

# QUANTITATIVE APTITUDE

Questions asked in IDBI Examination, 2005

**Qs. 1-4.** In the following number series only one number is *wrong*. Find out the *wrong* number.

**1.** 14 13 22 55 212 1035

- (1) 55 (2) 13 (3) 212  
(4) 22 (5) None of these

**2.** 217 224 213 226 210 228

- (1) 213 (2) 226 (3) 210  
(4) 228 (5) None of these

**3.** 153 495 712 837 901 928

- (1) 712 (2) 837 (3) 901  
(4) 928 (5) None of these

**4.** 488 245 124 64 35 20.25

- (1) 124 (2) 64 (3) 245  
(4) 35 (5) None of these

**5.** A 250 metres long train crosses a platform in 10 seconds. What is the speed of the train?

- (1) 25 metres/second  
(2) 20 metres/second  
(3) 22 metres/second  
(4) Cannot be determined  
(5) None of these

**6.** The compound interest earned on an amount of Rs 15,000 at the end of 3 years is Rs 3895.68. What is the rate of interest p.c.p.a.?

- (1) 8 (2) 6.5 (3) 5  
(4) 12 (5) None of these

**7.** 16 men can complete a piece of work in 8 days. 20 women take 16 days to complete the same piece of work. 12 men and 10 women work together for 6 days. How many more days would 10 women alone require to complete the remaining piece of work?

- (1) 8 (2) 10 (3) 4  
(4) 16 (5) None of these

**8.** In how many different ways can the letters of the word 'FORMULATE' be arranged?

- (1) 81,000 (2) 40,320 (3) 3,62,880  
(4) 1,53,420 (5) None of these

**9.** The frogs in a pond increase by 10% at the end of every year. If at the start of the year 2004, there were 2,14,000 frogs in the pond, then what would be the number of frogs in the pond by the end of the year 2006?

- (1) 2,35,400 (2) 2,68,940 (3) 2,64,328  
(4) 2,98,644 (5) None of these

**Q. 10-14.** In each of these questions, two equations are given. You have to solve these equations and find out the values of  $x$  and  $y$  and

Give answer

If

(1)  $x < y$

(2)  $x > y$

(3)  $x \leq y$

(4)  $x \geq y$

(5)  $x = y$  or if the relationship cannot be established

**10.** I.  $12x^2 = 6x$

II.  $y + x^2 = 0.45$

**11.** I.  $x = \sqrt{6.25}$

II.  $y^2 = 6.25$

**12.** I.  $20x^2 - 33x + 7 = 0$

II.  $y = \sqrt{0.0625}$

**13.** I.  $6x^2 + 28x + 16 = 0$

II.  $14y^2 + 15y + 4 = 0$

**14.** I.  $4x + 3y = 16$

II.  $2x + 4y = 13$

**15.** On children's day sweets were to be equally distributed amongst 540 children. But on that particular day, 120 children were absent. Thus, each child got 4 sweets extra. How many sweets was each child originally supposed to get?

- (1) 18 (2) 25 (3) 14  
(4) 20 (5) None of these

**16.** A boat covers a distance of 24 kms in 10 hours downstream. To cover the same distance upstream, the boat takes two hours longer. What is the speed of the boat in still waters?

- (1) 2 km/hr (2) 2.8 km/hr (3) 4 km/hr  
(4) 4.2 km/hr (5) None of these

**17.** The circumference of a circle is equal to the perimeter of a square whose area is 121 sq cms. What is the area of the circle?

- (1) 44 sq cms (2) 154 sq cms (3) 121 sq cms  
(4) Cannot be determined (5) None of these

**18.** Sonia started a business by investing Rs 60,000. Six months later Vivek joined her by investing Rs 1,40,000. After one year Kirti joined them by investing Rs 1,20,000. At the end of two years from the commencement of the business,

they earn a profit of Rs 4,50,000. What is Vivek's share in the profit?

- (1) Rs 1,40,000 (2) Rs 1,98,500 (3) Rs 2,15,000  
(4) Rs 2,10,000 (5) None of these

**19.** An urn contains 4 green and 7 blue marbles. If three marbles are picked at random, what is the probability that only two of them are blue?

- (1)  $\frac{49}{55}$  (2)  $\frac{7}{11}$  (3)  $\frac{28}{55}$   
(4)  $\frac{11}{28}$  (5) None of these

**Qs. 20-24.** What should come in place of the question mark (?) in the following questions?

**20.**  $1\frac{3}{4} + 1\frac{5}{8} - 2\frac{4}{5} + \frac{1}{2} = ?$

- (1)  $2\frac{7}{40}$  (2)  $1\frac{7}{40}$  (3)  $2\frac{3}{40}$   
(4)  $1\frac{3}{40}$  (5) None of these

**21.**  $14 \times 18.6 \div 12 + 19.3 = ?$

- (1) 41 (2) 33.5 (3) 291.9  
(4) 8.32 (5) None of these

**22.**  $8^{4.2} \times 64^{2.1} \times 7^{8.4} \times 56^{3.5} = 56^?$

- (1) 18.2 (2) 9.8 (3) 11.9  
(4) 12.6 (5) None of these

**23.**  $(4)^2 + (3)^2 = \sqrt{?}$

- (1) 25 (2) 5 (3) 125  
(4) 425 (5) None of these

**24.** 53% of 120 + 25% of 862 = ?% of 500

- (1) 42.50 (2) 55.82 (3) 63.68  
(4) 38.89 (5) None of these

**Qs. 25-29.** Each of the questions below consists of a question and two statements numbered I and II are given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer:

- (1) if the data in Statement I alone is sufficient to answer the question, while the data in Statement II alone is not sufficient to answer the question.
- (2) if the data in statement II alone is sufficient to answer the question, while the data in Statement I alone is not sufficient to answer the question.
- (3) if the data in Statement I alone or in Statement II alone is sufficient to answer the question.
- (4) if the data in both the Statements I and II are not sufficient to answer the question.
- (5) if the data in both the Statements I and II together are necessary to answer the question.

**25.** What is the area of the square?

- I. Measure of the diagonal of the square is 80 cms.
- II. The perimeter of the square is equal to the

circumference of a circle.

**26.** What is Asha's present salary?

- I. Her salary increases every year by 15 per cent.
- II. She joined the organization seven years ago.

**27.** What is the rate of interest p.c.p.a.?

- I. The compound interest accrued on an amount of Rs 1,500 at the end of 2 years is Rs 660.
- II. An amount doubles itself in 5 years with simple interest.

**28.** What is the total staff strength of the organization?

- I. 75% of the staff consists of male employees.
- II. The ratio of female to male employees in the organization is 1 : 3 respectively.

**29.** What is the two digit number?

- I. The sum of the two digits of the number is 8.
- II. The number obtained by interchanging the two digits of the number is lesser than the original number by 18.

**Qs. 30-34.** Study the table carefully to answer the following questions:

Percentage of marks obtained by six students in six different subjects

Subject Student	English (Out of 100)	Maths (Out of 150)	Social Studies (Out of 120)	Science (Out of 150)	Hindi (Out of 80)	Marathi (Out of 50)
A	52	84	65	76	65	60
B	63	70	85	56	75	64
C	80	66	70	64	60	50
D	71	78	60	80	70	60
E	77	80	65	54	55	74
F	67	75	55	86	60	76

**30.** What are the approximate average marks obtained by all students in Hindi?

- (1) 45 (2) 51 (3) 62  
(4) 59 (5) 66

**31.** What is the respective ratio of marks obtained by students A, B and C together in Maths to the marks obtained by students D, E and F together in Marathi?

- (1) 7 : 22 (2) 23 : 7 (3) 23 : 4  
(4) 4 : 21 (5) None of these

**32.** Which student has scored the second highest in all the subjects together?

- (1) D (2) F (3) A  
(4) B (5) None of these

**33.** In order to pass the exam, if the students need minimum 75 marks in Social Studies and minimum 85 marks in Science, how many students have passed the exam?

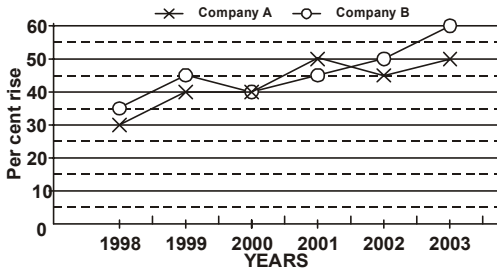
- (1) None (2) One (3) Two  
(4) Three (5) None of these

**34.** What is the percentage of marks obtained by B in all the subjects together? (rounded off to two digits after decimal)

- (1) 68.62 (2) 66.83 (3) 69.24  
(4) 64.84 (5) None of these

Qs. 35-38. Study the graph carefully to answer the following questions:

PER CENT RISE IN PROFIT OF TWO COMPANIES OVER THE YEARS



35. If the profit of Company B in the year 2003 was Rs 7,83,000, then what was its profit in the year 2000?

- (1) Rs 2,25,000 (2) 3,75,000  
(3) Rs 4,16,000 (4) Rs 4,05,000  
(5) None of these

36. What is the approximate average per cent profit of Company B over the years?

- (1) 58 (2) 40 (3) 53 (4) 62 (5) 46

37. If the profit of Company A in the year 1999 was Rs 1.5 lakhs, what was its profit in the year 2001?

- (1) Rs 2.65 lakhs (2) Rs 4.25 lakhs  
(3) Rs 3.15 lakhs (4) Rs 4.90 lakhs  
(5) None of these

38. Which of the following statements is definitely true?

- (1) Company B has made more profit than Company A in the year 2003.  
(2) Profit made by Company A and Company B in the year 2000 is the same.  
(3) Increase in per cent rise in profit of Company B in the year 1999 from the previous year is 10 per cent.  
(4) Company A has made lowest profit in the year 1999.  
(5) Profit of Company A remained the same in the year 1999 and 2000.

39. What is the per cent increase in per cent rise in profit of Company A in the year 2001 from the previous year?

- (1) 15 (2) 20 (3) 10  
(4) 25 (5) None of these

Qs. 40-44. Study the table carefully to answer the following questions:

Number (in crores) of ball bearings manufactured by Six Companies over the years

Year	1999	2000	2001	2002	2003	2004
Company						
P	48.2	28.3	29.4	36.6	21.8	53.0
Q	51.6	36.5	43.5	18.1	23.5	35.7
R	32.3	47.9	25.6	38.7	50.9	42.6
S	27.9	51.5	33.5	43.6	44.7	26.5
T	28.3	41.5	50.8	24.1	30.4	36.2
U	45.5	26.2	44.9	40.5	38.7	41.5

40. What is the respective ratio of number of ball bearing manufactured by Company R in the year 1999 to those manufactured by Company T in the year 2003?

- (1) 16 : 17 (2) 17 : 16  
(3) 23 : 21 (4) 21 : 23  
(5) None of these

41. What is the approximate per cent increase in the number of ball bearings manufactured by Company P in the year 2004, from the previous year?

- (1) 143 (2) 157 (3) 59  
(4) 122 (5) 94

42. What is the average number of ball bearings manufactured by all companies together in the year 2002?

- (1) 3360000 (2) 336000000  
(3) 3360000000 (4) 33600000  
(5) None of these

43. Number of ball bearings manufactured by Company Q in the year 2000 is approximately what per cent of the total number of ball bearings manufactured by it in all the years together?

- (1) 24 (2) 32 (3) 11  
(4) 29 (5) 17

44. How many more ball bearings need to be manufactured by Company S in the year 2004 to make the ratio between the number of ball bearings manufactured by Company S to those manufactured by Company U in the year 2004, 54 : 83 respectively?

- (1) 8000000 (2) 2500000 (3) 3400000  
(4) 5000000 (5) None of these

Qs. 45-49. Study the pie-chart carefully to answer the following questions:

Percentage of students studying different specialisations in a management institute

Total number of students = 4500



Ratio of Men to Women in each Specialisation

Specialisation	Men	Women
HR	2	3
Marketing	7	5
International Business	5	1
Banking	17	10
IT	1	2
Finance	5	4

45. What is the total number of men studying in the Institute?

- (1) 1665 (2) 2421 (3) 2025  
(4) 1954 (5) None of these

46. Number of women studying Marketing are approximately what per cent of the total number of students in the Institute?

- (1) 5 (2) 12 (3) 15  
(4) 7 (5) 2

47. What is the total number of men studying Banking and International Business?

- (1) 1125 (2) 297 (3) 1015  
(4) 594 (5) None of these

48. Number of women studying Finance are what per

cent of the number of men studying the same?

- (1) 80 (2) 65 (3) 95  
(4) 70 (5) None of these

49. In which specialisation do the maximum number of women study?

- (1) HR (2) IT (3) Marketing  
(4) Finance (5) None of these

### ANSWERS AND EXPLANATIONS

1. (1)  $14 \times 1 - 1^2 = 13$ ,  $13 \times 2 - 2^2 = 22$ ,  $22 \times 3 - 3^2 = 57$ ,  
 $57 \times 4 - 4^2 = 212$ ,  $212 \times 5 - 5^2 = 1035$   
55 is wrong, it should be 57
2. (3) By adding and subtracting alternatively 7, 11, 13, 17, 19 (all prime nos.) we get the next term.  
In place of 210, it should be 209
3. (5) Add  $7^3$ ,  $6^3$ ,  $5^3$ ,  $4^3$ ,  $3^3$  to get the next term  
495 is wrong, it should be 496
4. (4) 488, 245, 124, 64, 35, 20.25  
 $\frac{488+2}{2} = 245$ ,  $\frac{245+3}{2} = 124$ ,  $\frac{124+4}{2} = 64$ ,  
 $\frac{64+5}{2} = 34.5$ ,  $\frac{34.5+6}{2} = \frac{40.5}{2} = 20.25$   
 $\therefore$  In place of 35, it should be 34.5
5. (4) Length of platform is not given  
Speed of train  
$$= \frac{\text{Length of train} + \text{Length of platform}}{\text{Time taken}}$$
6. (1) C.I. =  $P \left[ \left( 1 + \frac{R}{100} \right)^n - 1 \right]$   
 $\therefore 3895.68 = 15000 \left[ \left( 1 + \frac{R}{100} \right)^3 - 1 \right] \Rightarrow R = 8$
7. (1) Work done by 16 men in 8 days  
= work done by 20 women in 16 days  
 $\Rightarrow 16 \times 8M = 20 \times 16W \Rightarrow 2M = 5W$   
 $12M + 10W = \frac{5}{2} \times 12 + 10 = 40 W$   
 $20 \times 16 = 320$  women can do work in 1 day  
40 women can do work in  $\frac{320}{40} = 8$  days  
40 women can do work in 6 days  $= \frac{6}{8} = \frac{3}{4}$   
Remaining work  $= \frac{1}{4}$   

work	women	days
1	20	16
$\frac{1}{4}$	10	x

Less work less days

$$\left. \begin{array}{l} 1 : \frac{1}{4} \\ \text{Less women more days} \\ 10 : 20 \end{array} \right\} 16 : x$$

$$\Rightarrow x = 16 \times \frac{1}{4} \times \frac{20}{10} = 8$$

8. (3) There are 9 different letters  
 $\therefore$  No. of ways =  $9! = 362880$
9. (5) Reqd no. of frogs =  $214000 \left( 1 + \frac{10}{100} \right)^3 = 284834$
10. (4)  $12x^2 - 6x = 0 \Rightarrow 6x(2x - 1) = 0 \Rightarrow x = 0, \frac{1}{2}$   
 $y = 0.45 - x^2$ , when  $x = 0$ ,  $y = x$   
If  $x = \frac{1}{2} = .5$ ,  $y = .20$   
 $x \geq y$
11. (4)  $x = \sqrt{6.25} = 2.5$ ,  $y^2 = 6.25$   
 $\therefore y = \pm \sqrt{6.25} = \pm 2.5$   
 $x \geq y$
12. (4)  $20x^2 - 33x + 7 = 0 \Rightarrow 20x^2 - 28x - 5x + 7 = 0$   
 $\Rightarrow (4x - 1)(5x - 7) = 0 \Rightarrow x = \frac{1}{4}, \frac{7}{5}$  or .25, 1.4,  
 $y = \sqrt{0.0625} = .25$   
 $x \geq y$
13. (1)  $6x^2 + 28x + 16 = 0 \Rightarrow 2(3x + 2)(x + 4) = 0$   
 $\Rightarrow x = -\frac{2}{3}, -4$   
 $14y^2 + 15y + 4 = 0 \Rightarrow y = -\frac{1}{2}, -\frac{4}{7}$   
 $\therefore x < y$
14. (2)  $4x + 3y = 16$ ,  $2x + 4y = 13$   
Solving the eqns, we get  
 $x = \frac{5}{2}$ ,  $y = 2$   
 $\therefore x > y$
15. (3) Children present =  $540 - 120 = 420$   
Let the no. of sweets got by each child be x  
 $\therefore$  Total sweets =  $540x = 420(x + 4) \Rightarrow x = 14$
16. (5) Let the speed of the boat in still water be x km/hr  
and that of stream be y km/hr  
Downstream, speed of boat =  $x + y$  km/hr  
Upstream, speed of boat =  $x - y$  km/hr  
A.T.S.  $x + y = \frac{24}{10}$ ,  $x - y = \frac{24}{12}$

# OBJECTIVE-TYPE QUESTIONS

On solving, we get  $x = 2.2$  km/hr

17. (2)  $2\pi r = 4 \times 11 \Rightarrow 2 \times \frac{22}{7} \times r = 44 \Rightarrow r = 7$  cm

$\therefore$  Side of a square  $= \sqrt{121} = 11$  cm

Area of a circle  $= \frac{22}{7} \times 7^2 = 154$  cm

18. (4) Ratio of profits = Ratio of the investments by Sonia, Vivek and Kirti

$= 60000 \times 24 : 140000 \times 18 : 120000 \times 12 = 4 : 7 : 4$

$\therefore$  Vivek's share  $= \frac{7}{4+7+4} \times 450000 = \text{Rs } 210000$

19. (3) Reqd prob  $= \frac{{}^4C_1 \times {}^7C_2}{{}^{11}C_3} = \frac{7 \times 6}{2} \times 4 \times \frac{3 \times 2 \times 1}{11 \times 10 \times 9}$   
 $= \frac{28}{55}$

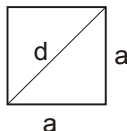
20. (4) 21. (1)

22. (3)  $8^{4.2} \times (8)^{2 \times 2.1} \times 7^{8.4} \times (8^{3.5} \times 7^{3.5}) = (8^{4.2+4.2+3.5} \times 7^{8.4+3.5})$   
 $= 56^{11.9}$

23. (5)  $4^2 + 3^2 = 25 = \sqrt{x} \Rightarrow x = 25^2 = 625$

24. (2)  $\frac{53}{100} \times 120 + \frac{25}{100} \times 862 = \frac{x}{100} \times 500 \Rightarrow x = 55.82$

25. (1)  $2a^2 = d^2 = 80^2 \Rightarrow a^2 = \frac{80^2}{2} = \text{Area}$



26. (4) 27. (3) 28. (4) 29. (5)

30. (2)  $385 \times \frac{80}{100} \times \frac{1}{6} = 51$

31. (5) Ratio  $= \frac{(84+70+66) \times \frac{150}{100}}{(60+74+76) \times \frac{50}{100}} = \frac{22}{7}$

32. (2) 33. (3) A and C

34. (1)  $\frac{446}{650} \times 100 = 68.62$  Total marks got by B = 63  
 $+ 70 \times \frac{150}{100} + 85 \times \frac{120}{100}$   
 $+ 56 \times \frac{150}{100} + 75 \times \frac{80}{100}$   
 $+ 64 \times \frac{50}{100} = 446$

35. (1)  $783000 = x \times \frac{145}{100} \times \frac{150}{100} \times \frac{160}{100} \Rightarrow x = \text{Rs } 225000$

36. (5)

37. (3)  $1.5 \times \frac{140}{100} \times \frac{150}{100} = 3.15$

38. (3) 39. (4)  $\frac{50-40}{40} \times 100 = 25$

40. (2) 41. (1)

42. (2)  $\frac{201.6}{6} \times 100,00,000 = 336000000$

43. (5) Reqd%  $= \frac{36.5}{208.9} \times 100 = 17$  (approx)

44. (4) Ratio  $= \frac{(26.5+x)\text{crore}}{41.5\text{ crore}} = \frac{54}{83} \Rightarrow x = .5\text{ crore}$   
 $= 5000000$

45. (2) Men studying in HR  $= 4500 \times \frac{22}{100} \times \frac{2}{5} = 396$

Men studying in Marketing	= 420
Men studying in I.B.	= 675
Men studying in Banking	= 340
Men studying in I.T.	= 315
Men studying in Finance	= 275
Total no.	= 2421

46. (4)  $\frac{[4500 \times \frac{16}{100} \times \frac{5}{12}]}{4500} \times 100 = 7$  approx

47. (3)  $675 + 340 = 1015$  48. (1)  $\frac{4}{5} \times 100 = 80$

49. (2) Ratio of men to women in I.T. = 1 : 2

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