

Bank Special Math & Reasoning Assignment-III

> REASONING

Directions (Q. 1-7): Study the following information carefully and answer the given questions.

P, Q, R, S, W, V, T and U are eight family members sitting around a circular table, facing the centre, but not necessarily in the same order. Each member has a different hobby, viz Watching TV, Swimming, Cooking, Singing, Reading, Dancing, Walking and Listening to Music, but not necessarily in the same order.

P is the head of his family and sits third to the left of wife Q. T has two sisters and sits second to the right of his grandfather, whose hobby is Watching TV. S sits on the immediate left of her brother, who sits in front of his father. V sits between the person who likes Swimming and the person who likes Singing. Her hobby is Reading. Q has two sons and one of the sons' hobby is Singing. U sits in front of her mother-in-law, whose hobby is Music. W's son's hobby is Walking. R and his sister-in-law like Singing and Cooking respectively.

- How is W related to P?**
(a) Brother (b) Father (c) Daughter (d) Son
(e) None of these
- How many couples are there in the family?**
(a) One (b) Two (c) Three
(d) Either (b) or (c) (e) None of these
- Who among the following sits third to the left of W?**
(a) Q (b) R (c) T (d) S
(e) None of these
- Which of the following pairs of hobbies are a couple's hobbies?**
(a) Cooking-Dancing (b) Music - Singing
(c) Watching TV - Reading
(d) Swimming- Cooking (e) None of these
- What is the hobby of S?**
(a) Cooking (b) Singing (c) Dancing
(d) Reading (e) None of these
- Who among the following sits in front of R and what is the relationship between them?**
(a) Q, who is brother of R
(b) P, who is daughter of R
(c) Q, who is mother of R
(d) P, who is father of R
(e) None of these
- Which of the following statements is true?**
(a) P is grandfather of V and sits third to the right of V
(b) W is husband of U and sits on the immediate right of R

- (c) T is sister of V.
(d) All are true
(e) None of these

Directions (Q. 8-10): Each of the questions below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the questions.

- Who among Sunita, Naina, Veena and Meena is the youngest?**
I. Veena is younger than Meena but older than Sunita and Naina.
II. Meena is older than Naina and Veena but not older than Sunita.
III. Sunita is older than Naina but not older than Veena
(a) Only I and II (b) Only II and III
(c) Only II and III (d) Only I and III
(e) None of these
- How is the woman in the photograph related to Suraj?**
I. Pointing to the photograph, Suraj said, "She is mother of my father's only granddaughter".
II. Pointing to the photograph, Suraj said, "She is the only daughter-in-law of my mother."
III. Suraj has no siblings but has a daughter.
(a) Only I (b) Only II
(c) Either I or II (d) Only II and III
(e) None of these
- Among five friends Aman, Neelam, Vidya, Rani and Sapra, whose salary is the highest?**
I. Vidya's basic salary is ? 100 more than Rani's.
II. Rani's basic salary is more than those of Aman and Neelam but not more than that of Sapra.
III. Neelam's salary is more than that of Aman.
(a) Only II and III (b) All I, II and III
(c) Only I and III (d) Only II
(e) None of these
- The management of a company sent out an email, "...Do catch the legend playing his last international cricket match... being telecast live in our office cafeterias. Use your discretion to balance work and passion."**
Which of the following inferences can be drawn from the above statement? (An inference is something which is not directly stated but can be inferred from the given facts.)

- (a) The cafeterias will have quite a number of employes watching the match.
 (b) The cafeterias will be packed with employees.
 (c) The bosses will be there in the cafeteria but no; 3 subordinates.
 (d) The legend will reward those employees who watch the match.
 (e) None of these
12. According to Gartner, global PC shipments declined 8.6% in the third quarter of 2013, marking the sixth consecutive quarter of fall. Which of the following can be a probable cause(s) of the above phenomenon?
 (A) Computer chips are now being used in fewer walks of life.
 (B) There has been a shift in consumer preference from PCs to tablets for daily content consumption.
 (C) Internet-of-things will drive the next wave of computing.
 (a) Only B (b) None (c) Only B and C
 (d) Only A and C (e) Only C
13. The higher education system in the country is dealing with an acute faculty shortage. Which of the following can be a course(s) of action to tackle the situation?
 (A) There should be an improvement in the pay and perks of the faculty.
 (B) The faculty should be exposed to the corporate world.
 (C) More management institutes should be opened across the nation.
 (a) Only A and C (b) None (c) Only A
 (d) Only B (e) None of these
14. It would not be proper for the government to bestow the Bharat Ratna on Dhyhan Chand nearly 34 years after he passed away. Which of the following substantially weakens the argument given in the above statement?
 (a) Tendulkar was not considered for the Bharat Ratna in 2011 or 2012 because he was still playing.
 (b) Sardar Patel died in 1950 but he was given the Bharat Ratna in 1991.
 (c) There is a complete lack of transparency in the system of selecting the winners.
 (d) The Narasimha Rao-led Congress government in 1991 awarded the Bharat Ratna to the late Rajiv Gandhi, who had passed away a few months earlier.
 (e) None of these
15. "When you have support on the ground, it shows up in voting. There is a difference between a spontaneous crowd and a rented one."
 -Apolitical leader
 Which of the following assumptions is implicit in the above statement? (An assumption is something supposed or taken for granted.)
 (a) Rallies are hardly relevant in this day of tweets and 24x7 news.
 (b) Great public meetings are no longer the barometers of public opinion they once used to be.
 (c) The Left parties are past masters at organising crowds, but this rarely translates into electoral victory except in their old pockets of strength.
 (d) The crowd that you see at rallies is often gathered by hiring supporters.
 (e) None of these
- Directions (Q. 16-20):** In each of the questions below are given four statements followed by four conclusions numbered I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.
16. **Statements:** Some jeeps are trains.
 All trains are buses.
 Some boats are jeeps.
 Some scooters are buses.
Conclusions: I. Some scooters are trains.
 II. Some boats are buses.
 III. Some jeeps are scooters.
 IV. All buses are trains.
 (a) None follows (b) Only IV follows
 (c) Only II and IV follow (d) Only III follows
 (e) None of these
17. **Statements :** All teachers are engineers.
 All engineers are cooks.
 Some cooks are merchants.
 All merchants are poets.
Conclusions: I. Some cooks are teachers.
 II. Some merchants are engineers.
 III. All cooks are engineers.
 IV. Some cooks are poets.
 (a) None follows (b) Only I follows
 (c) Only II and IV follow (d) Only I and IV follow
 (e) None of these:
18. **Statements : Some tools are hammers.**
 Some hammers are nails.
 All nails are screws.
 All screws are nuts.
Conclusions : I. All nuts are screws.
 II. Some nuts are tools.
 III. Some hammers are screws.
 IV. All nuts are nails.
 (a) All follow (b) Only I follows
 (c) Only II follows (d) Only II and III follow
 (e) None of these
19. **Statements : All pens are bags.**
 All bags are glasses.
 No glass is a spoon.
 All spoons are books.
Conclusions : I. Some glasses are pens.
 II. Some books are bags.
 III. No spoon is a pen.
 IV. No bag is a book.

- (a) Only II and III follow
 (b) Only I, III and either II or IV follow
 (c) Either II or IV follows
 (d) All follow
 (e) None of these

20. Statements : All petals are flowers.

All thorns are flowers.
 Some leaves are thorns.
 Some stems are flowers.

Conclusions : I. Some petals are leaves.
 II. All leaves are flowers.
 III. Some stems are petals.
 IV. No petal is a leaf.

- (a) None follows (b) Only II follows
 (c) Only II and either I or IV follow
 (d) Only either I or IV follows
 (e) None of these

Directions (Q. 21-25): Study the following information carefully to answer the given questions.

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of the input and its rearrangement.

Input: site 72 easy owl 28 11 pull 81 40 cut
 Step I: easy site 72 owl 28 pull 81 40 cut 11
 Step II: easy owl site 72 pull 81 40 cut 11 28
 Step III: easy owl cut site 72 pull 81 11 28 40
 Step IV: easy owl cut pull site 81 11 28 40 72
 Step V: easy owl cut pull site 11 28 40 72 81

Step V is the last step of the above input. As per the rules followed in the above steps, find out in each of the following questions, the appropriate step for the given input below and answer the questions based on it.

Input: curtail 53 vitiate 49 33 artifice 45 aptitude 23 ice 69 entourage bevy

- 21. How many steps will be required to complete the arrangement of the above input?**
 (a) Four (b) Five (c) Six (d) Seven
 (e) None of these
- 22. What will be the position of '69' in Step IV?**
 (a) 9th from the left (b) Fifth from the right
 (c) Extreme left (d) Extreme right
 (e) None of these
- 23. Which step would be the following output? 'aptitude artifice entourage curtail 53 vitiate 49 ice 69 bevy 23 33 45'**
 (a) IV (b) V (c) VI (d) III (e) VII
- 24. Which word/number would be at the 9th position from the right end in Step V?**
 (a) curtail (b) vitiate (c) bevy (d) 53 (e) 49
- 25. Which of the following steps would be the last step bis one?**
 (a) V (b) VI (c) VII (d) IV
 (e) None of these
- 26. Y is to the west of X and north of W. R is to the southeast of Y and to the northwest of Q, who is to the east of W. R is in which direction of W?**
 (a) South (b) West (c) Northeast

- (d) Can't be determined (e) None of these

27. Among Q, P, L, M and N, each scores a different marks. P scores more than only L and N and less than M and O Who scores the highest marks?

- (a) Q (b) M (c) N
 (d) Data inadequate (e) None of these

Directions (Q. 28-29): Study the following information carefully and answer the given questions.

R 5 8 E % M F 4 J I U @ H 2 © 9 T 1 6 * W 3 P #

28. What will come in place of question mark (?) in the following series based on the above arrangement ?

8%E FJ4 UH@ ?

- (a) © 9 T (b) © T 9 (c) 9 T © (d) © 2 T
 (e) None of these

29. Which of the following is fifth to the left of the eighteenth from the left end of the above arrangement?

- (a) @ (b) © (c) H (d) 2
 (e) None of these

Directions (Q. 30-34): Study the following information* carefully and answer the given questions.

A, Z, B, C, D, W, X and Y are eight friends sitting around a square table, two on each side. All of them are facing away from the centre and each is opposite another. There are three female members and they are not seated next to one another.

X sits between D and Z. Y is a female member who sits second to the left of X. Z is not a female member but sits opposite A, who is a female. C sits third to the left of W and is not a male member.

- 30. Who among the following sits on the immediate left of Z?**
 (a) W (b) X (c) Y (d) B
 (e) None of these
- 31. Which of the following statements is true about W and X?**
 (a) Both are opposite each other.
 (b) Both are males.
 (c) W is a female but X is a male.
 (d) Both are females.
 (e) None of these
- 32. Which of the following groups includes only females?**
 (a) YAW (b) ACB (c) XYZ (d) ACY
 (e) None of these
- 33. Who among the following is sitting between B and W?**
 (a) A (b) C and D (c) C (d) A and D
 (e) None of these
- 34. Who among the following sits third to the right of Z?**
 (a) A (b) C (c) W (d) D
 (e) None of these
- 35. How many such pairs of letters are there in the word UBIQUITOUS each of which has as many**

letters between them in the word as in the English alphabetical series?

- (a) None (b) One (c) Two (d) Three
(e) None of these

> MATHS

36. The number of students studying Arts, Commerce and Science in an Institute in the year 2002 were in the ratio 8 : 5 : 6 respectively. If the number in the three disciplines increased by 30%, 20% and 60% respectively in the year 2003, what was the new respective ratio?

- (a) 9 : 7 : 8 (b) 26 : 15 : 24
(c) 27 : 13 : 12 (d) Cannot be determined
(e) None of these

37. In how many different ways can the letters of the word 'HOUSING' be rearranged?

- (a) 120 (b) 720 (c) 2150 (d) 2520
(e) None of these

38. A boy walks 14 metres to cross a square field diagonally. What is the area of the square?

- (a) 78 sq mtrs (b) 120 sq mtrs
(c) 118 sq mtrs (d) Cannot be determined
(e) None of these

39. 8 women can complete a work in 10 days and 10 children take 16 days to complete the same work. How many days will 10 women and 12 children take to complete the work?

- (a) 5 (b) 7 (c) 3
(d) Cannot be determined (e) None of these

40. The difference between the compound interest and the simple interest accrued on an amount of Rs 2,500 in 3 years was Rs 153.86. What was the rate of interest p.c.p.a.?

- (a) 15 (b) 12 (c) 14
(d) Cannot be determined (e) None of these

Directions (Q. 41-45): In each of these questions a number series is given. Only one number is wrong in each series. You have to find out the wrong number.

41. 289 288 279 254 205 128 3

- (a) 288 (b) 254 (c) 205 (d) 128
(e) None of these

42. 2 10.5 53 265.5 1327.5 6640.5

- (a) 10.5 (b) 1327.5 (c) 6640.5 (d) 265.5
(e) None of these

43. 16 18 32 52 86 138 224

- (a) 52 (b) 86 (c) 138 (d) 18
(e) None of these

44. 6 35 173 689 2063 4125 4115

- (a) 689 (b) 35 (c) 4125 (d) 2063
(e) None of these

45. 4 5 18 81 385 2065

- (a) 385 (b) 18 (c) 2065 (d) 81
(e) None of these

Directions (Q. 46-50): Answer these questions based on the following information:

The average age of Ramesh, Sushant, Vijay, Neel, Amit and Rodney is 58 years. Amit and Vijay's total age is 124 years. Sushant is thrice Neel's age. The average age of Ramesh and Rodney is 52 years. Vijay is four years younger than Sushant. The ages of Ramesh and Rodney are in the ratio 29 : 23.

46. Who amongst the following is the youngest?

- (a) Rodney (b) Ramesh (c) Vijay (d) Neel
(e) Amit

47. What is the average age (in years) of Sushant, Neel, Vijay and Amit?

- (a) 173 (b) 61 (c) 57 (d) 48
(e) None of these

48. In how many years will Neel be exactly half of Vijay's present age?

- (a) 4 (b) 20 (c) 13 (d) 18
(e) None of these

49. What is the ratio of the ages of Amit and Neel?

- (a) 19 : 15 (b) 29 : 21 (c) 17 : 18 (d) 13 : 11
(e) None of these

50. How old is Vijay (in years)?

- (a) 82 (b) 66 (c) 58 (d) 74
(e) None of these

Directions (Q. 51-55): Each of these questions consists of a question followed by information in three statements. You have to study the question and the statements and decide that information in which of the statement(s) is/are necessary to answer the question.

51. How many people have opted for VRS from Company X?

I. 17% of males and 19% of females have opted for VRS.

II. The ratio of total male employees to female employees was 7 : 9.

III. The total number of employees before VRS was 8000.

- (a) Only I and II (b) III and either I or II
(c) Only I and II (d) All I, II and III
(e) Any two of the three

52. What is the distance covered by Ram?

I. The distance covered by Manish is 10 km, which is half of the distance covered by Leroy,

II. The distance covered by Ram is $\frac{3}{4}$ of the distance covered by Leroy.

covered by Leroy.

III. Leroy covers a distance of 20 km.

- (a) Only II (b) Only II and III
(c) Only I and II (d) II and either I or III
(e) Any two of the three

53. What is the speed of a train?

I. The train crosses a pole in 9 seconds.

II. The train crosses a platform in 30 seconds.

III. The length of the train in metres is 108.

- (a) Only I and III (b) Only II and III
(c) All I, II & III (d) Any two of the three
(e) Question cannot be answered even with the information in all three statements

54. What is the rate of interest p.c.p.a.?

- I. An amount of Rs 9,000 fetches simple interest of Rs. 5,400.
II. The amount fetches compound interest of Rs 1.560 in 2 years.
III. The amount doubles itself in five years through simple interest.
(a) Any one of the three (b) Only III

- (c) Only II (d) Only I
(e) Question cannot be answered even with the information in all three statements

55. What is the measure of the diagonal of a rectangle?

- I. Length of the rectangle is 9 metres.
II. Area of the rectangle is 72 sq metres.
III. Breadth of the rectangle is 8 metres.
(a) All I, II & III (b) Only I and III
(c) Any two of the three (d) Only II
(e) Question cannot be answered even with the information in all three statements

Directions (Q. 56-60): These questions are based on the following table. Study it carefully and answer the questions: Number of Items (in thousands) manufactured (M), rejected (R) and sold (S) by five different companies over the years

Compnay	A			B			C			D			E		
	M	R	S	M	R	S	M	R	S	M	R	S	M	R	S
2001	136	1.2	125	98	0.5	90	165	3.5	158	158	1.5	149	85	0.6	80
2002	164	1.7	138	115	1.1	102	172	2.9	166	169	1.9	162	96	0.8	90
2003	148	1.5	136	152	2.6	132	169	2.3	160	173	2.3	168	88	0.5	83
2004	156	2.2	145	147	1.8	140	178	3.2	172	166	2.1	159	102	0.9	98
2005	168	2.5	160	138	1.3	129	158	1.8	152	159	2.0	150	86	0.7	81
2006	175	2.8	168	168	2.2	148	180	2.4	171	171	2.4	165	105	0.8	101

Note : No. of Items accepted = No. of Items manufactured - No. of Items rejected

56. What is the percentage (rounded off to two digits after decimal) of items rejected out of the total items manufactured by Company 'B' in the year 2003?

- (a) 1.97 (b) 1.71 (c) 1.82 (d) 1.96
(e) None of these

57. How many items remained unsold out of the accepted items by Company A in 2004?

- (a) 800 (b) 880 (c) 8000 (d) 8800
(e) None of these

58. What is the total number of items accepted by all the five companies together in 2002?

- (a) 707600 (b) 77600 (c) 70760 (d) 776000
(e) None of these

59. Approximately, what was the average no. of items rejected by Company D for all the given years?

- (a) 2100 (b) 2060 (c) 2090 (d) 1990
(e) 2030

60. What was the total number of items manufactured by all the companies together in 2006?

- (a) 582000 (b) 827000 (c) 789000 (d) 595000
(e) None of these

Directions (Q. 61-65): What will come in place of the question-mark (?) in the following?

61. $8^4 \times \frac{1}{8^3} \times 8^5 \div 8^2 = 8^?$

- (a) 7 (b) 2 (c) 3 (d) 4

(e) None of these

62. $-(a - b) \times ? = b - a$

- (a) -1 (b) 1 (c) -a (d) a

(e) None of these

63. $(a + b) = ? \times (-a - b)$

- (a) 1 (b) -a (c) -1 (d) -b

(e) None of these

64. $|\? + 14| = 11$

- (a) -3 (b) -25 (c) 25 (d) 3

(e) Either -3 or -25

65. $16 + 26 \times 2 = ?$

- (a) 84 (b) 44 (c) 40 (d) 832

(e) None of these

Directions (Q. 66-70): What approximate value should | come in place of question mark(?) in the following questions? (You are not expected to calculate the exact value.)

66. $63251 \times 82 = ? \times 42105$

- (a) 101 (b) 123 (c) 147 (d) 165 (e) 189

67. $\sqrt{84111} = ?$

- (a) 240 (b) 270 (c) 330 (d) 290 (e) 310

68. $(54.78)^2 = ?$

- (a) 3000 (b) 3300 (c) 3500 (d) 3700

(e) 3900

69. $(7171 + 3854 + 1195) \div (892 + 214 + 543) = ?$

- (a) 13 (b) 18 (c) 3 (d) 26 (e) 7

70. $(562\% \text{ of } 816) + 1449 = ?$

- (a) 4145 (b) 5675 (c) 6035 (d) 7325

(e) 8885

> ANSWER KEY

1. (d)	2. (b)	3. (a)	4. (d)	5. (c)	6. (d)	7. (a)	8. (d)	9. (c)	10. (e)
21. (a)	22. (a)	23. (c)	24. (b)	25. (d)	26. (a)	27. (d)	28. (e)	29. (b)	20. (d)
31. (c)	32. (e)	33. (d)	34. (c)	35. (a)	36. (c)	37. (d)	38. (b)	39. (c)	30. (c)
41. (b)	42. (d)	43. (a)	44. (b)	45. (b)	46. (b)	47. (e)	48. (e)	49. (a)	40. (c)
51. (d)	52. (b)	53. (e)	54. (c)	55. (a)	56. (d)	57. (b)	58. (c)	59. (a)	50. (e)
61. (d)	62. (d)	63. (a)	64. (b)	65. (c)	66. (b)	67. (d)	68. (a)	69. (e)	60. (c)
71. (d)	72. (b)	73. (c)	74. (e)	75. (e)	76. (b)	77. (d)	78. (a)	79. (e)	70. (c)

Hint & Solutions

8. From I : Meena > Veena > Sunita, Naina

From II : Sunita > Meena > Naina, Veena

From III : Veena > Sunita > Naina

From I and III : Meena > Veena > Sunita > Naina.

Hence, Naina is the youngest.

9. From I : The woman in the photograph may be Suraj's wife or Suraj's brother's wife.

From II : Again, Suraj's wife or Suraj's brother's wife.

From III : Suraj has no brother.

Hence, either I and III, or II and III are required to reach a certain conclusion, viz the woman is Suraj's wife.

10. From I : Vidya's salary is Rs. 100 more than Rani's

From II : Sapna > Rani > Aman, Neelam

From III : Neelam > Aman

Hence, all are not sufficient to answer the question.

11. Choice 2 is ruled out because an appeal has been made to use one's "discretion to balance work and passion".

12. (A) is the effect and not the cause. (C) has nothing to do with PC. But (B) seems to be the probable cause quite obviously. If consumers start buying less PCs, their shipments are bound to decline.

13. (B) may improve the quality of the faculty but won't address their shortage. (C) will only aggravate the crisis. (A) will address the shortage because. "pay and perks" are a great puller for human resources.

14. Choice 4 also weakens the argument but not substantially so. Rajiv Gandhi received the Bharat Ratna only "a few months" after his death.

15. This one is implicit in the reference to "rented crowd" and its relation to the first sentence.

16. All trains are buses → conversion → some buses are trains (I). Hence IV does not follow. Now, Some scooters are buses + Some buses are trains = I + I = No conclusion. Hence I and consequently III do not follow. Some boats are jeeps + Some jeeps are trains + All trains are buses = I + I + A = No conclusion. Hence II does not follow.

17. All teachers are engineers + All engineers are cooks = A + A = A = All teachers are cooks → conversion → Some cooks are teachers (I). Hence I follows. All engineers are cooks + Some cooks are merchants = A + I = No conclusion. Hence II does not follow. All engineers are cooks (A) → conversion → Some cooks are engineers (I). Hence III does not follow. IV follows by combining the last two statements.

18. All screws are nuts (A) → conversion → Some nuts are screws (I). Hence I does not follow. Some hammers are nails + All nails are screws = I + A = I = Some hammers are screws. Hence III follows. All nails are screws + All screws are nuts = A + A = A = All nails are nuts → conversion → Some nuts are nails (I). Hence IV does not follow. II also can't be concluded when we combine all the statements.

19. All pens are bags + All bags are glasses = A + A = A = All pens are glasses → Some glasses are pens (I). Hence I follows. All pens are glasses + No glass is a spoon = A + E = E = No pen is a spoon → conversion → No spoon is a pen (E). Hence III follows. All bags are glasses + No glass is a spoon + All spoons are books = (A + E) + A = E + A = O = Some books are not bags. Hence neither II nor IV follows by combination. However, since they make a complementary I-E pair, either II or IV follows.

20. All petals are flowers + conversion of all thorns are flowers = A + I = No conclusion. Hence I does not follow. Nor does IV follow. However, since they make a complementary I-E pair, either I or IV follows. Combining the last two statements, we get I + I = No conclusion. Hence II does not follow. Some stems are flowers + conversion of all petals are flowers = I + I = No conclusion. Hence III does not follow.

21-25 The machine rearranges one word and one number in each step. The words starting with a vowel are arranged in ascending order from the right end.

Input : curtail 53 vitiate 49 33 artifice 45 aptitude 23 ice

69 entourage bevy

Step I : aptitude curtail 53 vitiate 49 33 artifice 45 ice 69

entourage bevy 23

Step III : aptitude artifice entourage curtail 53 vitiate
49 ice 69 bevy 23 33 45

Step IV : aptitude artifice entourage ice curtail 53
vitate 69 bevy 23 33 45 49

Step V : aptitude artifice entourage ice bevy curtail
vitate 69 23 33 45 49 53

Step VI : aptitude artifice entourage ice bevy curtail
vitate 23 33 45 49 53 69

22. 8th from the left or 6th from the right

27. M, Q > Rj > L, N hence, either M or Q.

29. Fifth to the left fo the eighteenth from the left
end is (18 - 5 =) 13th from the left end, ie H.

36. Suppose the number of students studying in
Arts, Commerce and Science in the institute in
the year 2002 be 800, 500 and 600 respectively.
After increase in their strengths the new ratio
would be as follows :

Arts	:	Commerce	:	Science
800×130		500×120		600×160
100		100		100

$$= 1040 : 600 : 960$$

$$= 104 : 60 : 96 = 26 : 15 : 24$$

37. The word HOUSING consists of seven distinct
letters. Hence, total number of required
arrangements

$$= 7! = 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$$

$$= 5040$$

38. We know that

$$\text{Area of a square field} = \text{side} \times \text{side} = \left(\frac{\text{Diagonal}}{\sqrt{2}} \right)^2$$

$$[\because \text{Diagonal of the square} = \sqrt{2} \times \text{side}]$$

$$\therefore \text{Required area} = \left(\frac{14}{\sqrt{2}} \right)^2 = \frac{14 \times 14}{2} = 98 \text{ sqm}$$

40. According to the given information

$$2500 \left(1 + \frac{r}{100} \right)^3 - \frac{2500 \times r \times 3}{100} = 153.86$$

$$\text{or, } 2500 \left(\frac{100+r}{100} \right)^3 - \frac{2500 \times r \times 3}{100} = 153.86$$

by solving the above equation we get $r = 14\%$

41. The series is

$$-1^2, -3^2, -5^2, -7^2, -9^2, -11^2.$$

Obviously, 128 should be replaced by 124.

42. The series is $\times 5 + 0.5, \times 5 + 0.5, \dots$

Obviously, 1327.5 should be replaced by 1328.

43. Look at the series from the right end. You get
that 224 is the sum of the two preceding terms
(86 and 138). The same is true for 138 also [\because
 $52 + 86 = 138$] Obviously, the number 32 should
be replaced by 34 [$\because 16 + 18 = 34$].

44. The series is $\times 6 - 1, \times 5 - 2, \times 4 - 3, \dots$

Obviously, 4125 should be replaced by 4121.

45. The series is $\times 1 + 1^3, \times 2 + 2^3, \times 3 + 3^3, \dots$

Obviously, 385 should be replaced by 388.

46. Sushant > Vijay > Ramesh > Rodney > Amit >
Anil

47. The required average age

$$= \frac{90 + 86 + 30 + 38}{4} = 61 \text{ yrs}$$

49. The required ratio = $\frac{38}{30} = \frac{19}{15}$ ie 19 : 15

50. 86 yrs.

51. From statements I, II and III we get :

Total number of employees = 8000

$$\text{Number of males} = \frac{7}{(7+9)} \times 8000 = 3500$$

$$\text{Number of females} = 8000 - 3500 = 4500$$

$$\text{Total number of employees who opted for VRS}$$

$$= 17\% \text{ of } 3500 + 19\% \text{ of } 4500 = 595 + 855 = 1450$$

52. We need the distance covered by Leroy to reach
the answer while using statement II. We can get
the distance covered by Leroy from any of the
statements I and III.

55. We know that

$$\text{Diagonal of a rectangle} = \sqrt{(\text{Length})^2 + (\text{Breadth})^2}$$

Hence, any two of the three statements can fulfil our
need.

56. Required % = $\frac{2.6}{152} \times 100 = 1.71\%$

57. Number of items that remain unsold out of the
accepted items for company 'A' in year 2004
= (156 - 2.2) - 145 = 8.8

Since the figures in thousand is the accepted items
that remain unsold = $8.8 \times 1000 = 8800$.

58. Total no. of items accepted in year 2002

$$= (164 - 1.7) + (115 - 1.1) + (172 - 2.9) + (169 - 1.9)$$

$$+ (96 - 0.8)$$

$$= 162.3 + 113.9 + 169.1 + 167.1 + 95.2 = 707.6$$

Since the figure is in thousands, no. of items accepted
in year 2002

$$= 707.6 \times 6 \times 1000 = 707600$$

59. No. of items rejected by Company D

$$= 1.5 + 1.9 + 2.3 + 2.1 + 2.0 + 2.4 = 12.2$$

Since the figure is in thousands,

$$\text{no of items rejected} = 12.2 \times 1000 = 12200$$

$$\therefore \text{Average no.} = \frac{12200}{6} = 2033.33 \approx 2030$$

60. (175 + 158 + 180 + 171 + 105) thousand = 789000

$$61. 8^4 \times \frac{1}{8^3} \times 8^5 \times \frac{1}{8^2} = 8^{4-3+5-2} = 8^4$$

$$62. -(a - b). x = b - a$$

Put x replacing '?' (question mark)

$$\text{or } -[-(a - b)x] = -[b - a]$$

$$\text{or } (a - b)x = a - b$$

$$\text{or } x = \frac{a - b}{a - b} = 1$$

$$63. a + b = ? \times (-a - b)$$

$$\text{or } a + b = x.(-a - b)$$

[Put x replacing '?' (question mark)]

or $a + b = -x(a + b)$

or $x = -1$

64. $|? + 14| = 11$

or $? + 14 = 11$

or -11

$\therefore ? = -25$ or -3

65. $16 + 26 \times 2 = 16 + 52 = 68$

66. $? \approx \frac{63251 \times 82}{42105} \approx 123$

67. $\sqrt{84111} \approx 290$

68. $(54.78)^2 \approx 55^2 = 3025$

69. $? = \frac{12220}{1449} \approx 7$

70. $562\% \text{ of } 816 + 1449 = 5.62 \times 816 + 1449 \approx 6000$