

SAMPLE PAPER (SNAP)

ANSWER KEY

1. (2)	2. (1)	3. (3)	4. (2)	5. (3)	6. (2)	7. (4)	8. (2)	9. (2)	10. (3)
11. (1)	12. (2)	13. (4)	14. (3)	15. (2)	16. (1)	17. (1)	18. (2)	19. (2)	20. (4)
21. (3)	22. (3)	23. (2)	24. (4)	25. (4)	26. (3)	27. (2)	28. (3)	29. (1)	30. (4)
31. (2)	32. (4)	33. (3)	34. (3)	35. (3)	36. (1)	37. (4)	38. (4)	39. (2)	40. (2)
41. (1)	42. (4)	43. (2)	44. (1)	45. (1)	46. (1)	47. (2)	48. (1)	49. (4)	50. (1)
51. (1)	52. (3)	53. (3)	54. (1)	55. (1)	56. (1)	57. (1)	58. (2)	59. (2)	60. (1)
61. (1)	62. (1)	63. (3)	64. (2)	65. (4)	66. (1)	67. (3)	68. (4)	69. (3)	70. (4)
71. (3)	72. (4)	73. (2)	74. (3)	75. (2)	76. (1)	77. (2)	78. (3)	79. (4)	80. (3)
81. (3)	82. (4)	83. (3)	84. (4)	85. (2)	86. (1)	87. (4)	88. (1)	89. (4)	90. (1)
91. (4)	92. (2)	93. (4)	94. (1)	95. (2)	96. (1)	97. (4)	98. (2)	99. (3)	100. (4)
101. (2)	102. (1)	103. (4)	104. (3)	105. (2)	106. (4)	107. (3)	108. (2)	109. (1)	110. (1)
111. (4)	112. (1)	113. (1)	114. (4)	115. (2)	116. (2)	117. (2)	118. (4)	119. (4)	120. (3)
121. (3)	122. (1)	123. (4)	124. (2)	125. (1)	126. (1)	127. (4)	128. (4)	129. (3)	130. (3)
131. (2)	132. (4)	133. (2)	134. (3)	135. (4)	136. (3)	137. (2)	138. (4)	139. (1)	140. (1)
141. (1)	142. (2)	143. (3)	144. (3)	145. (4)	146. (1)	147. (1)	148. (3)	149. (1)	150. (3)
151. (3)	152. (2)	153. (1)	154. (3)	155. (2)	156. (3)	157. (2)	158. (3)	159. (4)	160. (3)
161. (3)	162. (1)	163. (2)	164. (1)	165. (4)	166. (1)	167. (3)	168. (1)	169. (2)	170. (4)
171. (4)	172. (2)	173. (1)	174. (3)	175. (4)	176. (1)	177. (1)	178. (1)	179. (3)	180. (3)
181. (1)	182. (3)	183. (3)	184. (4)	185. (2)	186. (2)	187. (2)	188. (3)	189. (4)	190. (1)
191. (1)	192. (1)	193. (4)	194. (3)	195. (4)	196. (2)	197. (3)	198. (4)	199. (3)	200. (3)
201. (3)	202. (1)	203. (2)	204. (3)	205. (4)	206. (2)	207. (2)			

Explanation

1 to 2:

Let the number of pieces sold be n and the price of each piece be p . Then total sales value, v , is given by pn ,

$\therefore 1148 = pn$. From the choices given in this question, rule out 56. Because 56 when reversed gives 65, which cannot be a factor of 1148. Try dividing 1148 by the first option, i.e. 82. The quotient is 14. Check that both, 82 and 14, when reversed give 28 and 41, whose product is 1148. Now we have identified the four numbers.

We can now make use of the data that the inventory reduced by 54. Inventory is the quantity available in store. i.e. the remainder after having sold a certain number of pieces. If the inventory reduces by 54, it means that if actually x pieces are sold, then ON RECORD, $(x + 54)$ pieces are sold. Observe that 82 and 28 differ by 54. So, if 28 is the actual number of pieces sold, then 82 is the value entered. It follows that if 51 was the actual price per piece, then it was entered as 14.

1. (2)

2. (1)

3. (3)

As X started chasing the thief after 15 minutes, the thief had gained $(15/60)60 = 15$ km over X. the relative speed between the thief and X is $65 - 60 = 5$ kmph. So, the time taken by X to catch the thief is $15/5 = 3$ hours. As X had started the chase at 12.15 p.m. he caught the thief at 3.15 p.m.

4. (2)

The relative speed between the second policeman and X is $65 - 60 = 5$ kmph. After 3 hours, the relative distance between them would be 15 km.

5. (3)

Let the original cost of the diamond be Rs. X , and let the weight of the diamond be $(1 + 2 + 3 + 4) = 10$ units. So its original cost varies as 10^2 , i.e. cost = $100x$, say. After the diamond has broken, its cost becomes $(1^2 + 2^2 + 3^2 + 4^2)x$, i.e. $30x$. Thus the loss in cost is $70x$. If $70x$ corresponds to Rs. 70,000, then the original cost $100x$ is Rs. 1,00,000.

6. (2)

The smaller cubes have a side $1/4^{\text{th}}$ the length of the original side. Thus there are 64 small cubes, with 4 cubes along one side of the original cube. The cubes which do not have even a single side painted are the ones not exposed to the exterior at all. There are 8 such cubes in the centre.

7. (4)

Verifying option (1) is very cumbersome. Options (2) and (3) can be verified by expressing the lines in the form $(y = mx + c)$ and finding their slopes. The values of slopes clearly show that the lines are neither parallel nor perpendicular to each other. For option (4), solve any two equations and find the value of x and y . if these values of x and

y satisfy the third equation also, then the lines intersect in a single point. ($x = 1, y = 1$)

8. (2)

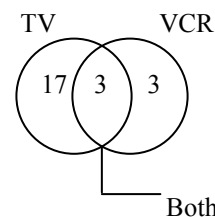
$n(n^2 - 1) = n(n - 1)(n + 1)$. If n is an odd number and $n > 1$, then either of $(n + 1)$ and $(n - 1)$ is a multiple of 4 and the other is a multiple of 2. Also, since $(n - 1)$, n , $(n + 1)$ are three consecutive numbers, one of them must be a multiple of three. thus the product has to be a multiple of $(4 \times 3 \times 2) = 24$.

9. (2)

The radius of the circle is 6.5, \therefore its diameter is 13 cm. The diameter always subtends a right angle at a point on the circumference. In the given problem one side is 5 cm (chord CA) and the hypotenuse is 13 cm (diameter AB). The third side is thus 12 cm, and the area of the Δ is $(1/2)(5)(12) = 30 \text{ cm}^2$.

10. (3)

Assume a suitable number of people for the locality by finding out the LCM of the denominators of the fractions involved. In this case it is the LCM 3, 5 and 10, which is 30. The fractions can now be expressed as simple numbers as shown in the Venn diagram.



Reqd. fraction = $(17 + 3 - 3)/30 = 17/30$

11. (1)

Since BCE is an equilateral Δ on one side of the square, each side of ΔBCE will be equal to the side of the square. Thus, $DC = EC$, i.e. ΔDEC is an isosceles Δ in which, $\angle CDE = \angle CED$. But $m\angle DCE = m\angle DCB + m\angle BCE = 90 + 60 = 150^\circ$. $\therefore m\angle DEC = m\angle CDE = (30/2) = 15^\circ$.

12. (2)

Let one pen, one pencil and one eraser cost n , p and r units respectively. Let the amount paid by me be A units.

\therefore I pay $(5n + 7p + 4r) = A$ Eqn. (1)

& Rajan pays $(6n + 14p + 8r) = 1.5 A$... Eqn. (2).

Multiply equation (1) by 2.

we Get $(10n + 14p + 8r) = 2A$ Eqn.(3).

Comparing equations (2) and (3), we see that while Rajan gets 4 pens less, he pays $0.5A$ units less. Thus, A = the price of 8 pens. \therefore the % of the total price paid by me initially, which was used for pens is $(5/8)(100) = 62.5\%$.

13. (4)

Let X and Y be the persons who started from A and B respectively.

Midway between A and B means 36 km. From A , X will take 9 hours to reach the midpoint. In 9 hours Y will also cover $2 + 2.5 + 3 + 3.5 + 4 + 4.5 + 5 + 5.5 + 6 = 36$ km. Thus Y will also reach the midpoint at the same time.

14. (3) On each of the 1200 watches that he sells in the season, he makes a profit of Rs. 100 (i.e. Rs. 250 - Rs. 150). On each of the 300 (i.e. 1500 - 1200) watches that are not sold, he incurs a loss of Rs. 150, which is the manufacturing cost. His additional expense is Rs. 30,000 (given). Thus his net profit in the season is Rs. (1,20,000 - 45,000 - 30,000) = Rs. 45,000.
15. (2) Let the number of watches required to be sold in the season be x . \therefore he sells $(1500 - x)$ watches out of season. The expenditure for manufacturing 1500 watches is $(1500 \times 150) = 225,000$. Add to this the fixed expenditure of Rs. 30,000. His total income is from x watches sold at 250 and $(1500 - x)$ watches sold at 100. $\therefore 2,55,000 = (250)(x) + (100)(1500 - x)$. Solving, we get $x = 700$.
16. (1) We are given that $AB = BC = CD = 12$ km. \therefore time taken to travel AB at a speed of x kmph is $(12/x)$ hours. This is followed by a break of x hours. His speed from C to D is $2(2x) = 4x$ kmph. Continuing on these lines, we get, $[(12/x) + x + (12/2x) + 2x + (12/4x)] = 16$ hours. Solving we get $x = 3$.
17. (1) The shopkeeper uses a 120 cm scale instead of a 100 cm scale. Thus, while buying 100 cm of cloth, he pays just $(100/120)$, i.e. $(5/6)$ times the actual worth of the goods. If he has 100 cm of material, then while selling, he charges the customer for $(100/80)$, i.e. $(5/4)$ times the actual worth of goods sold. On this SP, he gives a discount of 20%, thus making the actual SP as $(0.8)(5/4) = 1$. Thus for 100 cm of cloth, his CP is $(5/6)$ while the SP is 1. This gives a profit of 20% on the CP.
18. (2) Out of the five girls, he has to invite exactly three. this can be done in 5C_3 ways. Out of the four boys, he may invite either one or two or three or four or even none of them. According to the standard formula, this may be done in $(2)^4$ ways. Thus the total number of ways is ${}^5C_3 \times (2)^4 = 10 \times 16 = 160$.
19. (2) In a correctly running watch, the crossing of hands should take place exactly after every $(720/11) = 65 \frac{5}{11}$ minutes. In this watch, it takes place after $[(3 \text{ hours}, 18 \text{ minutes}, 15 \text{ seconds})/3] = (1 \text{ hour}, 6 \text{ minutes}, 5 \text{ second})$, i.e. $66 \frac{5}{60}$ minutes of watch time. Thus the watch takes longer time to accomplish the task as compared to a correctly running watch. So this watch loses time = $[(66 \frac{5}{60}) - (65 \frac{5}{11})] = (83/132)$ minutes in $65 \frac{5}{11}$ minutes of correct time. So in 1 day, i.e. (24×60) minutes of correct time, it will lose $(83/6)$ minutes, i.e. 13 minutes 50 seconds.
20. (4) When Bhairav (B) covers 1600 m, Akshay (A) covers $(1600 - 128)$ m. So, when B covers $(1600/16) = 100$ m, A covers $(128/16) = 8$ m

less. When B covers 100 m, C covers $(100 - 4) = 96$ m. Thus the ratio in which A and C cover distances is $92 : 96$. In 96 m, C gains $(96 - 92) = 4$ m over A. So in 1.5 miles (i.e. 2400 m), C gains $100 \text{ m} = (1/16)$ miles over A.

21. (3) Let the number of correct answers be 'x', number of wrong answers be 'y' and number of questions not attempted be 'z'.

$$\text{Thus, } x + y + z = 50 \quad \dots (1)$$

$$\text{And } x - \frac{y}{3} - \frac{z}{6} = 32$$

The second equation can be written as,

$$6x - 2y - z = 192 \quad \dots (2)$$

Adding the two equations we get,

$$7x - y = 242 \text{ or } x = \frac{242}{7} + y/7$$

Since, x and y are both integers, y cannot be 1 or 2. The minimum value that y can have is 3.

22. (3) If we consider the third term to be 'x'

The 15th term will be $(x + 12d)$

6th term will be $(x + 3d)$

11th term will be $(x + 8d)$ and 13th term will be $(x + 10d)$

Thus, as per the given condition, $2x + 12d = 3x + 21d$.

$$\text{Or } x + 9d = 0$$

$x + 9d$ will be the 12th term.

23. (2) For the curves to intersect, $\log_{10}x = x^{-1}$

$$\text{Thus, } \log_{10}x = \frac{1}{x} \text{ or } x^x = 10$$

This is possible for only one value of x ($2 < x < 3$).

24. (4) $p + q = \alpha - 2$ and $pq = -\alpha - 1$

$$(p + q)^2 = p^2 + q^2 + 2pq,$$

$$\text{Thus } (\alpha - 2)^2 = p^2 + q^2 + 2(-\alpha - 1)$$

$$p^2 + q^2 = \alpha^2 - 4\alpha + 4 + 2\alpha + 2$$

$$p^2 + q^2 = \alpha^2 - 2\alpha + 6$$

$$p^2 + q^2 = \alpha^2 - 2\alpha + 1 + 5$$

$$p^2 + q^2 = (\alpha - 1)^2 + 5$$

Thus, minimum value of $p^2 + q^2$ is 5.

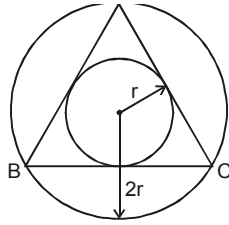
25. (4) The number of terms of the series forms the sum of first n natural numbers i.e.

$$n(n + 1)/2.$$

Thus the first 23 letters will account for the first $(23 \times 24)/2 = 276$ terms of the series.

The 288th term will be the 24th letter viz. x.

26. (3)



Since the area of the outer circle is 4 times the area of the inner circle, the radius of the outer circle should be 2 times that of the inner circle. Since AB and AC are the tangents to the inner circle, they should be equal. Also, BC should be a tangent to inner circle. In other words, triangle ABC should be equilateral.

The area of the outer circle is 12π . Hence the area of inner circle is 3π or the radius is $\sqrt{\frac{3}{\pi}}$. The area

of equilateral triangle = $3\sqrt{3} r^2$, where r is the In- radius.

Hence the answer is $9\sqrt{3}/\pi$

27. (2)

$$(a + b + c + d)^2 = (4m + 1)^2$$

$$\text{Thus, } a^2 + b^2 + c^2 + d^2 + 2(ab + ac + ad + bc + bd + cd) = 16m^2 + 8m + 1$$

$a^2 + b^2 + c^2 + d^2$ will have the minimum value if $(ab + ac + ad + bc + bd + cd)$ is the maximum.

This is possible if $a = b = c = d = (m + 0.25)$ since $a + b + c + d = 4m + 1$

$$\text{In that case } 2(ab + ac + ad + bc + bd + cd) = 12(m + 0.25)^2 = 12m^2 + 6m + 0.75 \quad \text{Thus, the}$$

$$\text{minimum value of } a^2 + b^2 + c^2 + d^2 = (16m^2 + 8m + 1) - 2(ab + ac + ad + bc + bd + cd)$$

$$= (16m^2 + 8m + 1) - (12m^2 + 6m + 0.75) = 4m^2 + 2m + 0.25$$

Since it is an integer, the actual minimum value = $4m^2 + 2m + 1$

28. (3)

If $y = 2$ (it cannot be 0 or 1), then x can take 1 value and z can take 2 values.

Thus with $y = 2$, a total of $1 \times 2 = 2$ numbers can be formed. With $y = 3$, $2 \times 3 = 6$ numbers can be formed. Similarly checking for all values of y from 2 to 9 and adding up we get the answer as 240.

29. (1)

If $y = 10^\circ$,

$\angle BOC = 10^\circ$ (opposite equal sides)

$\angle OBA = 20^\circ$ (external angle of $\triangle BOC$)

$\angle OAB = 20^\circ$ (opposite equal sides)

$\angle AOD = 30^\circ$ (external angle of $\triangle AOC$)

Thus $k = 3$

30. (4)

Using $\log a - \log b = \log a/b$,

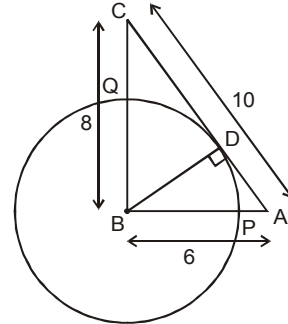
$$2 / (y - 5) = (y - 5) / (y - 3.5) \text{ where } y = 2^x$$

Solving we get $y = 4$ or 8 i.e. $x = 2$ or 3 . It cannot be 2 as log of negative number is not defined (see the second expression).

31. (2) Using the Basic Proportionality Theorem, $AB/PQ = BD/QD$ and $PQ/CD = BQ/BD$. Multiplying the two we get, $AB/CD = BQ/QD = 3 : 1$.

Thus $CD : PQ = BD : BQ = 4 : 3 = 1 : 0.75$

32. (4)



Triangle ABC is a right angled triangle.

$$\text{Thus } 1/2 \times BC \times AB = 1/2 \times BD \times AC$$

Or, $6 \times 8 = BD \times 10$. Thus $BD = 4.8$. Therefore, $BP = BQ = 4.8$.

So, $AP = AB - BP = 6 - 4.8 = 1.2$ and $CQ = BC - BQ = 8 - 4.8 = 3.2$.

Thus, $AP : CQ = 1.2 : 3.2 = 3 : 8$

33. (3)

In this kind of polygon, the number of convex angles will always be exactly 4 more than the number of concave angles.

Also, the number of vertices should be even. Hence the number of concave and convex corners should add up to an even number. This is true only for the answer choice 3.

34. (3)

The values of A and B at each step are as shown.

Step No.	A	B
Beginning	1	1
1	2	2
2	6	3
3	24	4
4	120	5
5	720	6

35. (3)

Let the squares at the four corners that are removed have a side x. So the volume of the box so formed would be $x(10 - 2x)^2$. For $x = 0$, the volume is 0. As x increases, the volume increases and reaches a maximum for $x = 5/3$. After that the effect of the factor $10 - 2x$ predominates and the volume decreases. This can be seen by taking trial values for x, or by finding the maximum using differentiation \therefore Maximum volume = $(5/3)(10 - 2 \times 5/3)^2 = 2000 / 27$.

36. (1)

If the three odd numbers are $a - 2$, a and $a + 2$, then $3(a - 2) = 3 + 2(a + 2) \therefore a + 2 = 15$.

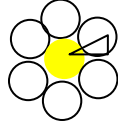
37. (4)

We can see from the data, that the man walks in all 3 km to the East and 4 km to the North, thus

forming a right angled triangle of sides 3 and 4. So the shortest distance is 5 km.

38. (4) If the side of the square is s , the radius of the incircle is $s/2$ and that of the circumcircle is $s/\sqrt{2}$ (i.e. half the diagonal). So ratio of areas = 1: 2.

39. (2)



The questions can be solved by common sense. Mathematically, considering the tangent to the outer coin from the centre of the inner coin, a 30-60-90 triangle is formed. So each coin subtends a total angle of 60° at the centre of the inner coin. Hence $360/60 = 6$ coins can be placed.

40. (2) $625 = P(1 + r/100)^2$ and $675 = P(1 + r/100)^3$. Dividing one by the other, $1 + r/100 = 675/625$, or $r = 8\%$

Q. 41 to 50:

Students may please note that Data sufficiency questions require that one arrives at a unique answer, and that too, not in terms of any variable, but in numerical terms only. Only if such an answer can be obtained can one say that the question can be fully answered. Also, students are cautioned to be careful about the type of inference associated with answers 1, 2, 3 and 4. The order of these inferences differs from paper to paper.

41. (1) We are required to find out the exact cost price. Both the statements give the same information, i.e. the SP is 0.75 times the CP. So the answer is (1)
42. (4) Cancel out the integer “a” on both the sides of the inequality. Arrange “b” on one side of the inequality and “c” on the other. We have to now determine the relation between (- 2b) and (- 2c). If “b” is - ve, then (- 2b) is + ve. If “c” is + ve, then (- 2c) is - ve. So $(- 2b) > (- 2c)$. Since both the statements are required to determine the outcome, we get (4) as the answer.
43. (2) By default, the profit is always mentioned as a % of the CP. From statement (II), we see that the profit on the article is 25% of Rs. 250, which is Rs. 62.50. So the SP can be determined with the help of statement (II) alone, and the answer is (2).
44. (1) To find the radius of the rear wheel, we need to know the numerical value of its circumference. From statement (I), we get a relation between the circumferences of the two wheels in terms of “N”. From statement (II), we get similar information in terms of “t”. Thus, the radius cannot be determined from the given data and the answer is (1).
45. (1) There is a catch in the problem. Although the containers are of equal volume, it is not known to what extent these containers are filled by the

liquids A and B. (i.e. the first container might be half full, while the second might be two-thirds full). Until such details are known, the final ratio of liquids A and B cannot be found out. Thus, the answer is (1).

46. (1) The two statements give the standard result which hold good for any quadratic equation of the given form. $(\alpha^2 + \beta^2)$ can be obtained as $[(\alpha + \beta)^2 - 2\alpha\beta]$. From the given statements one can get an answer only in terms of a and b. So the answer is (1).
47. (2) If the number of type - 1 widgets produced is A and that of type - 2 widgets is B, then we get the basic equation $[A + B = 20,000]$ from the data in the question. From statement (I), we get $[1.1 A + 1.06 B = 20,000]$. This is enough to give us the value of B. Similarly from statement (2), we get $A = 2B$. This is enough to give us the value of B.
48. (1) Anil’s age was a prime number in 1996 and 1998. So Anil’s age in these two years can be a pair of such numbers which are prime, and differ by 2. We have many such pairs - (3,5), (5, 7), (11, 13)..... And it is not possible to arrive at a unique answer. So the answer is (1).
49. (4) Let Lakhiram’s assets be worth Rs. X. In the case of compound interest, the period of reckoning or calculation of CI is very important. This information is given in statement (II). The annual CI rate is 10%, so the rate for 4 months is $(4/12) 10 = (10/3)\%$. So the total CI after one year, in terms of X, may be written as: $CI = X[(1 + ((10/3)/100)]^3$, because in a year, there are 3 terms of 4 months. This interest is followed by a tax of 4% paid by him which ultimately fetches Lakhiram Rs. 1500. This data helps us to find the value of X, so the answer is (4).
50. (1) Although it is known that none of the lines are parallel to each other, there might be the case wherein all the lines have exactly one point of intersection, or eight lines with one point and the other eight with another point of intersection. Unless something about the relative arrangement of these lines is known, one cannot arrive at a definite answer. So the answer is (1).
51. (1) The author says that we should coolly assess the science of global warming. This implies that scientific evidence may not link the weather disturbances in different parts of the world, so that they could be happening due to unrelated causes.
52. (3) Directly stated in the second paragraph
53. (2) There is a difference in the approaches of the Americans and the European nations, as mentioned in the passage.
54. (1) Can be inferred from this line, “ They know there is no chance that America will meet its target

through cuts in domestic emissions. That is why they see sinks and trading as saviors...”

55. (1) A rigid deal would impose heavy costs, hence nations would look for ways not to adhere to the deal.
56. (1) The author argues for a flexible deal as opposed to a rigid one.
57. (1) Second paragraph. The author cites the Dasha Avatar as the evidence of his belief.
58. (2) Second last paragraph - the author cites Hanuman as the missing link.
59. (2) Last paragraph - “This theory has been put forth by biologists who say that...”
60. (1) Vedic history is replete with fascinating tales where Vishnu battles the forces of evil - directly stated in the passage.
61. (1) Last line of the passage.
62. (1) Third paragraph: France's national invention...
63. (3) An analogy is drawn with the Trojan horse
64. (2) “Hollywood now gets roughly half its revenues from overseas, up from just 30% in 1980.” This implies that revenues increased by $(50-30)/30$, i.e., two-thirds.
65. (4) The author does not dispute that Hollywood is a powerful force, but it does dispute the second and third points by giving evidence against them.
66. (1) They eschew fine-grained cultural observation for generic subjects that anybody can identify with, regardless of national origins. There is nothing particularly American about boats crashing into icebergs or asteroids that threaten to obliterate human life.
67. (3) Directly stated that television stations can get cheap and reliable content from America.
68. (4) This theme runs throughout the passage.
69. (3) The answer to this has to be inferred. The underlying theme is that American films work well not because they are American but because they appeal to all tastes. Nor are they dominant in popular local tastes. Thus it would be a waste of time to shut them out.
70. (4) This is the reason that they take talent from all over the world.
71. (3) Do this by elimination. The article is not by France alone; it is not about Culture Wars; nor is it about Cultural Protection.
72. (4) The last few lines answers this question.
73. (2) Evident from the quote itself.
74. (3) Beginning of the last paragraph
75. (2) The article talks about bone technology and what is being done in the field
76. (1) Second paragraph directly states this.
77. (2) First paragraph: free from the unsteady influences...
78. (3) Heretic: unconventional

79. (4) All the other choices are stated in the second paragraph.
80. (3) The author says that orthodox economists have been forced to “fight back”.
81. (3) Second paragraph.
82. (4) Both Mills and Fisher are mentioned in the passage.
83. (3) Magical thinking is attributing to one's own actions something that had nothing to do with them.
84. (4) All the choices would make Dr Spock's head spin.
85. (2) Explained in the last paragraph.
86. (1) Irrationality has been discussed in the passage in the context of economic decision making.
87. (4) The title of the passage should match the content of the passage.
88. (1) Directly implied in the phrase.
89. (4) Argot – jargon.
90. (1) Third paragraph, first line.

91-95:

Note down the corresponding values of Profit, Revenue & Expenditure on the bar graph itself, keeping in mind, Profit = Revenue - Expenditure. The values read from the graph should satisfy this condition for each year. Here corresponding values are given in the form of a table to make the solution easier to understand:

YEAR	1989	1990	1991	1992	1993	1994	1995
Profit	20	25	30	40	50	60	72
Reven.	122	130	145	170	185	200	222
Expend	102	105	115	130	135	140	150

91. (4) Percentage Increase = $\frac{[\text{Final value} - \text{Initial value}]}{100/\text{Initial value}}$. Using this formula & conversion of fractions into percentage, calculate the percentage increase for the various years. Maximum percentage increase is for the year 1992 = $(40 - 30)/30 = 1/3 = 33.33\%$.
92. (2) Average Revenue = $(\text{Total Revenue})/(\text{Number of years})$
 $= (122 + 130 + 145 + 170 + 185 + 200 + 222)/7$
 $= 1174/7$
 $= 167.7 = 168(\text{approx.})$
93. (4) From the table, it can be seen that growth in expenditure as compared to the previous year was maximum in 1992.
94. (1) Total Revenue = 1174
 Total Expenditure = $700 + (2 + 5 + 15 + 30 + 35 + 40 + 50) = 887$
 $\%$ formed by the revenue = $887/1174 \sim 900/1200 = \frac{3}{4} = 75\%$
 [Actual values will give 75.55% & again (1) will be the correct answer but you can save time using approximations]

95. (2) % profit in 95 = $(72 - 60) / 60 = 1/5 = 20\%$
As per the given condition % profit in 96 = 20%
Then total profit will be $(6 \times 72) / 5 \sim 86$ lakhs.

96-100:

96. (1) For Lipton production = 1.64 ('000 tonnes)
Capacity Utilisation = 64.8% ~ 65%
 $65\% = 13/20$, so maximum production capacity =
 $(20 \times 1.64) / 13 = 32.8 / 13 \sim 2.53$ ('000 tonnes)
97. (4) Data insufficient, because different varieties of coffee of the same brand may have different prices. We can not assume that there will be only one variety of coffee of each brand.
98. (2) Total Sales Value (incl. Others) = 132.8 (Rs. Cr.)
Sales value (BB + Nestle + Lipton + MAX) =
 $[31.15 + 26.75 + 15.25 + 17.45]$
= 90.60 (Rs. Cr.)
Total sales value of others = $132.8 - 90.60 = 42.2$ (Rs. Cr.)
Others / Total = $42.2 / 132.8 \sim 1/3$ (approx.)
% share of others = 33.33% (approx.)
Hence, the closest option will be the correct answer i.e. 32%.
99. (3) Total prod capacity = $[100 \times \text{Total prod. ('000 tonnes)}] / (\% \text{ Capacity utilisation})$
= $(100 \times 11.63) / 61.3$
= 1160/50 (approx.)
= 19.3 ('000 tonnes)
Here we are taking approximate value of the denominator to be less than the actual value
Hence, the closest option will be the correct answer i.e. 18,900.
100. (4) Unutilised capacity of a company is given by.
 $(100 - \% \text{ capacity utilisation}) (\text{Production in '000 tonnes}) / (\% \text{ capacity utilisation})$
Substituting the corresponding values from the table, we get that maximum unutilised cap. is for MAC i.e. $(100 - 59.35) \times (1.54) / 59.35 \sim 1.05$ ('000 tonnes)

101-105:

101. (2) As per the plan, number of men working in 5th month was 4 & these 4 men were supposed to do coding. Cost per man-month for coding = Rs. 10000.
Total cost in 5th month = $4 \times 10000 = \text{Rs. } 40,000$
Number of people actually working in 5th month is 5 & these 5 men are doing the design part of the project. Cost per man-month for design = Rs. 20,000.
Total cost in 5th month = $5 \times 20,000 = \text{Rs. } 1,00,000$
% change = $(100000 - 40000) / 40000 = 150\%$.

102. (1) total man-months required for coding = $(4 + 5 + 5) = 14$
Cost per man-month coding = Rs. 10,000
Total cost incurred in new coding stage = $14 \times 10,000 = \text{Rs. } 1,40,000$
103. (4) Total cost in a stage = (Num. Of man months)(Cost per man month in that stage)
Total cost in specification = $(2 + 3) 40,000 = \text{Rs. } 2,00,000$.
Total cost in design = $(4 + 3 + 5) 20000 = \text{Rs. } 2,40,000$.
Total cost in coding = Rs. 1,40,000
Total cost in testing = $(4 + 1) 1500 = \text{Rs. } 75000$
Hence the correct answer is (4)..
104. (3) Average cost/man month = (Total cost in that period) / (No. of man months taken). Average cost per man month will be minimum for 11-15 month i.e. $(90000/9) = \text{Rs. } 10,000$.
105. (2) In two cases, cost will be different in 5th, 6th & 8th month. Cost will be Rs. 60,000 more in the 5th month, Rs. 20,000 less in the 6th month & Rs. 20,000 more in the 8th month. So net difference will be Rs. 60,000.

106-110:

106. (4) Total investment in 1995 = $(2923 + 7081.6) = 10,000$ crores
Total investment in 96 = $(3489 + 8352) \sim 11,840$
Percentage increase = $(11,840 - 10000) / 10000 = 18.4 = 18$ (approx.)
107. (3) Total investment in Chittor district = $(2923.1 + 3489.5) \sim 6400$ (approx.)
Total investment in Khammam district = $(7081.6 + 8352.0) \sim 15400$ (approx.)
Required Ratio = $77/32 = 2.4$ (approx.)
108. (2) Total investment in Electricity & Thermal Energy in 1995 = $(81.2 + 632.4 + 2065.8 + 1232.7)$
= $(800 + 650 + 2100 + 1200) = 4750$ (approx.)
Percentage = $(4750) / (10000) = 47.5$ (approx.)
109. (1) Again use approximate values & degree of approximation allowed will depend on the difference in the various options.
Electricity = $(23 - 20) / 20 = 15\%$
Chemical = $22/74 = 28\%$
Solar = $4/12 = 30\%$
Nuclear = $5/16 = 31\%$
110. (1) % increase from 95 to 96 = % increase from 96 to 97
 $(8352.0 - 7081.6) / 7081.6 = (x - 8352.0) / 8350$
Using approximation, $1270/7080 = \frac{(x - 8350)}{8350}$
 $x = 9850$.

111 - 115:

This caselet is very easy & most of the questions can be answered just by careful observation without doing actual calculations.

111. (4) In May number of employees suddenly increases but the profit is increasing at much slower rate so profit per employee must be highest either in Jan. or in March & comparing the values for the graph, March is the correct answer.
112. (1) Profit = {Sales - Cost}, the difference between the line graph for sales & line graph for cost is maximum in September & so September is the correct ans.
113. (1) Comparing the value for sales in various months as per the conditions, maximum difference is between January & March and base value is minimum for January, so % increase will be maximum in March.
114. (4) Increase in cost is maximum for May i.e. $34 - 30 = 4$ on the line graph.
115. (2) Num. of persons employed = Num. of employee in Nov. - Num. of employee in Jan = $15,800 - 10,800 = 5000$ (approx).
Closest ans. is 5100.

116-120:

116. (2) Num of such students = $(36 - 12)\%$ of 800 + $(48 - 17)\%$ of 730 + $(43 - 23)\%$ of 1100
= 24% of 800 + 31% of 730 + 20% of 1100
= $192 + 226 + 220$
= 638 (approx.)
Closest option is 650
117. (2) In 1994 total money earned by finance students = 23% of $110 \times (7550 \times 12)$
Similarly total money earned by s/w students = 21% of $110 \times (7050 \times 12)$
Difference = $1320 (23 \times 755 - 21 \times 705) = 33.8$ lakhs (approx.)
118. (4) % increase in average salary of finance = $(9810 - 5450) / 5450 \times 100$
= $8700 / 5450$
80% (approx.)
119. (4) Can not be determined as average monthly salary of students in 'Others' category is not given.
120. (3) % Increase in initial sal. in s/w = $(8640 - 5290) / 5290 \times 100$
= $(3350 \times 100) / 5290$
~ 63.3%
Annual increase = $63.3 / 4 = 15.8$ (approx.)
Closest option is 16.3%
121. (3) Incase of Products, percentage of spam emails is increasing but at decreasing rate, from Sep 2002 to Dec

2002 products increased more than 100% and in Mar 2003 about 45% and in Jun 2003 10%

122. (1) Was larger as in Dec 2002 it is a higher percentage of a higher base compared to June 2003.
123. (4) Cannot be determined as in Sept 2002 it is a lower percentage than March 2003, however the base in Sept 2003 is higher than that in March 2002. Thus we cannot say anything.
124. (2) It is evident from graph Seeta's growth rate decreased from third month as this is the first time the slope has decreased.
125. (1) Geeta grew at fastest rate in first two months (the slope of the line in this period is steepest for Geeta).
126. (1) Geeta grew lowest in third month (during this period, the slope was least for Geeta).
127. (4) Seeta increased 7cm on 50 and shyam 7cm on 53cm, Hence Shyam grew least.
128. (4) $\frac{9}{30} \times 100 = 30\%$
129. (3) $\frac{23}{30} \times 100 = 76.67\%$
130. (3) $\frac{4}{30} \times 100 = 13.33\%$
131. (2) AVOCADO paint is mixture of ORANGE and PINK in equal quantities.
If ORANGE is made using RED and YELLOW, then the cost of ORANGE would be $(20+25)/2 = 22.5$ which is greater than the cost of the ORANGE.
If we make PINK by RED and WHITE, the cost of PINK would be $(20+15)/2 = 17.5$ which is less than the cost of the PINK paint.
Hence, the cost of the AVOCADO is $(22+17.5)/2 = 19.75$
132. (4) Mixing equal amounts of ORANGE and WHITE can make WASHEDORANGE, ORANGE can be made by mixing equal amounts of RED and YELLOW. So the ratio of RED, YELLOW and WHITE is 1:1:2
133. (2) If cost of AVOCADO paint is Rs.19.75
The cost of the CREAM is $[(7 \times 15) + (3 \times 75)] / 10 =$ Rs. 18
And cost of WASHEDORANGE is Rs.18.50
So CREAM is the most profitable.
134. (3) From given options F is the only possibility.
135. (4) If we look at the options D & G can sit together, C & F can sit together, B & D can sit together and E & A is the only option which is not possible.
136. (3) E & G is the only possibility.
137. (2) From the above information we can infer that option (2) is correct.

138.(4) B-Defence, D – Telecom

139. (1)

140. (1) $D + J = 46$

141. (1) From statement A.

142. (2) From both statements individually. If x is the number of tosses he took, from statement I we get the equation $10 + x - 100 = 50$. Thus $x = 140$. From statement II individually, we have $x > 138$. Thus we are sure he has paid up more than 148. If he incurs a loss of only Rs. 50, the game has to end normally. Thus the above state of his taking 150 shots with first 138 as tails and 139 and 140 throw as tails is the scenario. With no other scenario will a loss of just 50 and 138 tails show up.

143. (3) Using both statements.

144. (3) Using both statements.

145. (4)

146. (1)

147. (3)

148. (3)

149. (1)

150. (3)

151. (3)

152. (2)

153. (1)

154 -157:

Against Pakistan total was 220 so rest made only 22

Against South Africa total was 250 so rest made only 75

Against Australia total was 240 so rest made only 48

Now based on this information

154.(3) Number of players those have definitely scored less than Yuvraj are 2 i.e. Saurav and Rahul.

155.(2) Clearly from the above information best M index is of Saurav.

156.(3) It is possible to calculate the exact M index for Rahul and Saurav.

157.(2) Lowest R index can be of Kaif or Rahul who have R index of 23 or more.

Que. 158 to 161:

From the given data: Labour experts (LE) = 3

Health experts (HE)= 6

Population studies experts (PSE)= 6

Refugee Relocation experts (RRE)= 6

Experts from: America = 8

Africa = 4

Europe = 4

Australasia = 5

	LE	HE	PSE	RRE
America	1			
Australasia	1	1	2	1
Africa	0			
Europe	1	1	1	1

158. (3).

	LE	HE	PSE	RRE
America	1	2	2	3
Australasia	1	1	2	1
Africa	0	2	1	1
Europe	1	1	1	1

159.(4).

160.(3).

161.(3).

	LE	HE	PSE	RRE
America	1	3	1	3
Australasia	1	1	2	1
Africa	0	1	2	1
Europe	1	1	1	1

187. (2) Privilege means freedom, right and concession – all three. Therefore, the rising costs of a good education have made it an advantage the rich have over those less privileged. Every citizen has the rights mentioned here. Having a privilege over one’s rivals means having an edge over them due to rank, connections or something else in one’s favor. And if Sheron had the privilege of the company’s bungalow and car, then that was a concession.

188. (3) The clue here is sentence B – we never say ‘tragedy case’ or ‘calamity case’, and accident

does not fit in the other sentences. 'Disaster case', however, is common usage, and disaster can be sensed and can strike. Hence, (3) is the correct answer.

189. (4) Dejection seems to be confusing here, but in sentence B, dejection does not occasionally inflict all adults for no particular reason. Hence, the correct answer is depression.
190. (1) State here means all of these things: the nation or country (in A and D), the condition of affairs (in B), and to testify or assert (in C).
191. (1) The statement says that if practiced within limits, the idea of private property can function to the good of most people. Statements b) and c) are frontal attacks on communism, which are not warranted by the paragraph. D) can be a likely answer but a) is a more general statement and hence is the correct answer.
192. (1) In this case, to be fertile is to write well and produce good work. Hence (1).
193. (4) The argument is that it requires time and commitment to understand another language and culture. The only reasonable argument that weakens it would be that the same amount of time and commitment ought to be used to better understand one's own language and culture first.
194. (3) The author does not seem to be advising against trusting people, so the first two options are ruled out. All she/he says is that even the people we know best are always surprising us with different facets of their personality.
195. (4) Both stated in the paragraph. Line two is the first statement and a grade of O would mean a mark of 15 out of 26, with 26 being the lowest, which is below the average of 13.
196. (2) (1) is not correct because the program does not take two weeks to solve the problem. c) is incorrect for the same reason. The writing of the program is an achievement, and so "only part of the problem" is a negative phrase and does not belong here.
197. (3) What has to be conveyed here is that if doctors do not terminate the life of terminally ill patients who are in pain, it would only prolong their agony, and that too by only a few days. (1) does not express that, b) does not convey that two separate situations are being spoken of, and d) is incorrect because the end can be delayed but cannot delay.
198. (4) 'Us' is an objective pronoun, which means that it can be used as the object of a verb, as in, "He took us out to dinner," but not as the subject of a sentence. 'We' is a subjective pronoun, which means it can be used as the subject of a sentence, as in this one – "We had left before he arrived."

199. (3) This follows the logical order of past to present – from "Almost a century ago..." to "Today..."
200. (3) Option (1) begins with 'but', and hence cannot be the first sentence in the set. Option (4) contains the phrase "such changes", so it would have to be preceded by a sentence that tells us what kind of changes. Hence the correct answer is (3)
201. (3)
202. (1)
203. (2) Fission is the disintegration or separation of molecules; fusion is their union. Hence (2).
204. (3) Dulcet is sweet to the ear or melodious, raucous is noisy and harsh. Palliative means something that is soothing; exacerbating is aggravating. Hence they are corresponding in meaning.
205. (4) Anterior means before or front, posterior means behind. Hence (4).
206. (2) An atheist is someone who does not believe in god, a skeptic is someone who is undecided. Doubt is analogous to skeptic, faith would be analogous to mistrust or disbelief.
207. (2) To assail is to attack, to defend is to fend the attack off. Hence (2)