Answers and Explanations

1	a	2	b	3	a	4	b	5	c	6	c	7	d	8	c	9	b	10	d
11	c	12	d	13	c	14	d	15	c	16	c	17	d	18	b	19	b	20	a
21	d	22	b	23	c	24	b	25	a	26	b	27	a	28	d	29	b	30	d
31	d	32	d	33	b	34	c	35	d	36	d	37	a	38	b	39	d	40	b
41	d	42	b	43	c	44	b	45	a	46	d	47	a	48	a	49	d	50	c
51	b	52	b	53	a	54	c	55	d	56	a	57	b	58	c	59	d	60	a
61	c	62	d	63	b	64	*	65	b	66	c	67	a	68	a	69	a	70	b
71	a	72	a	73	c	74	d	75	d	76	c	77	d	78	a	79	b	80	b
81	b	82	a	83	b	84	d	85	d	86	c	87	d	88	a	89	d	90	b
91	d	92	a	93	d	94	a	95	c	96	b	97	a	98	c	99	c	100	c
101	d	102	b	103	d	104	a	105	b	106	a	107	c	108	a	109	c	110	c
111	b	112	b	113	a	114	b	115	a	116	b	117	d	118	d	119	a	120	c
121	c	122	c	123	b	124	a	125	a	126	c	127	c	128	d	129	d	130	a
131	b	132	b	133	a	134	b	135	c	136	a	137	c	138	d	139	a	140	d
141	b	142	c	143	c	144	a	145	b	146	d	147	b	148	a	149	c	150	b
151	d	152	a	153	d	154	a	155	a	156	b	157	b	158	d	159	a	160	b
161	a	162	b	163	d	164	d	165	c	166	b	167	d	168	c	169	d	170	a
171	c	172	a	173	b	174	d	175	c	176	b	177	d	178	a	179	a	180	c
181	a	182	b	183	c	184	d	185	b										

1. a   All others are synonyms meaning 'to tear or cut'.

2. b   All others are synonyms of control.

3. a   All others mean 'to start'; cease means to stop.

4. b   All others mean 'on the edge'.

5. c   All others refer to something said in praise.

6. c   All others refer to a feeling of hatred.

7. d   All others are adjectives meaning 'skillful'.

8. c   All others are adjectives for persons who do not speak much.

9. b   All others are synonyms.

10. d   All others refer to persons who are madly enthusiastic about something.

11. c   'The student's' should be replaced with 'his'.

12. d   We are talking about 'every man or woman', therefore the pronoun used should be singular 'his/her', instead of 'their'.

13. c   The pronoun should remain consistent throughout the sentence, hence 'you' should be replaced with 'one'.

14. d   'Assure' is an intransitive verb and should be followed by an object. The correct usage here would be 'be sure of'.

15. c   The man being referred here is the object to the verb, hence 'who' should be replaced with 'whom'.

16. c   Both are pairs of antonyms.

17. d   'Alleviate' is an extended form of 'ease' and 'interrogate' is an extended form of 'question'.

18. b   Both are pairs of synonyms. All four words mean 'secret'.

19. b   Audience watch a drama and spectators watch a game.

20. a   Just as a building can have many stories, a book can have many chapters.

21. d   All others are pairs of synonyms.

22. b   In all other pairs, the first word is a part of the second word.

23. c   In all other pairs, the first word is an adjective referring to the second word.

24. b   In all other pairs, the first word is an adjective derived from the second pair.

25. a   In all other pairs, the first word refers to a fear of the second word.

26. b   D tells us that the passage is about continuation of previous night's discussion. B states what the discussion was about. C adds a point to it by using 'also'. A answers the question raised in C about the reason of conflicts.

27. a   B states that the document tells us about history, A states which part of history does it relate to, D elaborates further on the first generation poets by referring to Wordsworth and Coleridge.

28. d   C introduces the poet's large plans, A shows how they were replaced by new plans, D states how even these plans remained unfulfilled and B tells us what was the ultimate outcome of the plans.

29. b   B states our attitude towards value of time as we advance in life; C refers to the same by using the phrase 'we become miser in this sense'; and D shows how we become misers. A presents the concluding statement.

30. d   C relates knowledge to ignorance; B relates our thinking to our knowledge and states that our knowledge is always limited, a fact which leads to D that states that as knowledge is limited, our thinking is also limited. A concludes the passage.

31. d   C states India's position on exchange rate; A states why India's position is not surprising; B continues with the idea; D gives examples of exceptions to B.

32. d   D talks about the 'power' introduced in 1. A states that if 'it is an anchor in difficulties, it should be remembered in good times too'. C states the work done by some organizations and B adds to it.

33. b   B states what happens in the absence of punishment; A talks about the effect of such a situation; C adds to it by using 'also' and D states what can be done instead.

34. c   C continues with the fact that the vessel was moving away; A states that he looked around; D states that it was of no use; B explains why there was no use of looking around.

35. d   A continues with the idea introduced in 1. C states that the leader should be personally seen; D states what else should be insisted upon. B talks of allocating work to members in clear terms, and this should precede 6, which states how this has to be done.

36. d   A states that true friends are very rare; C states that as they are rare, they should be respected; B states some factors which should not be considered while making friends; and D states that in business realities, all the acquaintances are motivated by self interest and thus cannot be treated as genuine friends.

37. a   1 states what managers should guard against; D states how one can do so; C continues by using 'also'. A states that external appearances can be deceptive; B elaborates on the fact and leads to 6.

38. b   A states how demands for resources are made; C states what is done to offset adverse effects of cuts imposed by seniors; B states the importance of availability of adequate resources; and D re-emphasizes the point made in B.

39. d   B continues with the idea introduced in 1. A relates the idea to managers in an organization, who have to take ruthless decisions; D states how these decisions can be made easier to accept. C talks about delega... power, an idea that is continued in 6.

40. b C states how the first two categories mentioned in 1 should be dealt with, D talks about the last category; A continues by referring to 'the persons in this category'. B states how the wicked must be dealt with and leads to 6.

41. d Some dubbles are not bubbles but all dubbles are rubbles, so it follows that some of the rubbles are not bubbles.

42. b If all men are sad and all bad things are men, it follows that some sad things are bad.

43. c All Toms are bright, but no bright Tom is a Dick. Therefore, no Dick is a Tom.

44. b If all witches are devils and all devils are nasty, it implies that all witches are also nasty.

45. a No tingo is a bingo but all jingoes are bingoes. Hence, no jingo is a tingo.

46. d One cannot devote one's whole life to understanding another culture, if to appreciate other cultures first one has to spend time understanding one's own culture and people.

47. a Fresh experience enriches the writers soul, thus renewing him, in turn leading to the writer being fertile.

48. a An idea that brings in a tremendous disparity would not be able to work for general convenience and advantage, as stated in the argument.

49. d

50. c The passage states that even those whom we intimately know, can surprise us at times with some unknown facet of their personality.

51. b Since base of each triangle will be counted once,
Sum of perimeters of the triangles = Perimeter of the square + 2 × (Sum of its diagonals).
But each of the other two sides of the triangles is common to two triangles, so it will be counted twice.
Area of the square = 4, therefore length of its side = 2 and perimeter = 8.
Also its diagonal = $2\sqrt{2}$.
So the required perimeter = $(8 + 2 \times 4\sqrt{2}) = 8(1 + \sqrt{2})$.

52. b $5^6 - 1 = (5^3)^2 - 1 = (125)^2 - (1)^2 = (125 + 1)(125 - 1)$
$= 124 \times 126 = 31 \times 4 \times 126$.
So among the given answer choices, it is divisible by 31.

53. a After 2 years, the price of the flat will be $(1)(1.10)^2$
= Rs.1.21 lakh.
Correspondingly the price of the land will be
$(1.1)(1.05)^2$ = Rs.1.21275 lakh.
Hence, the price of the plot = Rs.(1.21275 − 1.21) lakh
= Rs.275 more than that of the flat.
Hence, if they exchange, Ram will have to pay this amount to Prem .

For questions 54 to 57:
Please note that the best way to solve this question is by working backwards.
E.g. after the 4th round, each one of them had Rs.32. Since it is Vibha who lost in this round, all the remaining three must have doubled their share.
In other words, they would have had Rs.16 each after the 3rd round.
Since the increase is of Rs.16 in each one's share, i.e., Rs.48 overall which comes from Vibha's share, her share before the 4th round was (32 + 48) = Rs.80, after the 3rd round.
Working backwards in this manner, we can get the following table.

	Share of each			
	Suvarna	**Tara**	**Uma**	**Vibha**
4. Vibha	32	32	32	32
3. Uma	16	16	16	(32 + 48) = 80
2. Tara	8	8	(16 + 40 + 8 + 8) = 72	40
1. Suvarna	4	(8 + 4 + 36 + 20) = 68	36	20
Initial	(4 + 34 + 18 + 10) = 66	34	18	10

54. c Suvarna started with Rs.66.

55. d It was Vibha who started with the lowest amount, viz. Rs.10.

56. a It was Suvarna who started with the highest amount, viz. Rs.66.

57. b At the end of the second round, Uma had Rs.72.

58. c **Hint:** The best way to solve this question is to multiply the alternatives by 72 and find which one gives you the middle three digits as 96.7.
To save time, you can multiply 72 by integer values only.
E.g. 72 × 3 = 216, 72 × 5 = 360 and 72 × 7 = 504.
It is to be noted that when the decimal part of the answer will be multiplied by 72, the actual answer will increase.
Let us now roughly multiply the decimal values of the options also by 72. E.g. 72 x 0.2 = 14.4, 72 × 0.1 = 7.2 and 72 × 0.5 = 36.
So option (a) will yield (216 + 14) = 230 (approximately), (b) will yield (360 + 7) = 367 (approximately), (c) will yield (360 + 36) = 396 (approximately) and (d) will yield (504 + 14) = 528 (approximately).
Of these, only option (c) satisfies our requirement of 2nd and 3rd digits being 96.

59. d Let us assume that the person has Rs.100.
With this, he can buy 50 oranges or 40 mangoes.
In other words, the price of an orange is Rs.2 and that of a mango is Rs.2.50.
If he decides to keep 10% of his money for taxi fare, he would be left with Rs.90.
Now if he buys 20 mangoes, he would spend Rs.50 and will be left with Rs.40.
Thus, he can buy 20 oranges.

60. a The given expression is of the form $\frac{[x^3 + y^3]}{[x^2 - xy + y^2]}$.

We know, $\mathbf{x^3 + y^3} = (x + y)(x^2 - xy + y^2)$.

Thus, required value = $(x + y) = (55 + 45) = 100$.

61. c The largest angle in a right-angled triangle is 90º, which corresponds to the highest part of the ratio.
Let us evaluate each option.
In (a), the remaining two angles would be 30º and 60º, which is possible.
In (b), the remaining two angles would be 45º each, which is again possible.
In (c), the remaining two angles would be 15º and 45º, which is not possible as the sum of the angles is not 180º.

62. d Since n(n + 1) are two consecutive integers, one of them will be even and thus their the product will always be even.
Also, sum of the squares of first 'n' natural numbers is

given by $\frac{n(n+1)(2n+1)}{6}$.

Hence, our product will always be divisible by this.
Also you will find that the product is always divisible by 3 (you can use any value of n to verify this).
However, we can find that option (d) is not necessarily true. E.g. If n = 118, (2n + 1) = 237 or if n = 236, then (n + 1) = 237 or if n itself is 237, etc.

63. b The best way to solve this question is by the method of simulation. Choose any prime number greater than 6 and verify the result.
When 7 is divided by 6, it gives a remainder 1. So our answer could be (a) or (b). When 11 is divided by 6, it gives a remainder 5. Hence, our answer is (b).

64. * There cannot be four or more blue balls.
Case 1:
If there are three blue balls, then they can be only in box 1, 3 and 5.
Case 2:
If there are two blue balls, then total number of cases = $^5C_2$ = 10
But in 4 cases the blue ball will be in adjacent boxes. These cases are when blue balls in boxes 1 and 2 or 2 and 3 or 3 and 4 or 4 and 5.
Therefore, total number of cases when there are two blue balls = 10 − 4 = 6
Case 3:
If there are one blue ball, then total number of cases = $^5C_1$
= 5
Case 4:
If there are no blue ball, then total number of cases =

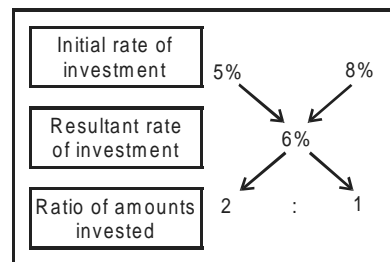$^5C_5$
= 1
Hence, total number of cases = 1 + 6 + 5 + 1 = 13.
* The correct answer is not available in the given options.
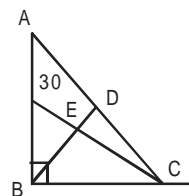
65. b

In $\triangle ABC$, $\angle ACB = 180 - 90 - 30 = 60°$.
$\therefore \angle DCE = 30°$, since $\angle CDE = 90°$.
In $\triangle CED$, $\angle CED = 180 - 90 - 30 = 60°$.

66. c Using alligation, the ratio of the amounts invested at both the rates = 2 : 1.
Since he has invested Rs.3,000 at 5%, he should further invest Rs.1,500 at 8% to earn a total interest of 6% per annum.

Alternative method:
Let the amount invested at 8% be Rs.x.
Then,

$$3000 \times \frac{105}{100} + x \times \frac{108}{100} = (3000 + x)\frac{106}{100}$$

$\Rightarrow 0.02x = 30 \Rightarrow x = 1,500$
$\therefore$ He should further invest Rs.1,500 at 5% to earn a total interest of 6% per annum.

67. a Let there be 100 voters in all.
Initially, 40 of these promised to vote for P, while 60 of them promised to vote for Q.
On the last day, (15% of 40) = 6 voters went back of their promise and voted for Q.
Also, 25% of 60 = 15 voters shifted their interest from Q to P.
So finally, P end up getting (40 − 6 + 15) = 49 votes and Q end up getting (60 − 15 + 6) = 51 votes.
Hence, margin of victory for Q = (51 − 49) = 2, which is true. Hence, there were 100 voters in all.

68. a In the given figure, the area of the circle = πr^2.
To find out the area of the circle, we need to find out the length of the side of the square.
We know, OR = OT + TR = OT + OS = 2r.
In right-angled triangle ORS, OR = 2r and OS = r.
So $SR^2 = OR^2 - OS^2$.
But SR^2 = Area of the square = $4r^2 - r^2 = 3r^2$.

Hence, the required ratio = $\frac{\pi}{3}$.

69. a In the same time as A runs 200 m in the race, S runs 180 m and N runs 160 m.
In other words, in the same time as S runs 180 m, N runs 160 m.
So in the same time as S runs 100 m, N will run

$$\left(100 \times \frac{160}{180}\right) = 88.89 \text{ m.}$$

Hence, in a 100 m race, S will beat N by $(100 - 88.89) = 11.11$ m.

70. b If the numbers are $(x - 2)$, x and $(x + 2)$, then $3(x - 2) - 2 = 2(x + 2)$.
∴ $x + 2 = 14$.

71. a If x men were there on day one, there would be $(x - 110)$ men on the 12th day.
Hence, on an average, there were $(x - 55)$ men.

The job takes $\frac{3}{2}$ times the normal time.

Hence, the average number of people = $\frac{2}{3}$.

$$\Rightarrow x - 55 = \frac{2}{3}x$$

Hence, $x = 165$

72. a Total number of four-digit numbers that can be formed = 4!.
If the number is divisible by 25, then the last two digits are 25.
So the first two digits can be arranged in 2! ways.

Hence, required probability = $\frac{2!}{4!} = \frac{1}{12}$.

73. c Let the first typist takes X hours and the second takes Y hours to do the whole job.
When the first was busy typing for 3 hr, the second was busy only for 2 hr.

Both of them did $\frac{11}{20}$ of the whole work.

$$\therefore \frac{3}{X} + \frac{2}{Y} = \frac{11}{20}.$$

When the assignment was completed, it was revealed that each typist had done half the work.

∴ The first one spent $\frac{X}{2}$ hr, and the second, $\frac{Y}{2}$ hr.

And since the first had begun one hour before the

second, we have $\frac{X}{2} - \frac{Y}{2} = 1$

$$\Rightarrow X = 10 \text{ hr, } Y = 8 \text{ hr.}$$

74. d Since I live X floors above the ground floor and it takes me 30 s per floor to walk down and 2 s per floor to ride the lift, it takes 30X s to walk down and 2X s to ride the lift after waiting 420 s.
$$\Rightarrow 30X = 2X + 420 \Rightarrow X = 15.$$

Alternative method:
$X > 14$ as time taken to walk has to be greater than 7 min.

75. d Since 5-12-13 forms a Pythagorean triplet, the triangle under consideration is a right-angled triangle with height 12 and base 5.

So area of the triangle = $\left(\frac{1}{2}\right)(12)(5) = 30$ sq. units.

If area of the rectangle with width 10 units is 30 sq. units, its length = 3 units.
Hence, its perimeter = $2(10 + 3) = 26$ units.

76. c Since AD = BC (Opposite sides of a rectangle are equal.)
AB + AC = 5BC and AC − BC = 8 or AC = BC + 8
∴ AB = 4(BC − 2)
By Pythagoras' Theorem, $AB^2 + BC^2 = AC^2$
Expressing AB and AC in terms of BC we get, BC = 5.
∴ AB = 12 and AC = 13
So area of the rectangle = 5 × 12 = 60.
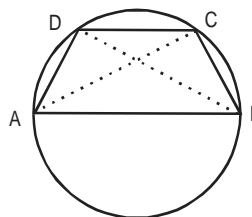
77. d If the roots are a and a^2, the product of roots = $a^3 = -8$.
∴ a = −2.
Hence, sum of the roots = $k = -(a + a^2) = -(-2 + 4) = -2$.

78. a

If we draw the imaginary lines AC and BD, we find that ∠CAD and ∠CBD are subtended by the same chord DC.
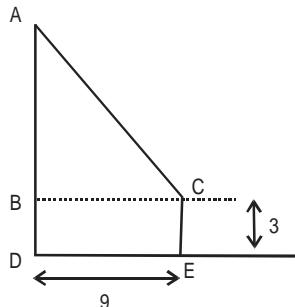∴ ∠CAD = ∠CBD = 30°.
Thus, ∠DBA = (70 − 30) = 40°.
Also, ∠DBA and ∠ACD are subtended by the same chord DA.
Hence, ∠ACD = DBA = ∠40°.

79. b

The figure can be drawn as shown above.
Height of the wall = AD = AC = (AB + 3) or AB = (AC − 3).
In right-angled triangle ABC, $AB^2 + BC^2 = AC^2$.
Thus, $(AC − 3)^2 + 81 = AC^2$.
∴ AC = 15 m.
Hence, height of the wall = 15 m.

Hint: Please note that the same multiple of all the triplets should also be triplets. E.g. if 3-4-5 is a triplet, then 3(3-4-5) should also be triplet or 9-12-15 is also a triplet.
Note that the base of the triangle is 9, so other two should be 12 and 15.

80. b Profit percentage in each case is

(i) 10%

(ii) $\dfrac{(100 \times 100)}{900} = \dfrac{100}{9}\%$

(iii) $\dfrac{100 \times 1.1.1 - 100}{100} \times 100 = 10\%$

(iv) $\dfrac{(10 \times 100)}{95} = \dfrac{200}{19}\%$

81. b Let the length of the escalator be 90 ft.
(There is no loss of generality in making this assumption.)
Let the speed of the escalator be y ft per second and the man's walking speed be x ft per second.
According to the question, we get

$\dfrac{90}{30} = x + y$

$\dfrac{90}{90} = x - y$

Adding the above equations, we get 2x = 4, i.e., x = 2.
∴ Time taken by the man to walk up the escalator

when it is not moving = $\dfrac{90}{2}$ or 45 s.

82. a Let one of the numbers be x. So the other number would be
(x + 4).
According to the question, we have

$\dfrac{1}{x} + \dfrac{1}{(x + 4)} = 21$ or x = 3.

Hint: Please note that the sum of reciprocals is basically

$= \dfrac{(\text{Sum of the integers})}{(\text{Product of the integers})}$. So we have to find two

integers whose sum is 10 and whose product is 21.
So x + (x + 4) = 10 or x = 3.

83. b The bells will chime together after a time that is equal to the LCM of 18, 24 and 32 = 288 min = 4 hr and 48 min.

84. d $3m^2 - 21m + 30 < 0$
∴ $m^2 - 7m + 10 < 0 \Rightarrow (m - 5)(m - 2) < 0$.
So either (m − 5) < 0 and (m − 2) > 0 or (m − 2) < 0 and (m − 5) > 0.
Hence, either m < 5 and m > 2, i.e., 2 < m < 5 or m < 2 and m > 5.

85. d Required cost = $6\left[1 + \dfrac{1000}{100}\right]^2 = 6(11)^2 = 121 \times 6$

= 726.

86. c If x = 1, we have min(3, 3) = 3.
If x = 2, we have min(6, 0) = 0.
If x = 3, we have min(11, −3) = −3.
If x = 0.5, we have min(2.25, 4.5) = 2.25.
If x = 0.3, we have min(2.09, 5.1) = 2.09.
Thus, we find that as x increases above 1 and when it decreases below 1, the value of the function decreases.
It is maximum at x = 1 and the corresponding value = 3.

Hint: Please note that the highest value of the given fraction will be at a point where $(2 + x^2) = (6 − 3x)$, as even if one of the values increases beyond this, the other value will be the minimum value.
If we equate the two, we get $x^2 + 3x − 4 = 0$. Solving this, we get x = 1 or x = −4.
Since x > 0, it has to be 1 and hence the result.

87. d Let us choose a town, say A.
If I were to consider this as the base town and construct two roads such that I connect any pair of towns, I get the following combinations:
1. AB − BC, 2. AB − BD, 3. AC − CB, 4. AC − CD,
5. AD − DB and 6. AD − DC.
From any of these combinations, if I were to construct a road such that it again comes back to A, then it would form a triangle.
To avoid a triangle, the third road that I construct should not be connected to A but to the third town.
Hence, the combination would be:
1. AB − BC − CD, 2. AB − BD − DC, 3. AC − CB − BD,
4. AC − CD − DB, 5. AD − DB − BC and 6. AD − DC − CB.
Thus, from each town, we can construct 6 such combinations.
Hence, total number of combinations that we can have from four towns = (6 × 4) = 24.

88. a If a = −2 and b = −3, then our expression will be
me(−2 + mo(le(−2, −3)), mo(−2 + me(mo(−2), mo(−3)))
= me(−2 + mo(−3), mo(−2 + me(2, 3)))
= me(−2 + 3, mo(−2 + 3))
= me(1, mo(1)) = me(1, 1) = 1.

89. d Please note that the fastest way to solve these sums is the method of simulation, i.e., select any arbitrary values in the range given and verify whether the option holds good. E.g. a = 2, b = 3.
In this case, option (a) LHS = mo(le(2, 3)) = mo(2) = 2.
RHS = (me(mo(2), mo(3)) = (me(2, 3)) = 3. Hence, LHS < RHS.
(b) LHS = mo(le(2, 3)) = mo(2) = 2. RHS = (me(mo(2), mo(3)) = (me(2, 3)) = 3. Hence, LHS < RHS.
(c) LHS = mo(le(2, 3)) = mo(2) = 2. RHS = (le(mo(2), mo(3)) = le(2, 3) = 2. Hence, LHS = RHS.
(d) LHS = mo(le(2, 3)) = mo(2) = 2. RHS = (le(mo(2), mo(3)) = le(2, 3) = 2. Hence, LHS = RHS.

90. b Let us verify by taking arbitrary values of a in the range specified.
(a) a > 3. Let a = 4.
So me(a² − 3a, a − 3) = me(4, 1) = 4 > 0.
(b) 0 < a < 3. Let a = 2.
So me(a² − 3a, a − 3) = me(−2, −1) = −1 < 0.
(c) a < 0. Let a = −1.
So me(a² − 3a, a − 3) = me(4, −4) = 4 > 0.
(d) a = 3, me(a² − 3a, a − 3) = me(0, 0) = 0.

91. d We can work this on the above lines. E.g.
(a) a > 3. Let a = 4. So le(a² − 3a, a − 3) = le(4, 1)
= 1 > 0.
(b) 0 < a < 3. Let a = 2. So le(a² − 3a, a − 3) = le(−2, −1)
= −2 < 0.
(c) a < 0. Let a = −1. So le(a² − 3a, a − 3) = le(4, −4)
= −4 < 0.

92. a Statement I suggests that xyz is odd. This is only possible if all three of them are odd.
Hence, z – x is even.
So only statement I is required to answer the question.

93. d Statement I is useless as it only tells that if x and y are consecutive positive even integers, then $(x - y)^2$ has to be equal to 4.
Statement II suggests the possibility that the numbers could be 2 and 4. But it does not suggest which is x and which is y.
Hence, we cannot find the value of x using either statements.

94. a It is clear that only statement I is required to answer the question, if CP = 0.8 SP, then SP = $\left(\dfrac{1}{0.8}\right)$CP.
∴ SP = 1.25 CP
Thus, profit percentage is 25.

95. c Both statements are required to answer the question. Statement I tells us that the triangle is an isosceles triangle. In an isoceles triangle, the altitude is also the median and bisects the third side.

Hence, if we know the altitude length and the length of the congruent sides in an isoceles triangle, we can find its base. And if we know the base and the height of a triangle, we can find its area.

96. b Statement II in itself suggests the price of a banana. Since we can buy 48 bananas in Rs.12, price of a banana = Re.0.25. And since this price is after 50% reduction, the actual price of a banana = Re.0.5.

97. a Since 116 is less than 11^2, it can be figured out that both the first two terms of the AP should be less than 10.
There is only one pair of positive integers whose squares add up to 116 and they are 10 and 4.
Thus, these two should be the first two terms of the AP.
Hence, the first term is 4, and can be obtained only from statement I.
Statement II merely suggests that the fifth term is of the form 7k. Nothing correct can be concluded from this.

98. c This can be solved using both the statements together.
From statement I, we know that L × B = 48 or B = $\dfrac{L}{48}$.
From statement II, we know $L^2 + B^2 = 100$
Combining statements I and II,
$L^2 + \left(\dfrac{L}{48}\right)^2 = 100$.
L is the only unknown in this equation and can be found out.

99. c We know that product of two numbers = LCM × HCF
= 36 × 2 = 72.
So x = $\dfrac{72}{18}$ = 4.
Hence, both the statements are required to answer the question.

100. c This can be answered using both the statements.
Statement II suggests that both t and z are odd.
Statement I suggests that (x + y + t) is even.
Since the difference between an even and an odd number is always odd, (x + y + t) – z will be odd.

101. d The dismantling of the welfare state helped Gingrich lead to the Republican revolution of 1994. Refer second paragraph line 2.

102. b Money has not been mentioned as what a party needs to win elections. Refer first paragraph, line 1.

103. d All of the mentioned names belong to the Republicans.

104. a They were tactically defeated by the Democrats because of the government shutdown. Refer fourth paragraph line 2.

105. b The passage is basically about the mistakes committed by the Republicans and their odd ways of thinking.

106. a 'Obsolete' has been used to imply old/antiquated.

107. c The real danger to the Republicans is the fact that its axioms, and not its policies, are under fire. Refer ninth paragraph line 1.

108. a The idea of small governments is being ground to dust by Buchman. Refer seventh paragraph line 1.

109. c A car, a jeep and a snowplough have been mentioned here.

110. c The weather bulletin has been compared to a ritual ceremony. Refer fifth paragraph line 2.

111. b An earthquake had caused the Mississippi to flow northward.

112. b The author says that weather organizes people into a shared moment, hence inspite of being destructive, it can be said to be stimulating.

113. a The use of the language to describe the snow storm reflects the author's fascination with it.

114. b The greatest attractions of weather, for the author, is that it is apolitical.

115. a The author is watching the weather channel, thus he is in his house.

116. b The weather is not manipulable.

117. d 'Undulously' means curved.

118. d All are socialists, though Robespierre has been mentioned as an example of a person who till now was thought to be a typical instance of attributes needed for being a revolutionary socialist, does come up to them.

119. a The second form of socialism involves all the difficulties of the first one and much more.

120. c The difference is in their attitude towards chang

121. c Both have been mentioned as the characteristics of the two persons.

122. c Corruption in high places has not been mentioned in the passage.

123. b The aim of the revolutionary socialism is to substitute the new rule for the old one at one stroke.

124. a 'Avow' means to proclaim.

125. a The author does not symapthize with either of the two sides.

126. c The author has tried to defend philosophy in the passage.

127. c The passage states that philosophy is politely respected but secretly despised.

128. d Philosophy has not been said to be immoral.

129. d Philosophy has not been mentioned as being responsible for making the world a better place to live in.

130. a If philosophy did not exist, masses would not think for themselves, and would thus be easier to manipulate for the politicians.

131. b 'Chairs at the universities' refers to the departments at the universities.

132. b The existence of philosophy is proved by the defence measures it provokes.

133. a *Jaws* has not been mentioned as Spielberg's movie.

134. b The author says that at least the book had a convincing villain.

135. c The passage is obviously talking about a film review.

136. a The book was written by Crichton.

137. c The author praises the film for its technical effects and sophistication at the technological level, but is disappointed with its story line.

138. d The writer says, "one leaves it vaguely disappointed."

139. a He is thankful for such films because they fill the cinemas, and this leads people to continue financing films.

140. d The author finds it neither frightening nor amusing.

141. b 'Muck about with nature' implies 'interfere with nature'.

142. c 'Pundit' in the passage means an expert.

143. c The problem the new cabinet faced was of the foreign exchange market. Refer first line paragraph fourth.

144. a Neil Kinnock has been mentioned as being the leader of the Labour Party. Refer first line paragraph third.

145. b The only way out was to raise the interest rates by at least 2 per cent. Refer fifth paragraph line 6.

146. d We can infer that the Bank of England could exert enormous pressure on the government in its policy formulation.

147. b He wanted to complete his cabinet appointments and to consult his own advisors.

148. a It was not clear if the other countries would follow the lead, hence realignment was not a viable option.

149. c Maastricht has not been mentioned as part of the Labour cabinet.

150. b The wrong policies have not been mentioned as a reason for the defeat of the Conservative Party.

151. d We know, Dividends + Retained earnings = Profit before tax − Tax.

Tax = Profit before tax − (Dividends + Retained earnings).

Figure (in Rs. Lakh)	1991	1992	1993	1994
Profit before Tax	315	170	525	790
Dividends + Retained earnings	170	100	305	510
Tax	145	70	220	280
Tax per rupee of 'Profit before tax'	0.46	0.41	0.42	0.35

Hence, tax per rupee of 'Profit before Tax' was the lowest in 1994.

152. a

Figure (in Rs. Lakh)	1991	1992	1993	1994
Sales	3270	2620	4725	6435
Share Capital	98	98	205	310
Sales per rupee of share capital	33.36	26.73	23.04	20.75

Hence, sales per rupee of share capital was the highest in 1991.

153. d

Figure (in Rs. Lakh)	1991	1992	1993	1994
Profit before Tax	315	170	525	790
Sales	3270	2620	4725	6435
Profit before tax per rupee of sales	0.09	0.06	0.11	0.12

Hence, profit before tax per rupee of sales was the highest in 1994.

154. a

Figure (in Rs. Lakh)	1991	1992	1993	1994
Reserves	80	220	290	535
Retained earnings	140	70	245	400
Percentage addition to reserves	175%	31.81%	84.48%	74.76%

Hence, the highest percentage addition to reserves was in 1991.

155. a From the above table, it is clear that the amount of reserves at the end of 1994 = (535 + 400) = Rs.935 lakh.

156. b It can be seen that the market share of CO in Kolkata has halved in 1994. None of the other products show such a drastic decrease in any city. Hence, percentage decrease in market share = 50%.

157. b Mumbai and Kolkata have two products whose market shares were increased. Chennai has 1 while Delhi has none.

158. d We can see that among the given options, the market share of HD decreased in Mumbai, Kolkata and Delhi. The market share of CO decreased in Kolkata, Delhi and Chennai and the market share of BN decreased in Mumbai.

159. a None of the products had 100% market share.

160. b Only MT doubled its market share in Kolkata in 1993-94.

161. a Percentage increase = $(160 - 130) \dfrac{100}{130} = \dfrac{300}{13}$ = 23%.

162. b Interest in 1990-91 = 30% of 130 = Rs.39 lakh
Interest in 1991-92 = 40% of 160 = Rs.64 lakh
Hence, required difference = (64 − 39) = Rs.25 lakh

163. d Total interest = (30% of 130) + (40% of 160) = (39 + 64) = Rs.103 lakh.
If this total interest is charged on borrowed funds, then (20% of borrowed funds) = 103. Hence, borrowed funds = (5 × 103) = Rs.515 lakh.

164. d Retained profit in 1990-91 = (25% of 130) = Rs.32.5 lakh
Retained profit in 1991-92 = (20% of 160) = Rs.32 lakh
Hence, percentage change in retained profit

= $\dfrac{(32.5 - 32)}{32.5}$ = 1.5% lower.

165. c Total dividend earned by shareholders in 1991-92
= (8% of 160) = Rs.12.8 lakh.

For questions 166 to 170: The graph given in the question can be expressed as a table given below.

Year	Import	Export	Trade Deficit
1987-88	17	11	6
1988-89	19	12	7
1989-90	21	16	5
1990-91	24	18	6
1991-92	20	18	2
1992-93	22	18	4
1993-94	23	21	2
1994-95	27	24	3
	173	138	

166. b Trade deficit = Imports – Exports, was the highest for the year 1988-89, viz. 7 billion dollars.

167. d Trade deficit is less than that in the succeeding year in 1987-88, 1989-90, 1991-92 and 1993-94.

168. c Required percentage = $\dfrac{18}{20} \times 100$ = 90%

169. d In the last three years, Imports = (22 + 23 + 27) = 72 and Exports = (18 + 21 + 24) = 63. Hence, the required

percentage = $\dfrac{63}{72} \times 100$ = 87.5% = 88% (approximately).

170. a The first statement is obviously true as the trade deficit in each year is less than the export earning. The export earning has remained constant for three years between 1990 and 1993. Hence, statement II is not true. Even statement III is not true as the exports in 1994-95 is more than the imports in 1993-94.

For questions 171 to 175: The graph given in the question can be depicted in the following table:

	1989	1990	1991	1992
Journals	46	47	45	44
Magazines	31	39	45	50
Books	73	77	79	79
Total	150	163	169	173

171. c The highest change in the revenue obtained from journals is (47 − 45) = 2 in 1991.

172. a In 1992, percentage of total revenue that came from books = $\frac{79}{173} \times 100 = 45.6\% = 45\%$ (approximately).

173. b In 1990, there was an increase in revenue for all the 3 categories. In 1991, it increased for magazines and books. And in 1992, it increased only for magazines. So the answer is b, viz. 2 years.

174. d Growth rate in 1992 over 1991 = $\frac{(173 - 169)}{169}$ = 2.36%. If this rate remained same in 1993 as well, then the revenue in 1993 would be $173 \times \left(1 + \frac{2.36}{100}\right)$ = Rs. 177 lakh.

175. c Percentage growth in the total revenue from 1989 to 1992 = $\frac{(173 - 150)}{150}$ = 15.33% = 15% (approximately).

176. b Since time taken to manufacture Q by both the machines is the least, we have to manufacture only Q in order to maximize the output for the day. In such a case, total number of units of Q produced by M1 = $\frac{(8 \times 60)}{6}$ = 80 units and that by M2 = $\frac{(8 \times 60)}{6}$ = 80 units. So the maximum number of units that can be produced in one day = (80 + 80) = 160 units.

177. d If M1 works at half of its normal efficiency, time taken by M1 to manufacture 1 unit of P = 20 min and Q = 12 min. For producing maximum number of units, we have to produce Q on M2 first as it takes only 6 min per piece. Also since at least one unit of P has to be manufactured and it is more efficient to do so on M2, we would do that. So time taken to manufacture 1 unit of P on M2 = 8 min. Hence, time remaining on M2 = (480 – 8) = 472. In this remaining time number of units of Q that can be manufactured on M2 = $\frac{472}{6}$ = 78 (only completed units taken). Now since it takes less time to manufacture Q on M1 as well, we will maximize Q on M1. Since 1 unit of number of units that can be produced = $\frac{(8 \times 60)}{12}$ = 40. Hence, the total number of units manufactured = (1 + 78 + 40) = 119 units.

178. a In order to minimize time required, we will manufacture P on M2 and Q on M1. Number of machine hours required to manufacture 30 units of P on M2 = (30 × 8) = 240 min = 4 hr. Number of machine hours required to manufacture 25 units of Q on M1 = (25 × 6) = 150 min = 2.5 hr. So total time taken = (4 + 2.5) = 6.5 hr or 6 hr 30 min.

179. a Since P has to be produced in more number than Q and since time taken to produce P is least on M2, to maximize the output utilize the entire time available on M2 for producing P. Number of units of P produced in this time = $\frac{(8 \times 60)}{8}$ = 60 units. Now since the number of units of

Q should be one-third that of P, we should manufacture 20 units of Q. To manufacture this on M1, it would take (20 × 6) = 120 min. So there are still (480 – 120) = 360 min of M1 to be utilized. Now for every 3 units of P that is manufactured, we have to manufacture 1 unit of Q. To run one such cycle on M1, it would take (3 × 10 + 1 × 6) = 36 min. Hence in 360 min, we have 10 such cycles and utilize all the idle time of M1. Hence, to maximize the output under the given condition it is possible to have no idle time on any of the machines.

180. c The least efficient way is the option that gives least production with highest idle time. So we can compare the options in the following two ways. Assume that production is constant (viz. LCM of 48, 64, 53 and 71) in all 4 options and compare the corresponding idle time. Or we can assume the idle time to be constant (viz. LCM of 3, 12, 10 and 9) in all 4 options and compare the corresponding production. The latter method is more preferable as finding LCM of idle time is easier. So LCM of 3, 12, 10, 9 = 180. If we assume that the idle time has to be 180 min, then as per option (a) we would get production = $\left(\frac{180}{3} \times 48\right)$ = 2,880 units, as per option (b), we would get production = $\left(\frac{180}{12} \times 64\right)$ = 960 units, as per option (c), production = $\left(\frac{180}{10} \times 53\right)$ = 954 units and as per option (d), production = $\left(\frac{180}{9} \times 71\right)$ = 1,420 units. Since option (c) gives the least production, it is the least efficient way.

181. a Total requirement of cloth = Total number of shirts × Cloth required per shirt = (20 + 30 + 30 + 10 + 10) × 1000 × 1.5 = 1,50,000 m.

182. b Total low quality cloth consumed = 1.5 (30% of 30000 + 30% of 30000 + 40% of 10000 + 90% of 10000) = 46,500 m.

183. c Total quantity of high quality cloth consumed by A-type shirts = (80% of 20000) × 1.5 = 24,000 m.

184. d We only know the relationship between the type of shirt and cloth used and type of shirt and dye used. We cannot find any relationship between type of cloth and dye used.

185. b Amount of low quality die used for C-type shirts = (40% of 30000) = 12,000 units. Amount of low quality die used for D-type shirts = (60% of 10000) = 6,000 units. Hence, required ratio = $\left(\frac{12000}{6000}\right)$ = 2 : 1.