

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

## CATalsyt Education Group :

CATaylst is a Unique group tuition program. It was created by Munira Lokhandwala with general idea of selecting a small group of students every year and training them to crack the mother of all entrance tests.

Rahul Vani and Bijoy Shah soon joined the group to give CATalyst a whole new dimension, so that maximum number of students benefit from CATalyst.

# Our CAT 2006 Results

Total Students : 28

IIM call getters : 9

**More than 33% CATalystians scored 99.xx%tile**

**Munira Lokhandawala teaches at CATalyst.**

**Who's Munira Lokhandawala:**

- 30 year old woman. Currently resides in Vashi
- Mathematics graduate, St. Xavier's, Class of 1997
- IIM Calcutta, Class of 1999
- Worked as CAT Product Head and Faculty, IMS, CL etc.
- Loves solving Maths Puzzles, dancing, bullet points
- 99.99%ile in CAT 2004, 100%ile in CAT 2005, 99.99%ile in CAT 2006

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798

## Solutions for CAT 2004 :

### Section I English

1. 3 The right construction would be ".....help himself to the beer...".
2. 4 The correct expression is "listen to reason", implying responding to sensible advice.
3. 1 Should have been " great on paper".
4. 2 Should have read " .... runs a profitable business ..."
5. 1 "Customers have to serve themselves....", not service themselves.
6. 1 D is the opening line, being further explained/exemplified. E and A contain a contrast between the ideas of enjoyment and brutality. Lines A and C are referring to the same Labour party.
7. 3 E-C-D are logically interconnected while A-B present a contrast.
8. 2 C-E-D make a logical trio. B further extends the idea.
9. 1 D and A are in chronological order. E carries forward the idea of A and again C presents a related fact about the whole thing.
10. 2 A very definitive hint is the logical link between A-D. B is a brilliant opening remark, hence the option
11. 1 D explains what E means. C and B are logically interconnected.
12. 4 The right sequence would be one having E-D-B because they refer to chronological events.
13. 4 E-C are logically interconnected while B makes for a good contrast with C.
14. 1 The keywords "least conscious" -- obviously, you become conscious of proper punctuation only if it obtrudes, i.e. hinders your flow or shows up prominently.

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)  
Rahul : 98696 79299

Bijoy : 98672 0798

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

15. 3

16. 1 If one travels abroad it is to explore the world.

17. 4 The second word should be more intense in degree as compared to the first one, indicated by even.

18. 4 Simplified guide...anyone facing decisions.

19. 2 Paralyzed people do not have complex or involuntary nerves, but some of their nerves are damaged.

20. 3 The sentence conveys the idea of the maximum possible choice, which can result only in the presence of minimal constraints.

21. 2 The right choices should be similar in meaning.

22. 1 In these questions, the idea is to assess whether you can grasp the essentials, leaving out secondary things, of a piece of writing. The right option should encompass the basic idea, giving it a prominent position, while relegating the less important details.

23. 1

24. 2

25. 2

26. 1 Explained in the first paragraph

27. 2 Refer to paragraph 1.

28. 4 Refer to the 4th paragraph.

29. 2 Refer to line 7, paragraph 1

30. 1 Refer to the 4th paragraph.

31. 4 The first to third choices find no support at all in the passage..

32. 3 The line demonstrates the widening gulf between the interests of the earlier and the now generations.

33. 1 Refer to the third paragraph, the opening and closing lines.

34. 2 The last line of the last paragraph amply justifies option 2.

35. 4 Refer to the 4th paragraph.

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

36. 2 Refer to the last and the opening few lines of the first and the second paragraphs respectively.
37. 3 The last line of the first paragraph makes a categorical reference in this regard.
38. 4 Refer to the second paragraph.
39. 3 Go through the opening paragraph, which clarifies that the basic idea behind the author's writing this piece is to describe the inadequacy of the PRIs.
40. 1 The last few lines of the last paragraph indicate that the PRIs have little say in the matter of implementing schemes relevant to their specific needs because the central schemes are thrust upon them with a directive to provide matching grants.
41. 4 The first paragraph explicitly rules out mysticism as being a part of their artistic creations. Similarly, the second paragraphs says a lot about what actually the Greek art is like.
42. 2 All other combinations except the second one are wrong because simplicity was an outstanding feature of the Greek art, of which Parthenon is an example.
43. 4 Refer to the 4th paragraph.
44. 1 Go through paragraph 1.
45. 3 Last paragraph.
46. 3 The last line of paragraph 2 clearly mentions that radars may not be used in future because on-board computers, which will do the job earlier performed by radars, will replace their functions.
47. 3 Line 4, paragraph 5
48. 1 Line 5, paragraph 2.
49. 2 The fact of the airplanes gaining in speed, stealth etc has been given as a secondary piece of information. The real idea has been given in the last lines of the paragraph, which focus only on size.
50. 4 Refer to the first paragraph.

## Section II Maths

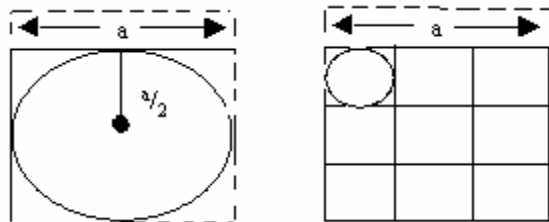
51. 2 We know that  $xyz = 4$ . For minimum value of  $y$ , we must have  $x = y = z$ . Hence  $y = 2^{2/3}$ .
52. 3 Total codes which can be formed =  $9 \times 9 = 81$ . (Distinct digit codes). The digits which can confuse are 1, 6, 8, 9 from these digit we can form the codes =  $4 \times$

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)  
Rahul : 98696 79299

Bijoy : 98672 0798

= 12. Out of these 12 codes two numbers 69 and 96 will not create confusion. Therefore  $(12 - 2) = 10$  codes will create a confusion. Therefore total codes without confusion =  $81 - 10 = 71$ .



53. 1 First process: Let  $n = 3$ . Then radius of the small circle =  $a/6$ . Area of circle =  $\pi (a/6)^2$ . Scrap area =  $(a/3)^2 - \pi (a/6)^2$ .  
 Total scrap =

$$\left(\frac{a}{3}\right)^2 - n\left(\frac{a}{6}\right)^2 = \frac{4a^2 - na^2}{4}$$

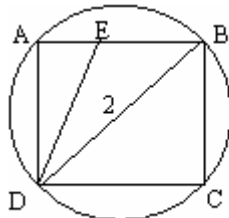
Second case: Scrap area =  $a^2 - \pi (a/2)^2 =$

$$\left(\frac{a}{3}\right)^2 - n\left(\frac{a}{6}\right)^2 = \frac{4a^2 - na^2}{4}$$

Both are the same, hence 1:1.

Alternately (short-cut): Whenever circles are cut from a square, the area of the circles is always the same as the area of the bigger circle so constructed.

54. 1 Let radius of the circle = 1



Then in rectangle ABCD,  $AB^2 + AD^2 = 4$ . By hit and trial, we get  $AB^2 = 3$ ,  $AD^2 = 1$  [since  $AB \neq AD$ , which is given], hence  $AB = \sqrt{3}$ ,  $AD = 1$ . Now take triangles AED and BCD. Since  $\angle ADE = \angle CBD$ , the triangles are similar by AAS property, hence

$$\frac{AE}{AD} = \frac{BC}{DC} = \frac{1}{\sqrt{3}}$$

55. 2 Consider any one town, it is to be connected with three direct lines with two towns, which are in the same zone and one direct line with each of the other nine towns, which are outside its zone. It totally needs  $6 + 9 = 15$  and there are 12 towns, hence the total direct points to be attached will be  $15 \times 12 = 180$ , but every line will be attached to two points. Thus the telephone lines needed are  $180/2 = 90$ .

56. 3

57. 1 Take the height of the vertical tower, any numerical value say 12 mt. Now the angle of elevation is 45 degrees, hence the total distance will also be 12 metres (as it becomes an isosceles right triangle). Now take an angle of 60 degrees and find the distance from the foot of the tower with the help of 30-60-90 triangle, it comes out to be  $12/\sqrt{3}$  i.e.  $4\sqrt{3}$ . This means the car has covered  $12 - 4\sqrt{3}$  in 10 minutes, the car will cover  $4\sqrt{3}$  in how much time. Apply the unitary method and  $4\sqrt{3} \times 10/(12 - 4\sqrt{3})$ . Simplify and get  $5(\sqrt{3} + 1)$ .

58. 3 Take  $\angle DAC$  as  $x$ ,  $\angle ACD$  also becomes  $x$  (both are equal). Take  $\angle BDC$  as  $y$ ,  $\angle CBD$  also becomes  $y$ .  $\angle DCB$  take it as  $z$  and  $\angle CDA$  becomes  $(180 - y)$ . Now as per the exterior angle formula  $x + (180 - y) = 96 + z$ . secondly  $x + 96 + z = 180$ , thirdly  $x + x + (180 - y) = 180$ . Solve these three simple equation and get the value of  $y$  as 64 degrees.

59. 2  $b^2 - 4a$  has to be  $\geq 0$ . Take  $b$  as 4, all four values can take place for  $a$ . Now take  $b$  as 3,  $a$  can only be 1 and 2. Now take  $b$  as 2,  $a$  can only be 1. If you take  $b$  as 1, none of the values will make it greater than or equal to zero. Hence the total is  $4 + 2 + 1 = 7$ .

60. 2 Put the option, the second option given i.e.  $1/100$  makes them equal.

61. 2 The smallest number which gives a remainder of 3, when divided by 7 is 10, then 17 and so on. The highest two -digit number which is of this form is 94. Now apply the AP formulas to see 94 is the 13<sup>th</sup> term of that sequence. Now apply the sum formula to have the total i.e.  $n/2 (a + l) \square 13/2 (10 + 94) \square 13 \times 52 = 676$ .

62. 1

63. 4 Take  $n$  as 2 or 3. Then find the sum of first 2 or 3 terms. Do put the respective value of  $n$  and check only the fourth option gives the right answer.

64. 3 Take the value of 'a' as 2. Now calculate the values of  $P_1, P_2$  &  $P_3$ , which comes out to be 8,  $4\sqrt{2}$  & 4 i.e. the value of every  $P$  is  $1/\sqrt{2}$  of the previous value of  $P$ . Calculate the values of  $A_1, A_2$  &  $A_3$ , which comes out to be 4, 2 & 1 i.e. the value of every  $A$  is half of the previous value of  $A$ . Take the totals by applying GP infinite formula. The sum of  $P$ s will be  $8/(1 - 1/\sqrt{2}) = 8\sqrt{2}/(\sqrt{2} - 1)$ . Simplify this and get  $8(2 + \sqrt{2})$ . Take the sum of all  $A$ s  $4/(1 - 1/2) = 8$ . Now before taking the ratio see in all

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798

the options the denominator is consisting of a. Now convert 8 in the form of 4a (because 'a' we have taken as 2). Get the ratio as  $2(2 + \sqrt{2})/1$ .

65. 3 Let

$$S = 1 + \frac{4}{7} + \frac{9}{7^2} + \frac{16}{7^3} + \frac{25}{7^4} \dots \quad \text{(i)} \quad \therefore \frac{1}{7} S = \frac{1}{7} + \frac{4}{7^2} + \frac{9}{7^3} + \frac{16}{7^4} \dots \quad \text{(ii)}$$

(i) – (ii) gives,

$$S \left(1 - \frac{1}{7}\right) = 1 + \frac{3}{7} + \frac{5}{7^2} + \frac{7}{7^3} + \frac{9}{7^4} \dots \quad \text{(iii)}$$

$$\frac{1}{7} \times S \left(1 - \frac{1}{7}\right) = \frac{1}{7} + \frac{3}{7^2} + \frac{5}{7^3} + \frac{7}{7^4} \dots \quad \text{(iv)}, \quad \text{(iii) - (iv) gives,}$$

$$S \left(1 - \frac{1}{7}\right) - \frac{1}{7} S \left(1 - \frac{1}{7}\right) = 1 + \frac{2}{7} + \frac{2}{7^2} + \frac{2}{7^3} + \frac{2}{7^4} \dots$$

$$\therefore S \left(1 - \frac{1}{7}\right) \left(1 - \frac{1}{7}\right) = 1 + \frac{2}{7} \left[1 + \frac{1}{7} + \frac{1}{7^2} + \dots \infty\right]$$

$$\therefore S \left(1 - \frac{1}{7}\right)^2 = 1 + \frac{2}{7} \times \frac{1}{1 - \frac{1}{7}}$$

$$\therefore S \left(\frac{6}{7}\right)^2 = 1 + \frac{2}{7} \times \frac{6}{7} \quad \therefore S \times \frac{36}{49} = 1 + \frac{1}{3}$$

$$\therefore S = \frac{49}{36} \times \frac{4}{3}, \quad S = \frac{49}{27}$$

66. 1 The set is consisting of five consecutive numbers, one of these will always be a multiple of 6 except in the case when n is a multiple of 6 + 1. Now the first such number is 7 and the last such number in the range will be 91. You can apply the AP formula and see 91 is the 16th number. Hence out of 96 only 16 sets will not have a multiple of 6. Hence 80 is the answer.

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

67. 2 Make the hexagon and then divide it into six equilateral triangles. You can see every triangle has 50% of its area in the bigger triangle ACE (given in the question) and the remaining 50% in the hexagon. Thus the area of the bigger triangle will be 50% i.e.  $\frac{1}{2}$  of the area of the hexagon.

68. 1

69. 4 Take n as 1 and see the left hand side becomes 0. Hence x is greater than 0, which is only given in the 3<sup>rd</sup> option. Otherwise putting x as 1 on the RHS also gives x as  $\leq 4$ .

70. 2  $1000 + 500 + 200 + 50 + 30 + 5 + 2 = 1787$ .

71. 1  $1000 + 900 + 90 + 9 = 1999$ .

72. 3 You can calculate a. is 1925, b. is  $1000 + 900 + 90 + 5 = 1995$ , c. is 1495, d. is  $1000 + 995 = 1995$ . Hence both b. & d.

73. 1 We are given that  $gn = e$  and from the second table,  $g * g = h$ ;  $n = 2$ .  $g * g * g = g * h = f$ ;  $n = 3$   $g * g * g * g = g * f = e$ ;  $n = 4$  Hence  $n = 4$

74. 4 Starting from the innermost function;  $f * f = h$   $f \text{ \AA } h = e$   $f * e = f$   $f \text{ \AA } f = h$

75. 1  $e8 = (e * e)4 = e$   $g9 = g * h * h * h * h = g * e * e = g$   $f10 = (f * f)5 = h5 = e$   $2h = e * h = h$   $f10 \text{ \AA } g9 = h \text{ \AA } g = g$

$a10 * g = a$  Hence  $a \text{ \AA } e = e$

76. 1 Let radius of each circle = r. Then  $A_1 A_2 A_3 = 6r = a$ . Taking triangle  $A_2 B_2 P$ , we get

$x/r = \cos 30 = \frac{\sqrt{3}}{2}$ ; thus  $x = \frac{r\sqrt{3}}{2}$ . therefore  $B_1 B_2 = 2r + 2x = 2r + 2 \times \frac{r\sqrt{3}}{2} = 2r + r\sqrt{3}$ ;  $b = 6r + 3r\sqrt{3}$ ,  
Similarly  $C_1 C_2 = 2r + 2r\sqrt{3}$ , Hence  $b - a = c - b = 3\sqrt{3} r$ .

77. 3 Let  $r = 30$ . Then time taken  $A_1 A_2 = 60/2 = 3$ ;  $A_2 A_3 = 60/30 = 2$ ;  $A_3 A_1 = 60/15 = 4$ . Total = 9 units.

In 9 units, B travels  $9(10\sqrt{3} + 20) = 90\sqrt{3} + 180$ . Distance traveled by B =  $90\sqrt{3} + 180$  (from previous question)

Hence B would have reached  $B_1$ . Similarly, C travels

$C_1 C_2 = \frac{(60 + 60\sqrt{3})}{(40/3)(\sqrt{3}+1)} = 60 \times \frac{3}{40} = 18/4$   
 $C_2 C_3 = \frac{(60 + 60\sqrt{3})}{(40/3)(\sqrt{3}+1)} = 60 \times \frac{3}{40} = 18/4$   
Since  $18/4 + 18/4 = 9$ , this means C reaches  $C_3$  in 9 units of time.

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798



2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

78. 2 Since  $u^2 : v^2 : w^2 = \text{Area of A} : \text{B} : \text{C}$ , then the time taken to cover the three sprints are equal.

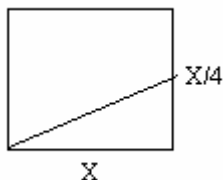
Hence A would be at  $A_3$  and C would be at  $C_3$ .

79. 1 Vertical spacing = height/no. of turns =  $h/n$

80. 2 Consider the side of the cube :

By Pythagoras, we get  $x^2 + x^2/4 = \sqrt{17}x/4$

Length of the string =  $\sqrt{17}x/4 \times 4$ .



81. 3 From the above,  $h = x$

82. 4 Let  $x = 7$ ,  $y = 21$ . We find that all choices are wrong.

83. 4 Total =  $15 + 3 + 5 = 23$ . Cars having none =  $25 - 23 = 2$ .

86. 3  $36 \leq n \leq 72$

$$x = (n^2 + 2\sqrt{n(n+4)} + 16)/(n + 4\sqrt{n+4})$$

put  $x = 36$ .

$$\text{Therefore } x = ((36)^2 + 2 \times 6 \times 40 + 16) / 36 + 24 + 4$$

Which is least value of 'n'. = 28.

87.  $(13x + 1)/2 < z$ ,  $z = 5y^2 - 3$  or  $6.5x + 1/2 < 5y^2 - 3$   $6.5x < 5y^2 - 3^{1/2}$ . Put  $x = 1$ ,  $y = 2$  or  $-2$ .

We find none of the values are correct.

88. 4 Let  $n = 6$ . Therefore  $\sqrt{n} = \sqrt{6} = 2.4$ . Therefore divisor of 6 are 1, 2, 3. If we take 2 as divisor then  $\sqrt{n} > 2 > 1$ . Statement A is true. If we take 3 as divisor then  $6 > 3 > 2.4$ , i.e.  $n > 3 > \sqrt{n}$ . Therefore statement B is true.

89. 2  $|b| \geq 1$ . Then  $a - xb = a - x$ , if a is true, then  $a - x = |a|$  taking  $b = 1$ , we get  $x = -0$ , hence (1) and (3) are ruled out. Taking  $x = 2$ ,  $b = -2$  we get  $2 = -|a|$   $x - 2$ , hence  $a = 1$ . Then  $a - xb = 1 - 2(-2) = 5 > 0$ .

90. 4 Triangles ABC and DBE are similar. Hence sides are also reduced by 35%. Sides of

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

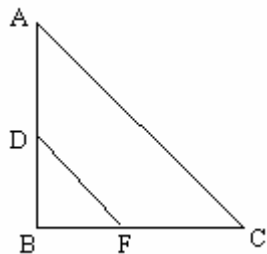
Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

triangle DBE = 0.65 and 0.65 respectively. Then area  $34 (0.65)^2 = 14.365$ .



91. 3 Starting with 100, we get

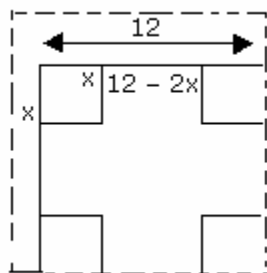
|      | Starting | Destroyed | Built | New Total |
|------|----------|-----------|-------|-----------|
| 2001 | 100      | 50        | 100   | 150       |
| 2002 | 150      | 75        | 150   | 225       |
| 2003 | 225      | 112.5     | 245   | 357.5     |
| 2004 | 357.5    | 178.75    |       |           |

We see from the above that  $178.75 < 75 + 112.5$ , hence (3).

92. 4  $a = 6b = 12c$  and  $2b = 9d = 12e$ . Dividing first equations by 12 and second by 36. we get  
 $a/12 = b/2 = c/1$  and  $b/18 = d/4 = e/3$  i.e  $a/108 = b/18 = c/9$  and  $b/18 = d/4 = e/3$   
 therefore  $a/108 = b/18 = c/9 = d/4 = e/3$  therefore  $a : b : c : d : e = 108 : 18 : 9 : 4 : 3$ .  
 thus  $c/d = 9/4$  is not an integer., Hence 4<sup>th</sup> option.

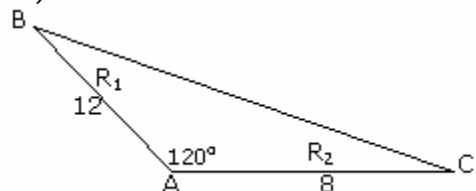
93. 1 The only possible solution is 3, 5, 7. However, the answer in the CAT bulletin is 2.

94. 4 Volume of the box =  $l \times b \times h = (12 - 2x) (12 - 2x) (x)$  Putting  $x = 1, 2, 3, 4$ , we get the max. value of the above equation at  $x = 2, v = 128$ .



95. 2  $AB = 12$ ,  $AC = 8$ . Using cos rule, We have  $BC^2 = a^2 + b^2 + ab = 144 + 64 + 96 = 304$   
 therefore  $BC = 4\sqrt{19}$ .

Ram's time =  $(4\sqrt{19} + 8)/3$  Shyam's time =  $(4\sqrt{19} + 12)/2$  Difference =  $(2\sqrt{19} + 10)/3$



96. 4 Make the cycle, you can see any power of 4, divided by 6, gives a remainder of 4 in every case. Hence fourth option is the answer.

97. 3

98. 2  $\log_3 M = \log_3 M^{1/3} / N^3 \log_{0.008} (5 \times 0.008) = \log_{0.008} 0.04 \log_{0.008} 0.04 = 2/3$ .  
 Then,  $M^{1/3} N^3 = 3^{2/3}$  Or  $MN^9 = 9$  Or  $N^9 = 9/M$ .

99. 1 78 paise can be made with the help of seven coins as  $50 \times 1 + 10 \times 2 + 2 \times 4$ . Similarly 69 paise can be made with the help of five coins as  $50 \times 1 + 10 \times 1 + 5 \times 1 + 2 \times 2$ . Thirdly 101 paise can be made with the help of seven coins as  $50 \times 1 + 25 \times 1 + 10 \times 2 + 2 \times 3$ . Thus the total number of coins are 19.

100. 3 Take the same perimeter as 12. And find the area of the circle as  $(12)^2/4\pi$ , which is around 11.50. Find the area of the triangle  $4 \times 4 \times \sqrt{3}/4 = 4\sqrt{3}$ , which is around 6.8. Find the area of the square, which will be  $3 \times 3 = 9$ . Hence  $c > s > t$ .

**Section III Data**

101. 1 The husband, wife and no of children info is Sunil, Sridevi - 1; Anil, Anita; Raj, Joya; Ram, Shanthi, 0. The order of arrival of the wives is Anita, Joya, Shanthi and Sridevi.

102. 2

103. 3

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

104. 2

105. 3 The arrangement that satisfies all conditions is Left side - D A F and right side - C E B. This can be used to answer all the questions of this set.

106. 4

107. 1

108. 2

109. 2 The arrival order of the professors into the lounge is JC - 1, JP - 5, SM - 3, SS - 2, DG - 4, PK - 7 and VR - 5.

110. 1 from the above

111. 2 The three whom he met were JP, DG and JC.

112. 4 The statement by PK can tell us that Pk came last. He only saw JP and DG. Since he left immediately - they were the ones who would have left later.

113. 4 The first statement tells us that A and B both made 50 and C had less. Since there was a tie, the second statement about dropped catches is also required.

114. 3 Using the first statement we can say that B and C are among the first two - and A and D are among the last two. The second statement also ends up giving us the same information - we can now use the info in the question to get the order. So either is sufficient.

115. 1 Given  $D * N = 600$ . The first statement tells us that  $(D+10)(n-5) = 600$ . Two equations and two unknowns are enough to solve for D. The second stmt does not give us sufficient information.

116. 1 (A) says that  $F - M = 10 = (k + n)$ . So  $k = 10 - n$ . So the sum of their age would be  $7(10) = 70$ .  $F + n = 4 (k + n)$  and  $M + n = 3 (k + n)$ . Combined ages of parents will be  $7 (k + n)$ . Stmt B tells us that  $k = n$ . So we know that the combined age will be  $14n$ . Since the first statement gives us an absolute answer, we mark 1

117. 2 We can use the information given to make a tree. Mastemind supplies directly to A, D and G. A is the single source used by E and H. F uses both E and H for the information. E and G prove to be the source for B. E and D are the source for I. C sources from I alone, single source. The questions nos that are changed are A - 46, B - 96, C - 56, D - 17, E - 90, F - 14, G - 25, H - 92 and I - 27. This info is sufficient to answer all the questions.

118. 3

119. 4

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

120. 3

121. 4

122.  $3(100-70)+(100-75)+(100-80)+(100-85)=90$  Hence answer is  $100-90=10$

123. 1 The arrangement that satisfies all conditions is Thu - Congress and SP, Friday - BJP, BSP and CPM. This takes into account the road blockade and no two processions on the same road. This can be used to answer all the questions of this set.

124. 4

125. 2 Number of countries having Birth rate less than 34 are 32. There are three countries with Birth & Death rate same (34, 10). All these countries will have the same rank. Hence answer is  $32+1=33$

126. 1

127. 4

128. 1

129. 3 Check the number: it has been 4 for 4 censuses starting 1931-61.

130. 2 Only the absolute figures are asked - they are 86 and 54 for HP and Kerala - the highest amongst all.

131. 3 There are 5 states that fit the criterion of the question, amongst them Bihar has the sharpest decline.

132. 3 By far, the simplest set of the entire Data section, can be answered by just checking visually.

133. 2 Check by visual inspection

134. 1 Excluded in the third graph are the countries B & D(whose avg. operating profit is -ve in 2001-2).The only negative choice is the answer.

135. 3 The profits for the 4 options are A -  $180*8$ , C -  $200*15$ , E -  $200*18$  and F -  $230*8$ . It is the highest for E.

136. 4 The only false statement is 4

137. 4 C and E are the cos that have profitability greater than 10%. Their average profit is  $(200*15 + 200*18) / 2 = 32.5$

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

138. 1 The question requires us to add all the 200 m times of each of the teams and then check the difference. Since 10 is common to all the times, we can only look at the decimal parts for the calculations  $(0.95+0.85+0.58+0.63) - (0.78+0.75+0.94+0.36) = 0.18$  s

139. 2 Check up the column for final scores. The top 3 scores are 8905, 8897 and 8880. To get the bronze, Daley will have to get a minimum of 8881 points. He already has  $(582 + 3003)$ . So the difference  $8881 - 3585 = 5296$  points will have to be scored in Score-2.

140. 4 Michael Smith has 6 people who have scored less points than him. Out of these 4 of them have higher scores than him in both high jump and pole vault. So he must have scored more than them in the long jump in order to take a lead over them as far as Score-3 is concerned.

141. 3 The selling price of cement is 104. The costs would be  $20*1.05 + 25*1.08 + 15*1.05$ . The margin would be 40.25, the difference between the two. The %ge margin comes out to be  $40.25/104 = 38.5\%$

142. 2 The selling price of steel is 105.5. The costs would be  $30*1.08 + 25*1.06 + 10*1.05$ . The margin would be 36.1, the difference between the two. The %ge margin comes out to be 34 %. This is less than the cement industry.

143. 1 Check by visual inspection

144. 4 Check by visual inspection

145. 2 If you look at the entire range of years, then the answer is 1995. What is asked is 96-00. In this span of time, the ratio is highest for 1997 -  $209/587$ . The rate of increase of numerator (exports) after that is not as much as the rate of increase of the denominator ( production.)

146. 1 The population can be determined by dividing the availability of tea by the per capita availability of tea in Chaidesh. For the years in the option this comes out to - 95 -  $214/485$ ; 96 -  $372/464$ ; 97 -  $378/510$ ; 99 -  $440/566$ . Without actually doing any division, we see that  $214/485$  is the lowest of the four - so the year required is 1995.

147. 1 This question does not require any calculation. We see that the highest production is in 1999. Also since there is a decrease every year, the lowest area of cultivation would also be in 1999. It can be concluded that the productivity =  $\text{Production} / \text{area}$  would be the highest in 1999.

148. 3 Check the starting and ending points of each of the commodities to see the overall change. Dal and oil went down, the rest increased. So ans is 4 and 2.

149. 4 Except for edible oil, the rest experienced a price decline for two or more consecutive years, ans is 5.

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798

2007 CATalyst Education Group  
[www.catalyst4cat.com](http://www.catalyst4cat.com)

150. 4 Check visually, is true for egg and onion.

Munira answers queries at: <http://www.orkut.com/Community.aspx?cmm=35535271>

Contact Us: [munira@catalyst4cat.com](mailto:munira@catalyst4cat.com) [rahul@catalyst4cat.com](mailto:rahul@catalyst4cat.com) [bijoy@catalyst4cat.com](mailto:bijoy@catalyst4cat.com)

Rahul : 98696 79299

Bijoy : 98672 0798