BIM Entrance Test
December 22, 2002

We are pleased to present a detailed analysis of the BIM entrance test that was held on December 22, 2002.
These questions have been recalled with the help of PT faculty and PT students from across the nation.

A bird's eye view :

- Duration : 150 minutes; number of questions : 180.
- Total 5 sections:
  - Section 1: 30 Q (Data Interpretation)
  - Section 2: 40 Q (General Awareness)
  - Section 3: 40 Q (Quantitative Aptitude)
  - Section 4: 40 Q (English Usage & Reading Comprehension)
  - Section 5: 30 Q (Logical Reasoning)
- The marking scheme:
  - +3 for a correct answer.
  - –1 mark for incorrect answers.

Section 1 : 30 Q (Data Interpretation)

This section was on the manageable side. It had two pie charts and a bar graph which took care of a major chunk of questions. The questions from this section were direct and easy to attempt. A decent attempt could have been 25 - 28 questions.

Section 2 : 40 Q (General Awareness)

The general awareness section was manageable for a well read student. Most of the questions were economics and business related. A decent attempt would be around 26 - 30 questions.

Section 3 : 40 Q (Quantitative Aptitude)

This section was not too difficult and could have been easily cracked. A decent attempt would be around 30 to 35 questions.

Section 4 : 40 Q (English Usage and Reading Comprehension)

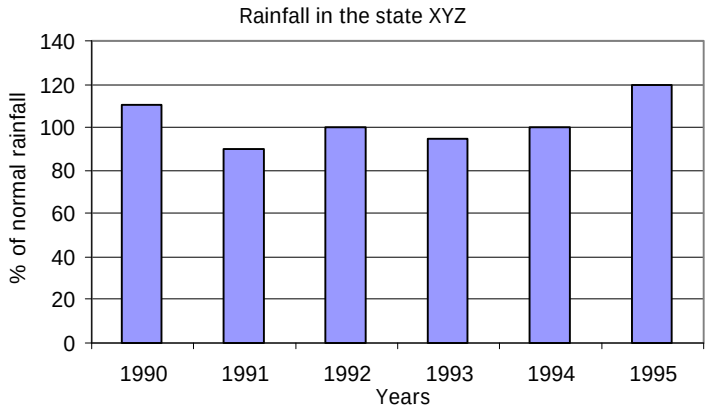
The Reading Comprehension part comprised two easy and small passages which were followed by 10 - 11 direct questions. The length of these passages were small and the content was easy to understand.
The English usage section had no element of surprise and was based on the routine pattern (synonyms, antonyms, fill in the blanks analogies, etc). A good attempt would be in the range of 23 - 27 questions.

Section 5 : 30 Q (Logical Reasoning)

This section comprised easy set of questions, the questions were direct and didn't involve tedious calculations A decent attempt in this section could have been around 20 - 25.

Data Interpretations

Directions for Q.1 to 3 : *Study the following Bar Graph carefully and answer the questions that follow.*



1. In how many years did the state receive normal rainfall ?
   (1) 2 (2) 5
   (3) 8 (4) None of the above

Sol: Ans.(1)

2. In which year was the rainfall above normal ?
   (1) 1990, 1994 (2) 1990, 1995
   (3) 1990, 1993 (4) 1990, 1994

Sol: Ans.(2)

3. In which year, the state faced a situation of flood ?
   (1) 1991 (2) 1994
   (3) 1993 (4) cannot be determined

Sol: Ans.(4)

End of section 1

General Awareness

Directions for Q.1 to 12 : *For the following questions, choose the correct option.*

1. Which of the following is not the concern of 'World Bank' ?
2. What is the strategy for the 10th five year plan ?
3. According to 'Business Today', which company was not listed amongst top 9 in 2001 ?
4. Which of the following is true according to the 'Kyoto protocol' ?
5. India's Software market is expected to grow by, what percentage in the coming year ?
6. Net telephony launched by MTNL is named as :
7. Which is the second largest nation in terms of growth in the software industry ?
8. Who received the 'Lal Bahadur Shastri Award' for the year 2001 ?
9. Which of the following scientist got the 'French Award' ?
10. Which company is not listed in NYSE ?
11. Which is the largest pharmaceutical company in India ?
12. How many countries are there under SAPTA ?

End of section 2

Quantitative Aptitude

Directions for Q. 1 – 13 : For the following questions choose the correct options.

1. Three numbers are in A.P. The difference between the highest and the lowest is 594. Find the numbers ?
   (1) 1, 298, 595 (2) 14, 296, 578
   (3) 21, 245, 466 (4) None of the above

Sol: Let the numbers are a – d , a, a + d. Then by the conditions given in the question :
a + d – a + d = 594 $\Rightarrow$ d = 297 **Ans.(1)**

2. A sphere of radius 10 cm is melted into 8 small spheres of half the radius of the big sphere. What will be the surface area of the small sphere ?
   (1) 50π (2) 100π
   (3) 200π (4) 150π

Sol: Let the radius of small spheres = r . Then by the condition given in the question

$\frac{4}{3}\times\pi\times10^3 = 8\times\frac{4}{3}\pi\times r^3 \Rightarrow$ r = 5 cms, so the surface area of each of the small spheres = $4\pi r^2 = 100\pi$. **Ans.(4)**

3. In a G.P. the number of terms are even. The sum of the terms is 5 times the sum of the old term. Find the common ratio ?
   (1) 1 (2) 2
   (3) 4 (4) 5

Sol: Let the terms be a, ar, ar^2 , ar^3. Sum of the terms = a (1 + r + r^2 + r^3).
As per the given conditions, the sum of the series = 5 times the sum of the odd terms.
a (1 + r + r^2 + r^3) = 5a (1 + r^2) $\Rightarrow$ r = 4. **Ans.(3)**

4. Mr. A invested Rs. 1,00,000 in a company. He earned a profit of 5% in the 1st year, reinvested his profits and earned 10% in the second year, again invested back and gained 12% in the 3rd year. What is the net profit earned ?
   (1) Rs.12,660 (2) Rs.15,000
   (3) Rs.11,980 (4) Rs.13,860

Sol: Profit earned in the first year = Rs. 5000. Profit earned in the second year is 10% of the reinvested amount = 10% of 1,05,000 = Rs. 10,500. Profit earned in the third year is 12% of the reinvested amount = 12% of 115500 = Rs. 13,860. **Ans.(4)**

5. The cost of painting the wall of a house is Rs. 3600. If the dimensions are doubled then what will be the cost of painting ?
   (1) Rs.9650 (2) Rs.14400
   (3) Rs.14390 (4) Rs.23850

Sol: Cost of painting the wall = Rs. 3600. When the dimension are doubled $\Rightarrow$ 2l × 2b. The cost will be four times the original cost. i.e., 4 × 3600 = Rs. 14400. **Ans.(2)**

6. What is the ratio of the volume of cylinder to that of a cone, when the radius and the heights are equal ?
   (1) 3 : 1 (2) 1 : 3
   (3) 4 : 5 (4) 5 : 4

Sol: **Ans.(1)**

7. If $a = \frac{\sqrt{3}+\sqrt{5}}{\sqrt{5}-\sqrt{3}}$ and $b = \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}$. Which is greater (a + b) or $(\frac{1}{a}+\frac{1}{b})$?
   (1) a + b (2) Both are equal
   (3) $(\frac{1}{a}+\frac{1}{b})$ (4) Cannot be determined

Sol: Given $a = \frac{\sqrt{3}+\sqrt{5}}{\sqrt{5}-\sqrt{3}}$ and $b = \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}$.

$\Rightarrow a = \frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}\times\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}+\sqrt{3}} = \frac{\{\sqrt{5}+\sqrt{3}\}^2}{5-3}$ = 4 + √15. Similarly b = 4 – √15 ....(2), 1/a = 4 – √15 .....(3) and 1/b = 4 + √15 .
Hence a + b = 8 and 1/a + 1/b = 8 . **Ans.(2)**

Disclaimer: All these questions have been memorised by PT students. We are merely reproducing a few of them here in fragments to ensure that the huge community of students eagerly waiting to see an objective comparison of their performance gets the right picture.

8. A pipe takes 2 hrs to fill a tank and the same tank is emptied by another pipe in 3 hrs. What is the time taken when both the pipes are open together ?

(1) 4 hours (2) 5 hours

(3) 6 hours (4) None of the above

Sol: Let the time taken to fill the tank be 2 hours. So in 1 hour half of the tank will be filled, also to empty the tank time taken is 3 hours or the part of the tank emptied in 1 hour is 1/3. Therefore, time taken to fill the tank = 1/2 – 1/3 = 1/6. Hence, time taken to fill the tank will be 6 hours. **Ans.(3)**

9. If $A = \frac{a^2 - b^2}{a - b}$ and $B = \frac{a^3 - b^3}{a^2 - ab + b^2}$ then which of the following statement is true ?

(1) A > B (2) A < B

(3) A = B (4) None of the above

Sol: $A = \frac{(a+b)(a-b)}{a-b}$ = (a+b) and $B = \frac{(a+b)(a^2 - ab + b^2)}{(a^2 - ab + b^2)}$ = (a+b). i.e., A = B**. Ans.(3)**

Directions for Q. 10 – 12 : For the following mark your answer as :

Option (1), if column I is greater than column II.

Option (2), if column II is greater than column I.

Option (3), if both are equal.

Option (4), if there is no comparison between the two.

	Column I	Column II
10.	Set A = {1,4,6,8}	Set B = {months with number of days = 30}

Sol: Size of Set A = Number of elements in Set A = 4. Size of Set B = Number of elements in Set B = 4. Hence, both the columns are equal. **Ans(3)**

11.	HCF = $\frac{1}{2}, \frac{1}{5}, \frac{1}{7}, \frac{1}{21}$	LCM = $\frac{1}{2}, \frac{1}{3}, \frac{1}{5}, \frac{1}{7}$

Sol: HCF of $\frac{1}{2}, \frac{1}{5}, \frac{1}{7}, \frac{1}{21} = \frac{\text{H.C.F of the numerator}}{\text{L.C.M of the denominator}} = \frac{1}{210}$ ....(1).

L.C.M of $\frac{1}{2}, \frac{1}{3}, \frac{1}{5}, \frac{1}{7} = \frac{\text{L.C.M of numerator}}{\text{H.C.F of the denominator}} = \frac{1}{1} = 1$....(2) . Equation (2) > Equation (1).

Therefore column II > column I. **Ans (2)**

12.	$4\log_2 4 \times \log_3 9$	log16

Sol: $\frac{4\log 4}{\log 2} \times \frac{\log 9}{\log 3} = \frac{4 \times 2\log 2}{\log 2} \times \frac{2\log 3}{\log 3}$ = 16. Hence, column I > column II. **Ans (1)**

13. If 3 typists type 216 pages in 4, 9 and 6 hours respectively, then all the typists typing together can type how many pages in 5 hours ?

(1) 250 pages (2) 170 pages

(3) 570 pages (4) 314 pages

Sol: First typist types 216 pages in 4 hours. He can type 54 pages in one hour.
Second typist types 216 pages in 9 hours. He can type 24 pages in one hour.
Third typist types 216 pages in 6 hours. He can type 36 pages in one hour.
Total question typed by all the three typists in one hour = 54 + 24 + 36 = 114.
Hence, they can type 114 × 5 = 570 pages in 5 hours. **Ans (3)**

14. If the speed is increased by 6 kmph, then the time taken to cover a certain distance is reduced by 4 hours, and if the speed is reduced by 4 kmph then the time taken is increased by 6 hours. The distance travelled will be :
(1) 144 kms. (2) 300 kms
(3) 200 kms. (4) None of the above

Sol: Let, the speed be S kmph, the distance be D and the time taken be t hours.

Given $\frac{D}{S+6} = t-4$ ....(1), $\frac{D}{S-4} = t+6$ .....(2). Also D = St ....(3).

$\Rightarrow$ Substituting equation (3) in equation (1) :
$\Rightarrow$ St = (S + 6)(t – 4) $\Rightarrow$ St = (St – 4S + 6t – 24) $\Rightarrow$ 24 = 6t – 4S ....(4)
Substituting equation (3) in equation (2)
$\Rightarrow$ St = (St + 6S – 4t – 24) $\Rightarrow$ 24 = 6S – 4t ....(5)
$\Rightarrow$ 12 = 3t – 2S and 12 = 3S – 2t.
$\Rightarrow$ 60 = 5S $\Rightarrow$ S = 12 kmph and t = 12 hours. **Ans.(1)**

End of section 3

English Usage + Reading Comprehension

Directions for Q.1 to 40 : *Read the following passage carefully and answer the questions that follow :*

The Reading Comprehension section contained two passages. The length of these passages was half a page and the questions were direct and easy to crack.

The first passage was about "Conjugal Families". It also emphasized on the pros and cons of Industrialisation, joint and nuclear family systems, etc. The passage took care of 5/6 questions.

The second passage was a comparison between "Managers and leaders". This passage had 5 questions to crack and was of 12-15 lines.

In the English Usage section, there was a mix of questions as :

Synonyms, antonyms, fill up the blanks, analogies/relationships, questions on grammatical errors and a set of question that had one statement and four options, out of which students were to choose the statement that gave the best conclusion.

The synonyms based questions were :
1. Diplomatically (Ans - tactfully)

The antonyms based questions were:
1. Obdurate (Ans - flexible)

Analogies/Relationship based questions were :
1. Frog : tadpole

Ans. Butterfly : caterpillar

2. Stapler : stationary

Ans. Bullet : armoury

3. Puny : mammoth

Ans. Stable : unstable

End of section 4

Logical Reasoning

Directions for Q.1 to 4 : Read the following information carefully and answer the questions that follow.

Three adjacent sides of a cube are painted red. It is cut into 4 equal cuboids. Then each of the remaining sides is painted green. Again each of the cuboids is cut into 4 pieces.

1. How many cubes are painted with 3 sides red ?
   (1) 1 (2) 2
   (3) 3 (4) 4

Sol: Ans.(1)

2. How many cubes are painted with 3 sides green ?
   (1) 1 (2) 2
   (3) 3 (4) 4

Sol: Ans.(1)

3. How many cubes are painted with 2 sides green ?
   (1) 5 (2) 4
   (3) 8 (4) 6

Sol: Ans.(3)

4. The sum of the digits of a two digit number is 8. If the number is decreased by 18, then the numbers interchange their places. The number is :
   (1) 53 (2) 56
   (3) 44 (4) 64

Sol: Let the number be xy. So, the number will be 10x+y.
As per the given conditions the $x + y = 8$ and $10x + y - 18 = 10y + x$
$\Rightarrow 9x - 9y = 18 \Rightarrow x - y = 2$
$\Rightarrow x - y = 2$
$\Rightarrow x + y = 8 \Rightarrow x = 5$ and $y = 3$. So required answer = 53 **Ans.(1)**

Directions for Q. 5 to 7 : Given below is a series of alphabets. Read the questions carefully and choose the correct option

A N B O C P D Q E R F S G T H U I V J W K X L Y M

5. The alphabet 18th from the right of the series is :
   (1) P (2) Q
   (3) R (4) G

Sol: Ans (2)

6. The alphabet 7th from the right is :
   (1) K (2) M
   (3) L (4) J

Sol: Ans (3)

7. Which alphabet comes 3rd from the left ?
   (1) L (2) W
   (3) B (4) P

Sol: Ans (3)

End of section 5

Overall Analysis & Expected Cut-Offs

The test can be rated as a easy to moderate one. The question based on DI were direct. The RC section was easy to crack with just two short passages.

The mathematical aptitude section was easy to manage. The LR section was moderate .

Thus we expect that the average attempts should have been in the range of 100+ and the minimum score of 70 - 80 should be a good score to get a call from BIM.