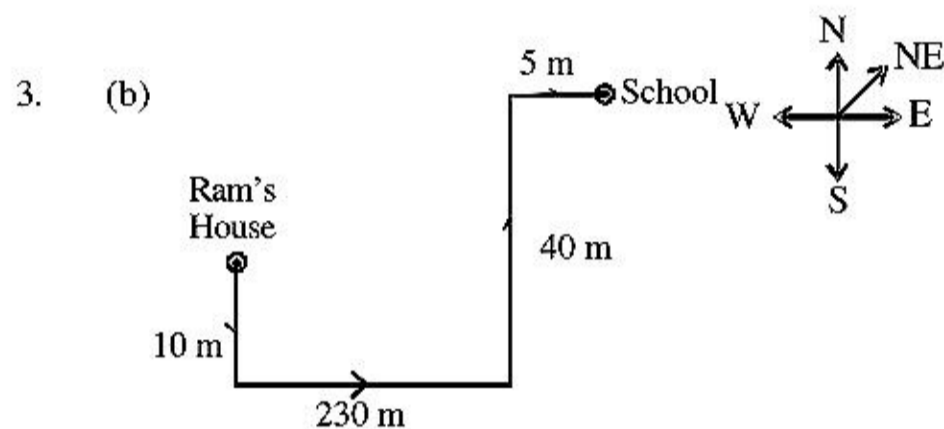


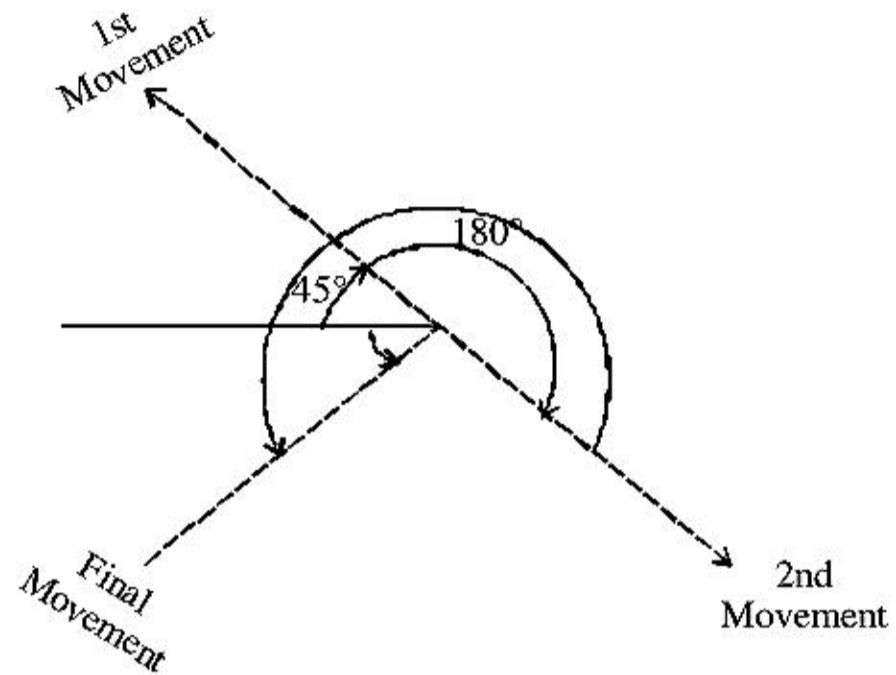
## SOLUTIONS

1. (b)  $R + 3 \rightarrow U$       Similarly;       $S + 3 \rightarrow V$   
 $O + 3 \rightarrow R$        $W + 3 \rightarrow Z$   
 $A + 3 \rightarrow D$        $A + 3 \rightarrow D$   
 $D + 3 \rightarrow G$        $N + 3 \rightarrow Q$
2. (b) The pattern of the given series is as follows:  
 The first digit of each set is in ascending order. i.e.  
 $6+2=8$ ,  $8+3=11$ ,  $11+4=15$ .  
 In the same way the letters are also increasing. C is at the 3rd place in english alphabet. Similarly F is at 6th (+3); J is at 10th (+4) where as O is at 15th (+5) place. Now like the first digits the last digits are also ascending +3, +4, +5 respectively. Therefore the last set will be  
 $15 + 5$ ,  $10 + 6$ ,  $19 + 6 = 20 \cup 25$ .



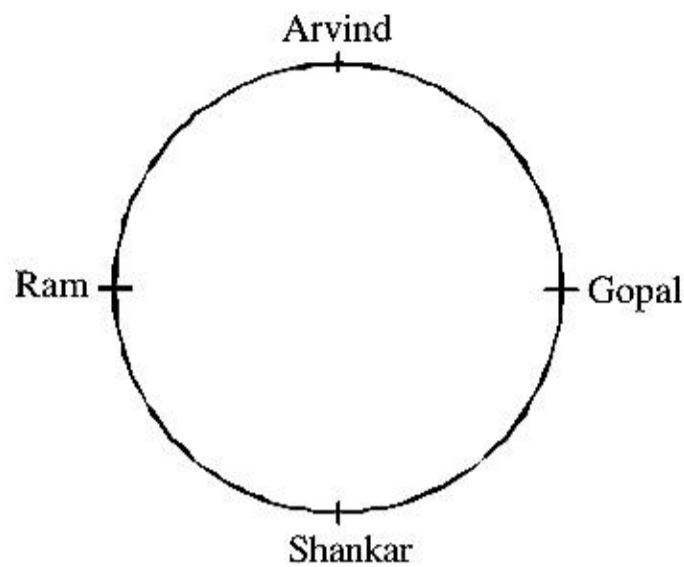
- Hence, the school of Ram is to the north-east from his house.
4. (b) A person sits on a chair. Since 'chair' is called 'cot', our answer is 'cot'.
5. (b) PERFUNCTORY means 'Done as a duty or habit without real interest, attention or feeling. Above board means lawful, legal, licit, honest.
6. (c) Mohan's Position = 9th from the top.  
 Kiran's Position =  $(35 - 7 + 1) = 29$ th from the top.  
 Sohan's Position =  $\left(\frac{9+29}{2}\right) = 19$ th from the top.  
 Hence, Kiran's position is 10th from Sohan's position.
7. (b) Here the specified letters are O, N, E, L and A. The meaningful word formed with these letters is ALONE. Hence the required middle letters of the word is 'O'.
8. (d) One's brother's son's wife's daughter implies paternal grand-daughter of one's brother. Now, the mother of paternal grand-daughter of one's brother implies wife of one's nephew.  
 Thus, we can conclude that Arun is the paternal uncle of the female's husband.
9. (d) In others there is a gap of one letter between the first and the second letters of the group.
10. (c)  $A + 14 \rightarrow O$        $W + 14 \rightarrow K$   
 $B + 14 \rightarrow P$        $X + 14 \rightarrow L$   
 $C + 14 \rightarrow Q$        $Y + 14 \rightarrow M$   
 $D + 14 \rightarrow R$        $Z + 14 \rightarrow N$
11. (c)  $D \text{---} F \text{---} I \text{---} M \text{---} R$   
 $E \text{---} G \text{---} H \text{---} J \text{---} K \text{---} L \text{---} N \text{---} O \text{---} P \text{---} Q$

12. (c) The sister of one's mother is one's maternal aun't. Hence the man is the husband of the boy's maternal aunt.
13. (a)  $45^\circ + 180^\circ = 225^\circ$  clockwise direction  
 $270^\circ$  anticlockwise direction.  
 $225 - 270 = -45^\circ$



- i.e.,  $45^\circ$  anticlockwise from initial position.  
 Hence, the required direction is south-west.
14. (d) The day repeats itself after seven days.  
 Third Wednesday falls on 15th of the month.  
 Fourth Wednesday will fall on 22nd of the month.  
 Fifth Wednesday will fall on 29th of the month.  
 Fifth Friday will fall on 31st of the month.
15. (d) Present age of Ranjeev =  $x$  years  
 Present age of Ranjeev's brother =  $(x + 6)$  years  
 Present age of Ranjeev's father =  $(x + 6 + 32)$  years  
 $= (x + 38)$  years  
 $\therefore$  Present age of Ranjeev's mother =  $(x + 38 - 3)$  years  
 $= (x + 35)$  years  
 $\therefore$  Present age of Ranjeev's sister =  $(x + 35 - 25)$  years  
 $= (x + 10)$  years  
 $\therefore$  Age of Ranjeev's sister when he was born  
 $= (x + 10 - x) = 10$  years.
16. (d) Let there were  $x$  persons in the party.  
 $\therefore x(x - 1) = 600$   
 or  $x^2 - x - 600 = 0$   
 or  $x^2 - 25x + 24x - 600 = 0$   
 or  $x(x - 25) + 24(x - 25) = 0$   
 or  $(x - 25)(x + 24) = 0$   
 $\therefore x = 25$   
 or  $x = -24$  But -ve sign is ignored  
 $\therefore x = 25$
17. (a) Let there were  $x$  persons in the party.  
 So,  $\frac{x(x - 1)}{2} = 105$       or  $x^2 - x - 210 = 0$   
 or  $x^2 - 15x + 14x - 210 = 0$  or  $x(x - 15) + 14(x - 15) = 0$   
 or  $(x - 15)(x + 14) = 0$   
 $\therefore x = 15$  or  $x = -14$  But -ve sign is ignored  
 $\therefore x = 15$

18. (d)



It is clear from above diagram Gopal and Ram are required pair.

19. (b) Sitting arrangement is as follows :

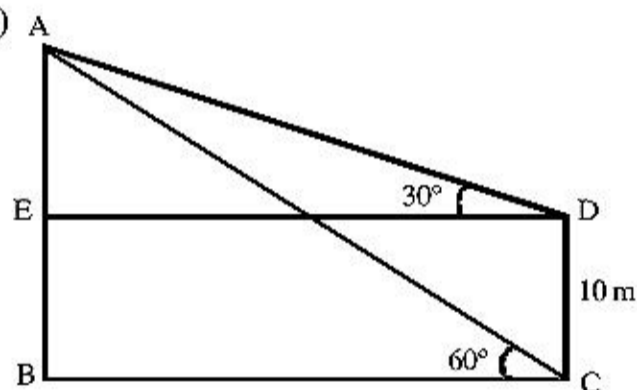
$G_1$   $B_1$   $G_2$   $B_2$   $G_3$   $B_3$   $G_4$   
 $1^{st}$   $2^{nd}$   $3^{rd}$   $4^{th}$   $5^{th}$   $6^{th}$   $7^{th}$

The number of boys are less than girls, so we should begin with girl.

20. (d) The series of given plants is as follows :

Chiku Guava Mango, Mango Chiku Sitafal....  
 Hence, the required 30th plant will be Sitafal.

21. (b)



Let, AB is a tower and CD is a pole.

$\angle ACB = 60^\circ$  &  $\angle ADE = 30^\circ$

Given,  $CD = 10$  m

Let,  $BC = x$  m &  $AE = h$  m

$\therefore DE = x$  m

In  $\triangle AED$

$$\tan 30^\circ = \frac{AE}{DE} \text{ or } \frac{1}{\sqrt{3}} = \frac{h}{x}$$

$$\therefore x = h\sqrt{3} \text{ m} \quad \dots(1)$$

Now, In  $\triangle ABC$

$$\tan 60^\circ = \frac{AB}{BC}$$

$$\sqrt{3} = \frac{h+10}{x}$$

Putting the value of  $x$  from equation (1) we get

$$\sqrt{3} = \frac{h+10}{h\sqrt{3}}$$

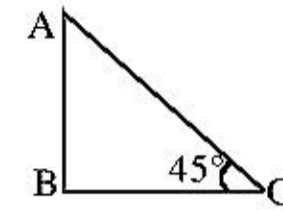
$$\text{or } 3h - h = 10$$

$$2h = 10$$

$$\therefore h = 5\text{m}$$

$$\therefore \text{Height of the tower} = AB = AE + BE = 5 + 10 = 15 \text{ m.}$$

22. (b)



Let, BC is the breadth of the river and AB is height of the tower and  $\angle ACB = 45^\circ$

From the given option we have to find the relation between AB and BC.

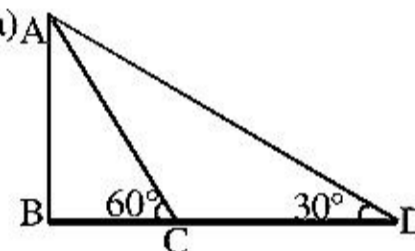
In  $\triangle ABC$

$$\tan 45^\circ = \frac{AB}{BC}$$

$$\text{or } 1 = \frac{AB}{BC}$$

$$\therefore AB = BC$$

23. (a)



Let, AB is the height of the tree and BC is the breadth of the river.

$\angle ACB = 60^\circ$  and  $\angle ADB = 30^\circ$

$CD = 40$  m

Let, the height of the tree  $AB = x$  m

and the breadth of the river  $BC = y$  m

In  $\triangle ABC$

$$\tan 60^\circ = \frac{AB}{BC} \quad \text{or } \sqrt{3} = \frac{x}{y}$$

$$\therefore x = y\sqrt{3} \quad \dots(1)$$

Again In  $\triangle ABD$

$$\tan 30^\circ = \frac{AB}{BD} \Rightarrow \frac{1}{\sqrt{3}} = \frac{x}{y+40}$$

Putting the value of  $x$  from equation (1) we get

$$\frac{1}{\sqrt{3}} = \frac{y\sqrt{3}}{y+40} \quad \text{or } 3y = y+40$$

$$\therefore y = 20 \text{ m}$$

24. (c) The required probability

$$= \frac{1}{4} \times \frac{1}{5} \times \frac{2}{5} = 0.02$$

25. (d) The required probability

$$\frac{{}^5C_2 + {}^4C_2}{{}^9C_2} = \frac{10+6}{36} = \frac{16}{36} = \frac{4}{9}$$

26. (b) **West Indies**

Possible score

	1st	2nd
Match	Match	
Case I	1	2
Case II	2	1
Case III	2	2
Case IV	2	2
Case V	2	2

**Australia**

Possible score

	1st	2nd	Required	Match	Probability
Case I	2	2	⇒	0.05 × 0.5 × 0.5 × 0.5	
Case II	2	2	⇒	0.5 × 0.5 × 0.5 × 0.5	
Case III	2	1	⇒	0.5 × 0.5 × 0.5 × 0.5	
Case IV	1	2	⇒	0.5 × 0.5 × 0.5 × 0.5	
Case V	2	2	⇒	0.5 × 0.5 × 0.5 × 0.5	

Total probability = 0.0875

27. (c) The required probability =

$$\frac{{}^5C_2}{{}^{13}C_2} + \frac{{}^8C_1 + {}^5C_1}{{}^{13}C_2} = \frac{5 \times 4}{13 \times 12} + \frac{8 \times 5 \times 2}{13 \times 12}$$

$$= \frac{20 + 80}{13 \times 12} = \frac{25}{39}$$

28. (c) Suppose there are 100 candidates for entrance.

∴ No. of capable candidates = 40  
and No. of incapable candidates = 100 - 40 = 60  
Now, no. of capable candidates who pass the test = 80% of 40 = 32  
No. of incapable candidates who pass the test = 25% of 60 = 15  
Note that these successful candidates become collage students.  
Thus, there are 32 + 15 = 47 collage students in all, of which 32 are capable.  
Hence, Proportion of capable collage students

$$= \frac{32}{47} \times 100 = 68\%$$

29. (b) Total candidates = 2000

Boys candidates = 900

∴ Girls candidates = 2000 - 900 = 1100

Failed boys candidates = 68% of 900

$$= \frac{68 \times 900}{100} = 612$$

Failed girls candidates = 62% of 1100

$$= \frac{62 \times 1100}{100} = 682$$

∴ Total failed candidates = 612 + 682 = 1294

$$\therefore \text{Percentage of failed candidates} = \frac{1294}{2000} \times 100$$

$$= 64.7\%$$

30. (c) Let, the salary of an officer = Rs. x

Amount left after house rent = x - 10% of x

$$= 90\% \text{ of } x = \text{Rs. } \frac{9x}{10}$$

Amount left after children's education

$$= \frac{9x}{10} - 15\% \text{ of } \frac{9x}{10} = 85\% \text{ of } \frac{9x}{10}$$

$$= \frac{85}{100} \times \frac{9x}{10}$$

$$= \text{Rs. } \frac{153x}{200}$$

Amount left after spending on cloths =

$$\frac{153x}{200} - 10\% \text{ of } \frac{153x}{200}$$

$$= 90\% \text{ of } \frac{153x}{200}$$

$$= \frac{90}{100} \times \frac{153x}{200}$$

$$= \text{Rs. } \frac{1377x}{2000}$$

$$\therefore \frac{1377x}{2000} = 1377$$

∴ His salary = Rs. 2000

**Alternative :** His salary

$$= 1377 \left( \frac{100}{100-10} \right) \left( \frac{100}{100-15} \right) \left( \frac{100}{100-10} \right)$$

$$= 1377 \times \frac{100}{90} \times \frac{100}{85} \times \frac{100}{90} = \text{Rs. } 2000$$

31. (b) We know that if price increases by x% then required

$$\text{per cent decrease} = \frac{x}{100+x} \times 100\%$$

$$= \frac{30}{100+30} \times 100 = \frac{30 \times 100}{130} = \frac{300}{13} = 23\frac{1}{13}\%$$

32. (a) The price of the single ticket =  $\frac{84}{105} \times \frac{100}{1} \times \frac{100}{125}$

= Rs. 64.

33. (b) We Know that

$$A = P \left( 1 + \frac{R}{100} \right)^n$$

$$\text{or } 540 = P \left( 1 + \frac{20}{100} \right)^2$$

$$\text{or } 540 = P \times \frac{6}{5} \times \frac{6}{5}$$

$$P = \frac{540 \times 25}{36} = 375 \text{ cm.}$$

34. (d) Total mixture = 40 litres  
Water present in mixture = 10% of 40 = 4 litres  
Let, x litre water is added to the mixture

$$\frac{4+x}{40+x} \times 100 = 20$$

$$\text{or } 400 + 100x = 800 + 20x$$

$$\text{or } 80x = 400$$

$$\therefore x = 5 \text{ litres}$$

35. (d) Amount of alcohol in 9 ml lotion = 50% of 9

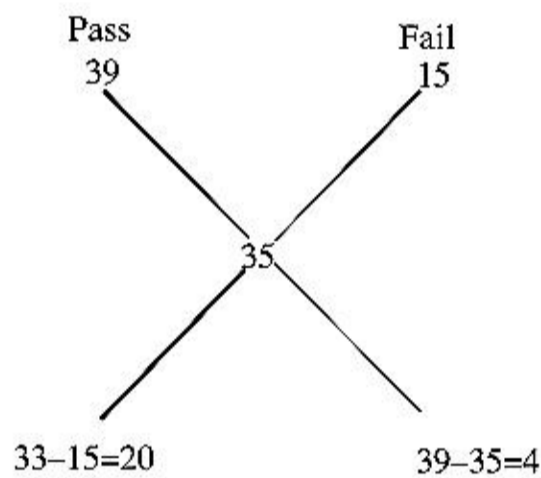
$$= \frac{50}{100} \times 9 = 4.5 \text{ ml.}$$

Let, x ml water is added to the solution.

$$\therefore \frac{4.5}{9+x} \times 100 = 30 \quad \text{or, } 45 = 27 + 3x$$

$$\therefore x = 6 \text{ ml.}$$

36. (c)



$$20 : 4$$

$$5 : 1$$

$\therefore$  Percentage of passed candidates

$$= \frac{5}{(5+1)} \times 100 = 100$$

37. (d) Measure of 6th observation = Total measure of 11 observations - (total observations of 1st five observations + total observations of last five observations)

$$= 11 \times 90 - (5 \times 87 + 5 \times 84)$$

$$= 990 - (435 + 420)$$

$$= 990 - 855 = 135$$

38. (a) Let the original strength of the class = x

$$\therefore \frac{x \times 40 + 12 \times 32}{x + 12} = 40 - 4$$

$$\text{or } \frac{40x + 384}{x + 12} = 36$$

$$\text{or } 40x + 384 = 36x + 432$$

$$\text{or } 40x - 36x = 432 - 384$$

$$\text{or } 4x = 48$$

$$\therefore x = 12$$

39. (c) Let average age of 8 person = x years and average age of 2 women = y years.

$\therefore$  Total age of 8 person = 8x years

& total age of 2 women = 2y years

$$\therefore \frac{8x + 2y - (35 + 45)}{8} = x + 2$$

$$\text{or } 8x + 2y - 80 = 8x + 16$$

$$\text{or } 2y = 96 \therefore y = 48$$

Hence average age of two women is 48 years.

40. (d) The number of police involved =  $\frac{3}{5} \times 135 = 81$

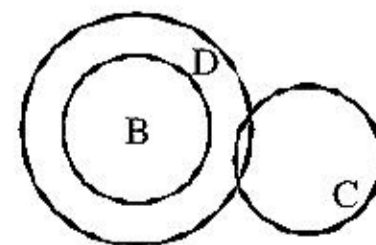
$\therefore$  Required number of supporters =  $81 \times 9 = 729$

- 41-44. Let weight of article C be x

According to question, weight of all iron article is as follows :

A	B	C	D	E
9x	4.5x	x	2x	4x

41. (a) 42. (c) 43. (b) 44. (c)  
45. (a) The prices of gold may vary due to any reason but not necessarily due to the prices won in designing gold ornaments.  
46. (b) The ministers and officers are working towards improving the relationship between the two countries only after the prime minister's decision to improve the bilateral liasion (relation)  
47. (d) the slashing of prices may invoke some interest in the field of computer but the main reason behind learning this skill has to be academic interest.  
48. (d) The fact that the bank has completed its 25 years will assure the customers of its dependability but customer will mainly be attracted because of services and profitable schemes.  
49. (a) The Speed Swimming Gear company has persuaded Roy to be photograph in their goggles which obviously suggests that they were confident of his victory.  
50. (c) Instead of cautioning him Roy's coach predicted his comfortable win.  
51. (d) Roy may well have lost due to his bad performance and not because of any external element.  
52. (b) The fact that Roy has won his last five races and was thought to be an outright winner but he still lost it comprehensively recording his worst time ever indicates that the match could have been fixed.  
53. (a) The statement is clearly the blend of both the assumption.  
54. (b) The assumption (II) is almost same as statement how ever (I) is wrong since there are many things that we study but fail to understand.  
55. (d) Statement 'all birds are dogs' (type-A) and statement 'some dogs are cats' (type-I) does not give any conclusion.



56. (d) Mohan is an Indian does not prove that he is honest or dishonest.
57. (d) Since 25% candidates have qualified that means atleast those must have fulfilled one of the criteria of having secured 35% and above in each of the subjects.
58. (d) It is mentioned that food was stored in open for almost twelve hours hence stale food could have been the reason behind the disaster.
59. (d) The use of word 'hassle-free' suggests that the company assumed that people seek convenience and comfort.
60. (d) The flats are constructed for the middle class and if the prices are higher then it is obvious that they are not going to buy it.
61. (c)
62. (d)
63. (b)
64. (a)
65. (a)
66. (a)
67. (d)
68. (b)
69. (d)
70. (c)
71. (c)
72. (b)
73. (b)
74. (b)
75. (d)
76. (d)
77. (b)
78. (b)
79. (a)
80. (a)
81. (a) The growth of Indian steel industry and its rank among other steel-producing nations are both stated in the first paragraph itself.
82. (b) The fact that I I S I has projected 4.9 % growth in the global demand for steel is mentioned in the first paragraph.
83. (d) The answer of this question comes right after the answer of previous question.
84. (d) Option (b) and (c) are stated towards the end of first paragraph where as, (a) is stated in the last paragraph, however 12.5 million tonnes mentioned in the option (d) is not the projected enhancement.
85. (d) The fact that only Rs. 6000 crores has been spent instead of Rs. 20,000 crores required for fair. The implementation of N.R. E. G – clearly suggests that it has not been fair. The other two options are mentioned in first paragraph.
86. (d) (a) and (c) are mentioned in second paragraph whereas (b) is clearly written in first paragraph.
87. (d) The answer can be found in second paragraph.
88. (b) It is the first sentence of the fourth paragraph.
89. (d) The close perusal of the first paragraph gives us this answer. The two sentences that form this conclusion are: (a) --- from sensation, memory is produced--- (first paragraph); (b) 'Now from memory, experience is produced in men'. (first paragraph) while the other options (a), (b) and (c) are also stated but they do not help in understanding relationship between sensation and memory.
90. (c) "For men of experience know that the thing is so, but do not know why, while the others know the 'why' and the cause." (Second paragraph). The word 'others' in the above sentence means artists, the men of wisdom. Hence (c) is the answer. Consequently (a) and (d) are automatically proved wrong while (b) does not define the difference.
91. (a) The answer is quite obvious in the first few sentences of fourth paragraph.
92. (a) While the other three options are mentioned fleetingly at some place or the other, the main thing is the relationship between art and experience which eventually tells us that experience gives rise to art but art defines the 'causes', the 'why' behind things which experience fails to do.
93. (d) After getting acquainted with the author's deep concern for the pathetic condition of forests and indifference of the ministry of environment and forests, it is not tough to assume that the author is most likely to agree with all the three options.
94. (a) It is stated fourth paragraph onwards that india lacks specialists in this area and the government can work in concomitance with pathogenists only when they exist.
95. (a) On the contrary to what is given in (a) the researchers find it even more difficult to track the new aspects of the same disease due to micro climatic changes every year. (seventh paragraph)
96. (a) (a) consists of both (a) and (c). According to passage the lack of scientist, apathy of government and bureaucracy and corruption of politicians are all collectively responsible for the tragic condition of forests, hence there is a need to rectify them.
97. (d) (a) and (c) are not there in passage. The fourth paragraph's sentence "..... percolation is the major factor with nuts ..... ." justifies the answer.
98. (d) In the fourth paragraph it is said that both the percolation and 'convection current' theories may be true, however "depending upon the material" is added to it which strongly hints towards(d).
99. (d) The root cause behind the problem according to the passage lies with the difference in the size of grains.
100. (b) Paragraph five: "pressure exerted at the bottom increases in direct proportion to the liquid's height". As the liquid (water) trickles down, its height decreases hence, the pressure decreases.
101. (d) Let, the number of passengers travelling by I and II class = x and 50x  
and, fares of I and II class = 3y and y.  
∴  $x \times 3y + 50x \times y = \text{Rs. } 1325$   
 $53xy = 1325$

$$\therefore xy = \frac{1325}{53} = 25$$

$\therefore$  Amount collected from the II class passengers =  $50xy$   
 $= 50 \times 25 = \text{Rs. } 1250.$

102. (2) According to the given information

$$\frac{50,000 \times 12}{60,000 \times (12 - x)} = \frac{20}{18}$$

$$\text{or } \frac{50,000 \times 12 \times 18}{60,000 \times 20} = 12 - x$$

$$\therefore x = 3 \text{ months}$$

103. (1) Let Sanjay invest Rs.  $x$  in the business.  
 Since, at the end of the year Rahul and Sanjay both get equal amount as profit

$$\text{Then, } \frac{8000 \times 12}{x \times 6} = \frac{1}{1}$$

$$\therefore x = \text{Rs } 16,000$$

104. (4) Profit per week =  $3000 + 1000 = \text{Rs. } 4000$   
 profit per unit =  $60 - 40 = \text{Rs. } 20$

$$\therefore \text{Required unit per week} = \frac{4000}{20} = 200$$

105. (2) Let cost price = Rs.  $x$   
 According to question  
 $(x + 17\% \text{ of } x) - (x - 19\% \text{ of } x) = 62$   
 or  $117\% \text{ of } x - 81\% \text{ of } x = 62$   
 or  $36\% \text{ of } x = 62$

$$\text{or } 36 \times \frac{x}{100} = 62$$

$$\therefore x = \frac{62 \times 100}{36} = \text{Rs. } 450.$$

106. (b) 1st man can do in 3 days =  $\frac{3}{7}$  part of the work

2nd man can do in 3 days =  $\frac{3}{8}$  part of the work

$$\text{Boy can do in 3 days} = 1 - \left( \frac{3}{7} + \frac{3}{8} \right)$$

$$= \frac{11}{56} \text{ part of the work}$$

$$\therefore \text{Ratio of their wages} = \frac{3}{7} : \frac{3}{8} : \frac{11}{56}$$

$$= 24 : 21 : 11$$

$$\therefore \text{1st man's share} = \frac{24}{24 + 21 + 11} \times 1400$$

$$= \frac{24}{56} \times 1400 = \text{Rs. } 600.$$

$$\text{2nd man's share} = \frac{21}{24 + 21 + 11} \times 1400$$

$$= \frac{21}{56} \times 1400 = \text{Rs. } 525$$

$$\text{Boy's share} = \frac{11}{24 + 21 + 11} \times 1400$$

$$= \frac{11}{56} \times 1400 = \text{Rs. } 275.$$

107. (a) 1st man can do in 3 days =  $\frac{3}{6}$  part of the work

2nd man can do in 3 days =  $\frac{3}{8}$  part of the work

$$\text{Boy can do in 3 days} = 1 - \left( \frac{3}{6} + \frac{3}{8} \right)$$

$$= \frac{6}{48} \text{ part of the work}$$

$$\therefore \text{Ratio of their wages} = \frac{3}{6} : \frac{3}{8} : \frac{6}{48}$$

$$= \frac{1}{2} : \frac{3}{8} : \frac{1}{8} = 4 : 3 : 1$$

$$\text{Boy's share} = \frac{1}{4 + 3 + 1} \times 600$$

$$= \frac{1}{8} \times 600 = \text{Rs. } 75.$$

108. (c) 15 men are working 210 days for complete 1 work

$\therefore$  15 men are working 10 day for complete  $\frac{1}{21}$  work

$$\text{Rest work} = 1 - \frac{1}{21} = \frac{20}{21}$$

$$\text{Now, } M_1 = 15 \quad M_2 = 15 + 30 = 45$$

[Since 15 men of efficiency are added]

$$W_1 = 1 \quad W_2 = \frac{20}{21}$$

$$D_1 = 210 \quad D_2 = ?$$

We have,

$$M_1 D_1 W_2 = M_2 D_2 W_1$$

$$\text{or } 15 \times 210 \times \frac{20}{21} = 45 \times 1 \times D_2$$

$$\therefore D_2 = \frac{15 \times 210 \times 20}{21 \times 45} = \frac{200}{3} \text{ days}$$

$\therefore$  Total days to complete this work

$$= 10 + \frac{200}{3} = \frac{230}{3} = 76 \frac{2}{3} \text{ days.}$$

109. (a) Work done by 3rd tap in 1 min

$$= \frac{1}{15} - \left( \frac{1}{10} + \frac{1}{12} \right)$$

$$= \frac{-7}{60} \text{ part}$$

-ve sign denotes that 3rd tap empty the tank.

Since, 3rd tap empty  $\frac{7}{10}$  part of the tank in 1 min

$$\therefore \text{3rd tap empty the full tank in } \frac{60}{7} \text{ min} = 8\frac{4}{7} \text{ min} \\ = 8 \text{ min } 34 \text{ seconds}$$

110. (b) Work done by waste tap in 1 min  $= \frac{1}{20} - \left( \frac{1}{12} + \frac{1}{15} \right)$

$$= -\frac{1}{10} \text{ part}$$

-ve sign denote that waste tap empty the tank.

Since, waste tap empty  $\frac{1}{10}$  part of the tank in 1 min

$\therefore$  Waste tap empty the full tank in 10 min.

111. (a) The two filler tap can fill the tank in 1 min

$$= \frac{1}{20} + \frac{1}{30} = \frac{1}{12}$$

$\therefore$  The two filler tap can fill the tank in 12 min.

$\therefore$  Half of the tank will be filled in 6 min.

Hence, it took  $(24 - 6 = 18 \text{ min})$  to fill the remaining half of the tank when the outlet pump is opened. Thus, the total time required to empty half of the tank

$$= \frac{18 \times 6}{18 - 6} = \frac{18 \times 6}{12} = 9 \text{ minutes}$$

Thus, capacity of the tank  $= 100 \times 9 \times 2 = 1800 \text{ litres}$

112. (b) LCM of 54 and 45 = 270

Let, distance = 270 km

Without stoppage, time taken in the whole journey

$$= \frac{270}{54} = 5 \text{ hours.}$$

With stoppage, time taken in the whole journey

$$= \frac{270}{45} = 6 \text{ hours}$$

$$\text{stoppage per hour} = \frac{1}{6} = 10 \text{ min.}$$

113. (a) When the two trains meet, distance between the trains will be zero. Therefore distance from the both trains of any place on the way will same.

Therefore, when trains meet both are equidistant to Rampur.

114. (d) We have,

$$\frac{n}{2} [2 \times 40 + (n - 15)] = 385 \text{ or } \frac{n}{2} (80 + 5n - 15) = 385$$

$$\text{or } 80n + 5n^2 - 5n = 770 \text{ or } 5n^2 + 75n - 770 = 0$$

$$\therefore n = 7 \text{ hrs.}$$

115. (c) Let the weight of tea worth Rs 25 per kg = x kg.  
According to question

$$\therefore 110\% \text{ of } \left[ \frac{x \times 25 + 30 \times 30}{x + 30} \right] = 30$$

$$\text{or } \frac{110}{100} \left[ \frac{25x + 900}{x + 30} \right] = 30$$

$$\text{or } 11(25x + 900) = 300(x + 30)$$

$$\text{or } 275x + 9900 = 300x + 9000$$

$$\text{or } 25x = 900$$

$$\therefore x = 36 \text{ kg.}$$

116. (b) Let, weight of sugar costing Rs 5.75 per kg = x kg

$$x \times 5.75 + 75 \times 4.50 = 5.50 \times (x + 75)$$

$$\text{or } 5.75x + 337.50 = 5.50x + 412.50$$

$$\text{or } 5.75x - 5.50x = 412.50 - 337.50$$

$$\text{or } 0.25x = 75$$

$$\therefore x = 300 \text{ kg}$$

117. (a) Let number of officers = x

$$\therefore \text{Number of workers} = (400 - x)$$

$$\text{Now, } 400 \times 3000 = x \times 10,000 + (400 - x) \times 2000$$

$$\text{Hence, officer} = 50$$

$$\therefore x = 50 \quad \therefore \text{worker} = 350$$

**Alternative :** Except option (a), others show total number of employees to be more than 400.

118. (a) Let, time taken by bus in the journey = t hours

Then, time taken by train in the journey =  $(6 - t)$  hours now,

$$40 \times t + 55(6 - t) = 285$$

$$40t + 330 - 55t = 285$$

$$15x = 45 \quad \therefore x = 3$$

$$\text{Hence, distance travel by train} = 3 \times 55 = 165 \text{ km}$$

119. (a) Let, amount of salt added = x kg

$$\text{Amount of salt in solution} = 2\% \text{ of } 30 = 0.6 \text{ kg}$$

Now,

$$\frac{0.6 + x}{30 + x} \times 100 = 10$$

$$6 + 10x = 30 + x$$

$$9x = 24$$

$$x = \frac{8}{3} = 2\frac{2}{3} \text{ kg}$$

120. (c) Let, speed of train = x km/hr

$$\text{Relative speed while crossing 1st person} = \frac{5}{18}(x - 3)$$

$$\text{Distance} = \text{length of train} = \frac{5}{18}(x - 3) \times 9 \dots \text{(I)}$$

Relative speed while crossing 2nd person

$$= \frac{5}{18}(x - 6)$$

$$\text{Distance} = \text{length of train} = \frac{5}{18}(x - 6) \times 10 \dots \text{(II)}$$

From equation (I) & (II) we get

$$\frac{5}{18}(x - 3) \times 9 = \frac{5}{18}(x - 6) \times 10 \text{ or } 9x - 27 = 10x - 60$$

$$x = 33 \text{ km/hr}$$

121. (a) Both statements (A) and (B) together are sufficient to answer the question.  
 Required earning =  $3,40,000 \times 3 \times \frac{2}{100} = \text{Rs } 20,400$
122. (b) Statement (B) alone is sufficient  
 $w \times y \times z = 6z$   
 $w \times y = 6$
123. (c) Statement (A) alone is sufficient.  
 $2D > 2E > 2C$   
 $D > E > C$
124. (d) Each statement is sufficient by itself to answer the question.  
 From A:  
 Required time =  $\frac{15 \times 20}{15 + 20} = \frac{300}{35} = 8\frac{4}{7}$  hours.  
 From B:  
 Ratio of the efficiencies of Sanjay and Mohit = 4 : 3  
 $\therefore$  Required time to finish the work by Sanjay and Mohit together =  $\frac{15 \times 4}{4 + 3} = \frac{60}{7} = 8\frac{4}{7}$  hours.
125. (c) If  $x = -2$   
 then,  $3x^2 + 2x - 1 = 3(-2)^2 + 2(-2) - 1 = 7$   
 and  $x^3 + 2x^2 + 1 = (-2)^3 + 2(-2)^2 + 1 = 1$   
 $\therefore A > B$
126. (a)  $\frac{a}{a+b} = \frac{c}{c+d}$   
 $ac + bc = ac + ad$   
 $cb = ad$
127. (b) The original price before mark-up  
 $= \frac{47.25 \times 100}{105} = 45$   
 Hence,  $45 > 44.89$   
 $B > A$
128. (a) The ratio of girls wearing spectacles to those who donot.  
 $= \frac{25\% \text{ of } 300}{300 - 25\% \text{ of } 300} = \frac{75}{225} = \frac{1}{3}$
129. (c) The ratio of rainfall between the months.  
 February and July = 1.4 : 2.0 = 7 : 10  
 Here  $\frac{7}{10} > \frac{2}{3}$
130. (b) The average monthly rainfall recorded for the 7 months  
 $= \frac{0.4 + 1.4 + 2.2 + 2.8 + 2.4 + 1.4 + 2}{7} = \frac{12.6}{7} = 1.8$   
 Here  $1.8 < 1.9$
131. (3)  $12\frac{1}{2}\%$  of 12.6 = 1.576  
 Rainfall during Febraury = 1.4  
 $1.576 > 1.4$
132. (c) The ratio between the average rainfall in May and January =  $\frac{2.4}{0.4} = \frac{6}{1}$   
 The ratio between the average rainfall in April and February =  $\frac{2.8}{1.4} = \frac{2}{1}$   
 $6 > 2$ .
133. (d) Required population of the country AD in the year 2006  
 $= 7100 \times \frac{10,000}{0.8} = 88750000$   
 i.e., 88750 thousand.
134. (a) It is clear from the table AG is the first and N is the second because their numbers of cases are 21,861 and 1862 respectively.
135. (d) Because the number of cases of M, T and AJ is very less.
136. (c) It is clear from given table.
137. (d) The required ratio = 6 : 6 = 1 : 1
138. (d) Required percentage increase =  $\frac{72895 - 61615}{61615} = \frac{11280}{61615} = 0.18$
139. (d) Titanium oxide. It is obvious from table.
140. (b) Highly volatile organic chemicals among the ten organic chemicals are.  
 1. Fatty Acids  
 2. Xylene  
 3. Aniline  
 4. Ethylene Glycol  
 5. Benzene.
141. (a) (c) is obviously wrong, the second part of (b) does not fit as the pipe smokers are not 'responsible'. (d) is incorrect because rejoined means reply or retort.
142. (b) (a) is wrong since overdrawn is definitely not an aspect of art. (c) cannot be held true since Indian art cannot be accused of imitation and one form of art can never be judged superior or inferior to other. Among (b) and (d), (b) fits better as it supports the later part of sentence as well.
143. (a) The answer is obvious since the other options are weak as one or other word doesnot fit at all.
144. (d) Prognostications means prediction. One may be declared optimistic only when one doesnot take heed of unpleasant situations. (a) is wrong because if a report is malicious there is no chance of benefit. (b) is wrong since sanguinary means violent and a report cannot be violent by any means. (c) is wrong because if the analysis is not pessimistic then what is the point of boisting of being optimist.
145. (c) The passage is clearly about 'abstraction' therefore (D) must be the first sentence with rules out (a). Now (b) is also wrong because ever since this discovery must come after defining which discovery (C) so we have (C) (B) as a sequence. So (d) is also ruled out.



146. (c) The passage is about accommodation theory which implies that (A) must be the first in the row which rules out (a) and (b). Now (d) is considered wrong since the examples in (B) are of subtle adaptation which lies in (C). Hence, (C) (B) is the sequence.
147. (b) (a) and (d) begin with (C) which starts with 'Thus' which cannot be the first sentence of the passage. (c) is wrong since jumping straight to 'fossil evidence' and then coming again to adaptation renders in congruity to the passage.
148. (a) (D) comes after (B) since 'it' in (D) alludes to the term 'bear market' in (B). So (B) (D) as a sequence leaves only (a) and (d) to choose from (A) is an explanation of (C), Hence (A) comes after (C) which rules out (d) as well.
149. (d) (a) is wrong since it gives a different meaning to the sentence which is unwarranted. (b) has incoherence of participles which is sorted out in (d).
150. (a) (b) and (d) are also correct but still (a) seems the best suited sentence.
151. (d) The pronoun 'one' is preferable to 'you' so, (a) and (c) are ruled out. Now (d) is chosen over (b) because (b) is unnecessarily complicated due to words like "the comprehension of" and 'analysing'.
152. (a) 'Entrusted upon' (c) and 'entrusted' within (d) do not fit here as when you are 'entrusted with' (a) something you are given its responsibility, like what Panchayats are there for.
153. (a) 'Led us to proper' is simply better suited than 'led us in prayer'. Hence the choice comes down to (a) and (b), out of which (a) clearly stands out since the 2nd parts of (b) do not complement each other.
154. (b) With Anyone we cannot associate you so, (c) is out. Now (b) is simply more clear and close to the original sentence in meaning than (d) and (a).
155. (b) (a) and (d) are wrong because they differ from the meaning of original sentence. (c) is wrong because how money makes you unhappy can be accepted not this one.
156. (a) 'They' is wrong so, (b) and (c) are marked out. (d) is also wrong because those maintaining is definitely not the best possible way to go about it.
157. (c) Has doesn't come with plural forms. It needs to be replaced with 'have'.
158. (c) It should be formed like : "when they want to tell the truth, Indians have an amazing way of doing so."
159. (b) It makes little or no sense. It could be formed as: "Addressing infrastructure gaps, therefore, needs to be our topmost priority."
160. (c) Preposition to should be used in place of 'for'.
161. (a) 162. (c) 163. (c) 164. (c)
165. (a) 166. (b) 167. (c) 168. (d)
169. (b) 170. (c) 171. (c) 172. (b)
173. (c) 174. (b) 175. (b) 176. (b)
177. (c) 178. (a) 179. (c) 180. (d)
181. (b) Sawn timber =  $\frac{16000-10000}{10000} \times 100 = 60\%$
- Logs =  $\frac{7000-4000}{4000} \times 100 = 75\%$
- Plywood =  $\frac{20000-14000}{14000} \times 100 \approx 42\frac{6}{7}\%$
182. (a) Price per cubic metre of plywood in 2002 = 17500  
Price per cubic metre of plywood in 2003 = 20,000.  
∴ Required increases = 2500
183. (c)  $40\%$  of 20000 +  $30\%$  of 15000 +  $30\%$  of  $\frac{7000}{800} \times 10000$   
= 8000 + 4500 + 2625 = Rs 15125.
184. (b)  $20000 \times \frac{105}{100} \times \frac{40}{100} + 15000 \times \frac{101}{100} \times \frac{30}{100}$   
 $+ 7000 \times \frac{110}{100} \times \frac{30}{100} \times \left(\frac{1000}{800}\right)$   
= 8400 + 4545 + 2887.5  
= Rs. 15832.50
185. (a) Required investment in high - risk stocks  
=  $\frac{11,05,00,000 \times 8.9}{100} = \text{Rs } 98,34,500$
186. (d) Required investment  
=  $11,05,00,000 \times \frac{48.3}{100} \times \frac{26}{100} = \text{Rs } 1,38,76,590$
187. (d) High-risk stocks (8.9%)
188. (c) It is clear from 2nd and 3rd pie - charts.
189. (a) Rajasthan (50%)
190. (c) Percentage of none of the newspapers is 0%. Hence each reader can read newspaper in the three languages
191. (c)  $25,00,000 \times \frac{75}{100} - 15,00,000 \times \frac{50}{100}$   
= 18,75,000 - 7,50,000 = 11,25,000
192. (a) It is clear from the given diagram.
193. (d) Required per cent increase. =  $\frac{175-150}{150} \times 100$   
=  $\frac{25}{150} \times 100 = 16\frac{2}{3}\%$
194. (a) Required average number of employees  
=  $\frac{150+125+175+225+250}{5} = \frac{925}{5} = 185$
195. (a) Required difference in Rs '0000  
=  $\frac{50+75+100+125+250}{5} - 100 = 120 - 100 = 20$   
Rs 2,00,000.

$$196. (d) \text{ Required per cent} = \frac{300}{300 + 325 + 350 + 350 + 400} \times 100$$

$$= \frac{300}{345} \times 100 = 86\frac{22}{23}\% \approx 87\%$$

197-200.

Subjects	Students	Girls	Boys
Art 216	168	48	
Biology	234	168	66
Law 360	360	Nil	
Computers	270	120	150
Maths	90	24	66
Political Science	630	360	270
<b>Total</b>	<b>1800</b>	<b>1200</b>	<b>600</b>

197. (b) Required no. of girls = 14% of 1200 = 168.

$$198. (a) \text{ Total no. of students in Biology} = 1800 \times \frac{13}{100} = 234$$

$$\text{No. of girls} = 1200 \times \frac{14}{100} = 168$$

$$\therefore \text{No. of boys} = 234 - 168 = 66.$$

$$\text{Now, total no. of students in Arts} = 1800 \times \frac{12}{100} = 216.$$

$$\text{No. of girls} = 1200 \times \frac{14}{100} = 168$$

$$\therefore \text{No. of boys} = 216 - 168 = 48.$$

$$199. (b) 270 : 360 = 3 : 4$$

$$200. (d) \text{ Required percentage} = \frac{168 - 48}{48} \times 100 = 250\%$$