

SBI Clerk Mains 2016

REASONING ABILITY

Directions (1-5): Study the following information carefully and answer the questions which follow-

Eight persons S, T, U, V, W, X, Y and Z live on 8 different floors in a building the ground floor is numbered 1 then numbered 2 till numbered 8. They like different colours i.e., red, pink, orange, blue, grey, green, yellow and purple. There are four floors between W's floor and S's floor. W lives on an odd numbered floor. S like Yellow colour. There are two floors between T's and W's floor. The one who likes Grey colour lives on immediate above the floor on which S lives. U lives immediate above Y. The one who likes red colour lives on floor numbered one. There is no floor between T's floor and Z's floor. V does not live immediate above or below to W's floor. Only one person lives between the persons who like yellow and purple colours. The one who likes pink colour lives immediate above the floor on which the person who likes Grey colour. Z likes blue colour but does not live below to T. X likes Green colour.

- On which floor Z lives?
(a) Third (b) Fourth (c) Fifth
(d) Sixth (e) Seventh
- How many floors are below the floor on which Y lives?
(a) Three (b) Four (c) Five
(d) Six (e) Seven
- Who among the following lives on the second floor?
(a) X (b) V (c) Y
(d) U (e) S
- Which colour is liked by V?
(a) Orange (b) Pink (c) Grey
(d) Red (e) Purple
- Which of the following is true with respect to T?
(a) T likes Orange colour and lives on 4th floor?
(b) T like Pink colour and lives on 8th floor
(c) T like Purple colour and lives on 4th floor
(d) T like Grey colour and lives on 7th floor
(e) T like Red colour and lives on 8th floor

Direction (6-10): Study the following information to answer the given question.

- Eight friends E, F, G, H, L, M, N and O are seated in a straight line, facing north, but not necessarily in the same order.
- O sits at the extreme right end of the line. Only four people sit between O and G.
- Both F and M are immediate neighbours of G.

- Only two people sit between M and L. L is not an immediate neighbor of O.
 - N sits second to left of E.
- What is the position of L with respect to G?
(a) Third to the right (b) To the immediate left
(c) Second to the right (d) Fourth to the right
(e) Second to the left
 - Based on the given arrangement, which of the following is true with respect to N?
(a) Only three persons sit between N and O.
(b) None of the given options is true.
(c) Only one person sits to the right of N.
(d) E sits to immediate right of N.
(e) Both L and F are immediate neighbours of N
 - Who amongst the following people represents the person seated at the extreme left end of the line?
(a) E (b) N (c) L
(d) F (e) H
 - How many persons are seated between O and E?
(a) Two (b) Three (c) None
(d) Four (e) One
 - Who amongst the following sit exactly between M and L?
(a) E, N (b) F, O (c) F, G
(d) E, G (e) H, N

Directions (11-15): In each question below is given a group of letters followed by four combinations of digits/symbols numbered (1), (2), (3) and (4). You have to find out which of the combinations correctly represents the group of letters based on the following coding system and mark the number of that combination as the answer. If none of the four combinations correctly represents the group of letters, mark 5, ie 'None of these', as the answer.

Letter	L	F	J	T	A	H	I	M	R	E	K	D	U	B	P
Digit/Symbol	3	7	#	\$	4	9	1	8	2	@	6	%	©	*	5

Conditions:

- If the first letter is a consonants and the last letter is a vowel their codes are to be interchanged.
- If both the first and the last letters is Vowel both are to be coded as +.
- If both the first and the last letters is Consonant and in between there are two or more vowels are to be coded as 8.
- If the first letter is vowel and the last letter is a consonant, both are to be coded as the code for the consonant.

11. EFHKL B
(a) @7963* (b) *7963* (c) @7963@
(d) *7S63@ (e) none of these.
12. FTAMIR
(a) 7\$4812 (b) 7\$1842 (c) 7\$8882
(d) 7\$189% (e) none of these.
13. DKPRTB
(a) *652\$% (b) %652\$% (c) +652\$+
(d) *652\$* (e) none of these
14. UPJTRA
(a) 45#\$2© (b) ©5#\$24 (c) ©5#\$2©
(d) +5#\$2+ (e) none of these
15. HLEKBI
(a) 13@6*9 (b) 93@6*1 (c) 13@6*1
(d) 93@6*9 (e) None of these

Directions (16-20): Study the following information and answer the questions given.

In a certain code language 'lu ja ka hu' means 'will you meet us', 'fa ka la ju' means 'will today maximum temperature', 'la fu ja ju' means 'meet today the temperature' and 'ju lu na fu' means 'temperature of the us'. then

16. What is the code of 'today' in this code language?
(a) ju (b) la (c) fa
(d) ka (e) cannot be determined
17. What is the code of 'you' in this code language?
(a) hu (b) lu (c) ka
(d) ja (e) cannot be determined
18. What is the code of 'you of maximum'?'
(a) ha hu fu (b) fa hu na (c) fu lu na
(d) hu fa la (e) cannot be determined
19. What is the code of 'us' in this code language?
(a) hu (b) lu (c) ja
(d) ka (e) cannot be determined
20. What is the code of 'meet' in this code language?
(a) hu (b) lu (c) ja
(d) ka (e) cannot be determined

Directions (21-25): In the following questions, the symbols @, ©, %, \$ and * are used the following meaning as illustrated below:

'A©B' means 'A is smaller than Q'.
'A@B' means 'A is either smaller than or equal to Q'.
'A%B' means 'A is greater than Q'.
'A \$ B' means 'A is either greater than or equal to Q'.
'A * B' means 'A is equal to Q'.

Now in each of these questions assuming the given statements to be true, find which of the two conclusions I and II given below them is/are definitely true? Give answer

- (a) if only Conclusion I is true.
(b) if only Conclusion II is true.
(c) if either Conclusions I or II is true.
(d) if neither Conclusions I nor II is true.
(e) if both Conclusions I and II are true.

21. **Statements:** B © T, T * M, M % F
Conclusions: I. B © M II. B © F
22. **Statements:** M * R, R % T, T \$ K
Conclusions: I. K @ M II. K © M
23. **Statements:** W © D, D @ H, H * N
Conclusions: I. N \$ D II. W © N
24. **Statements:** W @ D, D \$ R, R © K
Conclusions: I. R * W II. R % W
25. **Statements:** F \$ J, J % V, V © N
Conclusions: I. N \$ F II. N % J

Directions (26-30) : Each of the questions below consists of a question and two statements numbered I and II. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and answer–

- (a) If the data in statements I alone is sufficient to answer the question while the data in statement II are not sufficient to answer the question.
(b) If the data in statement II alone is sufficient to answer the question while the data in statement I are not sufficient to answer the question.
(c) If the data in either statement I alone or statement II alone are sufficient to answer the question.
(d) If the data even in both statement I and statement II together are not sufficient to answer the question.
(e) If the data in both statement I and statement II together are necessarily to answer the question.
26. Among 6 persons U, V, W, X, Y and Z, who are sitting around circle facing to the centre. Who sits immediate right of W?
Statements:
I. X sits second to the left of Y and opposite to U but not near to W.
II. Only one person is seated between U and V. Y is seated near to Z.
27. How P is related to R?

- Statements:**
I. Q is father-in-law of R, who is mother of S. P is grandmother of S.
II. T is father of P, who is son-in-law of U. U has only one grand-daughter R, who is also a grand-daughter of T.
28. Who among P, Q, R, S, T, and U is the tallest?
Statements:
I. S and R are taller than P but shorter than U. Q is taller than T.
II. U is shorter than T but taller than Q and S. while P is not tallest.
29. In which direction is Q from of P.
Statements:
I. Q is towards north of O, which is towards the east of P.
II. R is towards east of M and P is towards the west of T.

30. How many person are sitting in a row?

Statements:

I. A is on 16th position from the right end of the row. M is on 8th position from the left end of the row.

II. A is 18th from the left end and 20th from the right end of the row.

Directions: (31-35): Study the following information carefully and answer the questions given below:

Six girls – A, B, C, D, E and F are sitting in a row facing North and six boys – P, Q, R, S, T and U are sitting in a different row facing South, but not necessarily in the same order. Each girl in a row is facing exactly one boy from the other row. The following information is known about them.

P sits second to the right of the person who sits opposite B. B does not sit at any end of the row. C and D are immediate neighbors of B, and one of them sits at an extremes. E sits second to the left of D but not opposite R.

P is a neighbor of R but is not opposite F. Neither Q nor T are adjacent to P. T is adjacent to either R or Q but not both. U is a neighbor of the person who sits opposite E.

31. Who sits opposite C?

- (a) S (b) P (c) R
(d) Q (e) T

32. Who sits second to the left of R?

- (a) S (b) T (c) P
(d) Q (e) U

33. If S and D interchange their positions, then who sits to the immediate left of D?

- (a) U (b) R (c) P
(d) T (e) Q

34. Four of the following five are alike in a certain way and so form a group. Find the one which does not belong to that group?

- (a) U, A (b) P, B (c) D, S
(d) C, R (e) D, T

35. Which of the following is true, according to the given information?

- (a) U and C are at the extremes.
(b) R sits second to the right of S.
(c) T sits to the immediate right of Q.
(d) B sits second to the left of A.
(e) All the above

Directions (36-37): Triangle represents $\blacktriangle$ (1) and circle represents $\bullet$ (0). If triangle appears in unit's place then its value is 1. If it appears in 10's place its value is doubled to 2 like that it continues. Questions based on this

For example:

$\blacktriangle = 1$

$\blacktriangle \bullet \blacktriangle = 4, 0, 1 = 4 + 0 + 1 = 5$

$\blacktriangle \bullet = 2$

36. How will you represent '13' in this code language?

- (a) $\blacktriangle \blacktriangle \bullet \blacktriangle$
(b) $\bullet \blacktriangle \blacktriangle \bullet$
(c) $\bullet \blacktriangle \blacktriangle \blacktriangle$
(d) $\bullet \blacktriangle \bullet$
(e) $\blacktriangle$

37. What will be the code for $\blacktriangle \blacktriangle \bullet \blacktriangle \blacktriangle$?

- (a) 19 (b) 20 (c) 22
(d) 27 (e) 25

Directions (38-40): Study the following information carefully and answer the questions which follow–

'P – Q' means 'P is father of Q'

'P ÷ Q' means 'P is sister of Q'

'P × Q' means 'P is mother of Q'

'P + Q' means 'P is brother of Q'

38. Which of the following means 'A is nephew of B'?

- (a) $A + C - B \times K$ (b) $B \div H - A + D$
(c) $B \div G - A \div R$ (d) $B + T \times A \div E$
(e) None of these

39. Which of the following means 'P is grandfather of J'?

- (a) $J \div W - U - P$ (b) $P \times G + J \div A$
(c) $P - B \div J \div R$ (d) $P - T - J \div S$
(e) None of these

40. How is R related to B in the expression ' $B \div C - S + R$ '?

- (a) nephew or niece (b) niece
(c) nephew (d) None of these
(e) Cannot be determined

Directions (41 – 45): Answer the questions on the basis of the information given below.

A number arrangement machine when given an input of words, rearranges them following a particular rule in each step. The following is an illustration of input and steps of rearrangement.

Input : 98 Bite 102 Legal 88 54 Mango 21 Cool Zing.

Step1: Bite 98 Legal 88 54 Mango 21 Cool Zing 102

Step2: Cool Bite Legal 88 54 Mango 21 Zing 102 98

Step3: Legal Cool Bite 54 Mango 21 Zing 102 98 88

Step4: Mango Legal Cool Bite 21 Zing 102 98 88 54

Step5: Zing Mango Legal Cool Bite 102 98 88 54 21

This is the final arrangement and step 5 is the last step for this input. As per the rules followed in the above steps, find out in each of the following questions the appropriate steps for the given input.

Input for the questions.

Input: Kite 19 54 Give 31 Right 72 87 Dream Ace.

41. In step-3, what is position of 'Ace' from the left end?

- (a) Third (b) Fifth (c) Second
(d) Sixth (e) First

42. In step-5, how many Letters/Numbers are between Dream and 72?
(a) Five (b) Two (c) Four
(d) Six (e) Three
43. 'Kite Give Dream Ace Right 87 72 54 31 19' in which of the following step?
(a) Step-2 (b) Step-4 (c) Step-5
(d) There is no such Step
(e) Step-3
44. In Step-2, which of the following letter/number is 5th right of Kite?
(a) 31 (b) Give (c) Right
(d) 87 (e) 54
45. How many steps would be needed to complete the arrangement?
(a) Four (b) Two (c) Seven
(d) Six (e) Five

Directions (46-50): Study the following information carefully and answer the questions given below:

P, Q, R, S, T and V are six students studying in a class. Each of them has a different height and weight. The tallest is not the heaviest. T is taller than only P but lighter than R. Q is taller than S and P and heavier than only T and V. P is

lighter than only S. T is heavier than V. S is taller than V and Q is not the tallest.

46. How many of them are heavier than T?
(a) One (b) Two
(c) Three (d) Five
(e) None of these
47. How many of them are shorter than Q?
(a) Two (b) Four
(c) Three (d) Five
(e) None of these
48. Who among them is the tallest?
(a) V (b) P
(c) T (d) R
(e) None of these
49. Who, among them is third from top if arranged in descending order of height?
(a) Q (b) V
(c) S (d) Data inadequate
(e) None of these
50. Who among them is the lightest?
(a) V (b) T
(c) P (d) R
(e) None of these

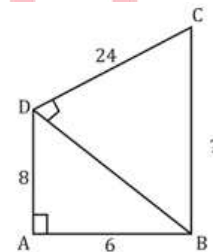
QUANTITATIVE APTITUDE

Directions (51-55): What will come in place of the question mark (?) in the following number series?

51. 7 151 223 259 277 ?
(a) 268 (b) 295 (c) 286
(d) 259 (e) None of these
52. 27 30.2 23.8 33.4 20.6 ?
(a) 30.2 (b) 36.6 (c) 39.8
(d) 17.4 (e) None of these
53. 5 4 6 15 56 ?
(a) 280 (b) 275 (c) 270
(d) 265 (e) 285
54. 7 10 21 52 121 ?
(a) 256 (b) 270 (c) 254
(d) 252 (e) None of these
55. 5 3 4 ? 38
(a) 8.5 (b) 6 (c) 7.5
(d) 8 (e) 10
56. Distance between A and B is 24 km a boat travels from A to B and comes back in 6 hour. The speed of boat in still water is thrice the speed of stream. Find the speed of boat.
(a) 3 km/hr (b) 11 km/hr (c) 7 km/hr
(d) 12 km/hr (e) 9 km/hr

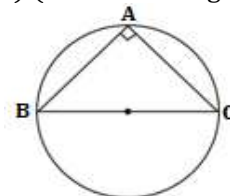
57. A rectangular grassy plot is 112 m by 78 m. It has a gravel path 2.5 m wide all round it on the inside. Find the cost of area of the path which has the cost of constructing it at Rs. 2 per square metre?
(a) Rs. 1500 (b) Rs. 1600 (c) Rs. 1750
(d) Rs. 1850 (e) None of these

58. Find length of BC ? $\angle CDB = \angle DAB = 90^\circ$



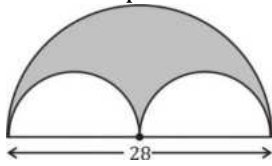
- (a) 24 (b) 26 (c) 22
(d) 28 (e) 27

59. Circumference of circle is 44 meter. Find the area of triangle ? (in m^2) (Given- one angle of triangle is 45°)



- (a) 49 (b) $49\sqrt{2}$ (c) $98\sqrt{2}$
(d) 98 (e) None of these

60. Find the area of shaded portion ?



- (a) 154 (b) 196 (c) 156
(d) 198 (e) None of these

61. A bag contains 4 red, 5 yellow and 6 green balls. 3 balls are drawn randomly.

What is the probability that the balls drawn contain no yellow ball?

- (a) $\frac{24}{91}$ (b) $\frac{33}{91}$ (c) $\frac{12}{65}$
(d) $\frac{17}{182}$ (e) None of these

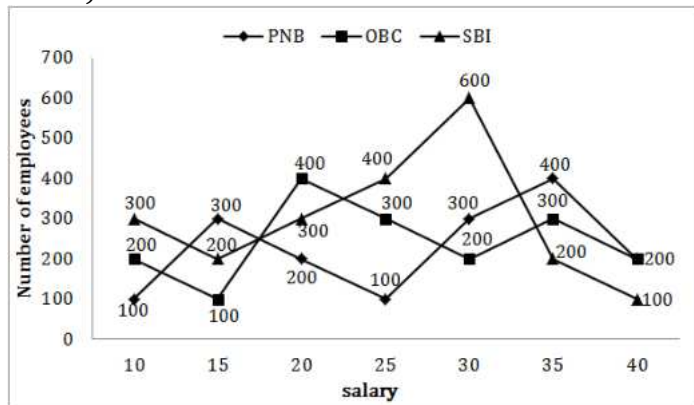
Directions (62 – 66) : In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer.

- (a) if $x > y$ (b) if $x \geq y$ (c) if $x < y$
(d) if $x \leq y$
(e) if $x = y$ or no relation can be established between 'x' and y.

62. I. $4x + 7y = 42$ II. $3x - 11y = -1$
63. I. $9x^2 - 29x + 22 = 0$ II. $y^2 - 7y + 12 = 0$
64. I. $3x^2 - 4x - 32 = 0$ II. $2y^2 - 17y + 36 = 0$
65. I. $3x^2 - 19x - 14 = 0$ II. $2y^2 + 5y + 3 = 0$
66. I. $x^2 + 14x + 49 = 0$ II. $y^2 + 9y = 0$

Directions (67-71): Read the following graph carefully and answer the questions given below.

Number of employees and their salaries (in thousands per month) in different banks.



67. What is the average salary of employees of PNB?
(a) Rs. 26125 (b) Rs. 24525
(c) Rs. 23186 (d) Rs. 25625
(e) None of these

68. Which bank has the lowest number of employees?
(a) SBI (b) PNB (c) OBC
(d) PNB and OBC (e) None of these

69. What is the respective ratio between the total salary of Rs. 15000 salaried employees to the total salary of Rs. 35000 salaried employees?

- (a) 1 : 3 (b) 2 : 3 (c) 1 : 1
(d) 4 : 1 (e) 2 : 7

70. The number of employees of OBC drawing salary Rs. 20000 is approximately what percent of the number of employees of SBI drawing salary Rs. 30000 month?

- (a) 75% (b) $33\frac{1}{2}\%$ (c) $16\frac{2}{3}\%$
(d) 80% (e) $66\frac{2}{3}\%$

71. Total salary of Rs. 20000 salaried employees is what percent of the total salary of 25000 salaried employees?

- (a) 92 (b) 90 (c) 94
(d) 86 (e) None of these

Directions (72-76): Study the table carefully to answer the questions that follow.

Number of animals in grasslands of four different countries in five different years

Year	Country											
	South Africa			China			Sri Lanka			England		
	Tiger	Lion	Bear	Tiger	Lion	Bear	Tiger	Lion	Bear	Tiger	Lion	Bear
1990	145	156	250	320	346	436	280	468	255	423	342	234
1995	134	165	354	445	256	542	354	354	343	368	136	345
2000	120	135	324	583	325	454	433	345	545	354	267	456
2005	110	184	285	466	475	322	343	324	546	562	235	567
2010	160	224	264	411	535	534	535	532	453	349	345	324

72. What is the average of the number of tigers in the grassland of Sri Lanka over all the years together?

- (a) 386 (b) 389 (c) 369
(d) 276 (e) None of these

73. What is the difference between the total number of lions and bears in the grassland of England in the year 2005 and the number of tigers in the grassland of South Africa in the year 1995?

- (a) 597 (b) 558 (c) 677
(d) 668 (e) None of these

74. The total number of animals together in the grassland of China in the year 1990 is approximately what per cent of the total number of bears in the grassland of Sri Lanka over all the years together?

- (a) 44% (b) 56% (c) 41%
(d) 47% (e) 51%

75. If 35 per cent of the total number of animals in the grassland of China in the year 2010 died due to an epidemic, how many animals remained in the grassland of China in the year 2010?

- (a) 976 (b) 952 (c) 986
(d) 962 (e) None of these

76. What is three-fourths of the total number of lions in the grasslands of all the four countries in the year 2000?
 (a) 848 (b) 868 (c) 804
 (d) 824 (e) None of these
77. The salaries of A, B and C are in the ratio 1 : 3 : 4. If the salaries are increased by 5%, 10% and 15% respectively, then the increased salaries will be in the ratio
 (a) 20 : 66 : 95 (b) 21 : 66 : 95
 (c) 21 : 66 : 92 (d) 19 : 66 : 92
 (e) None of these
78. Two pipes A and B can separately fill a cistern in 60 minutes and 75 minutes respectively. There is a third pipe in the bottom of the cistern to empty it. If all the three pipes are simultaneously opened, then the cistern is full in 50 minutes. In how much time, the third pipe alone can empty the cistern?
 (a) 90 minutes (b) 100 minutes (c) 110 minutes
 (d) 120 minutes (e) None of these

Directions (79-83): Each question below is followed by two statements I and II. You have to determine whether the data given in the statement is sufficient to answer the question. You should use the data and your knowledge of Mathematics to choose between the possible answers. Give answer—

- (a) If the question can be answered by using statement I alone but cannot be answered by statement II alone.
 (b) If the question can be answered by using statement II alone but cannot be answered by statement I alone.
 (c) If both statements I and II together are required to answer the question.
 (d) If the answer can be found by using any of the two statements alone.
 (e) If both the statements together are not sufficient to answer the question.

79. What will be the cost of painting a rectangular wall?
 I. Cost of painting is Rs 10 per square meter.
 II. Perimeter of wall is 60 m.
80. Age of A is one third of age of B. What are their ages?
 I. After 10 years the ratio between age of A and B will be 3 : 7.
 II. 10 years ago the ratio of their ages was 1 : 5.
81. What is the length of a train?
 I. It takes 8 seconds to cross a man.
 II. It takes 20 seconds to cross a 50-meter-long bridge with the same speed.
82. What is sum of two numbers a and b?
 I. $a - z = 20$
 II. $z - b = 20$
83. What is the age of A and B?
 I. Age of A is 80% of the age of C.
 II. Age of B is 60% of the age of C

84. The ages of Ranjana and Rakhi are in the ratio of 15 : 17 respectively. After 6 years, the ratio of their ages will be 9 : 10. What will be the age of Ranjana after 6 years?
 (a) 40 years (b) 30 years (c) 34 years
 (d) 36 years (e) None of these
85. The simple interest accrued on an amount of Rs. 20000 at the end of 3 years is Rs. 7200. What would be the compound interest accrued on the same amount at the same rate in the same period?
 (a) Rs. 8342.36 (b) Rs. 8098.56
 (c) Rs. 8246.16 (d) Rs. 8112.86
 (e) None of these
86. A pipe can empty a tank in 40 minutes. A second pipe with diameter twice as that of the first is also attached with the tank to empty it. The two together can empty the tank in ;
 (a) 8 minutes (b) $13\frac{1}{3}$ minutes
 (c) 30 minutes (d) 38 minutes
 (e) None of these
87. A shopkeeper purchased a TV for Rs. 2,000 and a radio for Rs. 750. He sells the TV at a profit of 20% and the radio at a loss of 5%. The total loss or gain is
 (a) Gain Rs. 352.50 (b) Gain Rs. 362.50
 (c) Loss Rs. 332 (d) Loss Rs. 300
 (e) None of these
88. 8 men and 4 women together can complete a piece of work in 6 days. Work done by a man in one day is double the work done by a woman in one day. If 8 men and 4 women started working and after 2 days, 4 men left and 4 new women joined. In how many more days will the work be completed?
 (a) 5 days (b) 8 days (c) 6 days
 (d) 4 days (e) 9 days
89. A, B and C started a business with their investments in the ratio 1 : 2 : 4. After 6 month A invested the half amount more as before and B invested same the amount as before while C withdrew $\frac{1}{4}$ th of his investment. Find the ratio of their profits at the end of the year.
 (a) 5 : 12 : 13 (b) 5 : 11 : 14
 (c) 5 : 12 : 14 (d) 5 : 12 : 10
 (e) None of these
90. Richa's science test consist of 85 questions from three sections- i.e. A, B and C. 10 questions from section A, 30 questions from section B and 45 question from section C. Although, she answered 70% of section A, 50% of section B and 60% of section C correctly. She did not pass the test because she got less than 60% of the total marks. How many more questions she would have to answer correctly to earn 60% of the marks which is passing grade?
 (a) 4 (b) 2 (c) 5
 (d) 6 (e) 8

91. The average age of 28 men is 27 years. If the age of one more man is added to it, the average increases by 1 year. What is the age of the new man?
 (a) 28 years (b) 42 years
 (c) 56 years (d) 54 years
 (e) None of these
92. Ms Deepti Jain invests 11% of her monthly salary, i.e., Rs. 5236 in Fixed Deposits. Later she invests 19% of her monthly salary on Life Insurance Policies, also she invests another 7% of her monthly salary on Mutual Funds. What is the total annual amount invested by Ms Deepti Jain?
 (a) Rs. 21134 (b) Rs. 17612 (c) Rs. 10567
 (d) Rs. 35224 (e) None of these
93. A committee of 3 members is to be selected out of 3 men and 2 women. What is the probability that the committee has atleast one woman?
 (a) $\frac{1}{10}$ (b) $\frac{9}{20}$ (c) $\frac{9}{10}$
 (d) $\frac{1}{20}$ (e) None of these
94. A and B together can complete a piece of work in 12 days. A alone can complete in 20 days. If B does the work only half a day daily, then in how many days A and B together will complete the work?
 (a) 10 days (b) 20 days (c) 11 days
 (d) 15 days (e) None of these
95. A train is moving at a speed of 132 km/hour. If the length of the train is 110 metres, how long will it take to cross a railway platform 165 metres long?
 (a) 5 second (b) 7.5 second (c) 10 second
 (d) 15 second (e) 9 second
96. 15 litres of a mixture contains alcohol and water in the ratio 1 : 4. If 3 litres of water is mixed in it, the percentage of alcohol in the new mixture will be
 (a) 15 (b) $16\frac{2}{3}$ (c) 17
 (d) $18\frac{1}{2}$ (e) None of these
97. Two pipes A and B can fill a cistern in 30 minutes and 45 minutes respectively. Both pipes are opened. The cistern will be filled in just 20 min, if the pipe B is turned off after
 (a). 5 min (b). 9 min (c). 10 min
 (d). 15 min (e). None of these
98. 2 men and 3 boys can do a piece of work in 10 days while 3 men and 2 boys can do the same piece of work in 8 days. In how many days can 2 men and 1 boy do the same piece of work?
 (a) $12\frac{1}{2}$ days (b) 24 days (c) 32 days
 (d) $11\frac{1}{2}$ days (e) None of these
99. A man sets out on cycle from Delhi to Faridabad, and at the same time another man starts from Faridabad on cycle for Delhi. After passing each other they complete their journeys in $2\frac{6}{7}$ and $5\frac{3}{5}$ hours respectively. At what rate does the second man cycle if the first man cycles at 14 kmph?
 (a) 10 kmph (b) 5 kmph (c) 7 kmph
 (d) 8 kmph (e) None of these
100. The length of rectangular floor is twice its breadth. If Rs 256 is required to paint the floor at the rate Rs 2 per sq m, then what would be the length of floor?
 (a) 16 m (b) 8 m (c) 12 m
 (d) 32 m (e) 20 m

ENGLISH LANGUAGE

Directions (101–108): Read the following passage carefully and answers the questions given below it. Certain words are given in bold to help you locate them while answering some of the questions

There is no fool so great a fool as a knowing fool. But to know how to use knowledge is to have wisdom." Businesses continue to face challenging times. In this uncertainty, some leaders have lost their way due to **egregious** moral and ethical missteps. Others have reached career dead ends due to their inability to see the big picture from a higher not-so-common perspective. Many of these leaders are undoubtedly intelligent. But they're not wise.

Our minds work on a lower and higher level. The lower level deals with the concrete - our immediate physical environment, information, facts and logic. Our lower mind supports us to be aware, conceptual and reflective. Our lower mind is rational, analytical, opinionated, busy and

often sceptical. It is bound by time and space. We use our lower mind to make sense of our complicated and emotional world. The lower mind is the stuff of business schools, "operations-focused" education and experiential learning. The lower mind delivers reductionist thinking and mechanistic, **conventional** approaches to life. The main drawback of living in the lower mind is that it only reflects your internal map of reality. It is like being stuck in your own intellectual zip code, never moving beyond your nine-digit thoughts, beliefs, assumptions, expectations and world views. It is like living in one town, knowing it completely, and never venturing outside the borders of that town. Intelligent people are generally engaged with their lower mind and left-brain thinking. The lower mind focuses on one corner of the painting. Wisdom does not arise from this place. The higher mind considers the abstract. It involves intuition, aspiration, heart, soul and spirit and connects

with the Universal mind, with Universal truth, with beauty and with goodness. Our higher mind speaks in the language of ideas, ideals, symbols, principles and impulses. It is loving. It guides us to the truth.

The higher mind sees the threads woven between the mental, physical, emotional, spiritual, psychological and social aspects of our life. The higher mind sees the entire painting - the place from which wisdom arises. Wise leaders access both their lower and higher minds. Wise leaders understand they are spiritual beings living in a human form. They allow their lower minds to access their higher, helping them to access intuition and impressions that provide insights into the bigger picture of life. Wise leaders understand the importance of focus, presence, self-discipline, meditation, study, loving service and creative expression. They seek to grasp the next higher level of awareness. They venture outside their historical map of reality - willing to jettison their old, "safe" beliefs, assumptions, expectations and worldviews - to explore the possible and the unknown. They're open to knowing what they don't know. Wise leaders understand that spiritual and personal growth means connecting with higher concepts and energies, be they values, ideas, ideals, potentials, archetypes, higher guidance or intuition. The wise leader develops the capacity to not only connect with these higher concepts, but also to seek to ground them into forms, tasks, projects, relationships and details that inform the way they lead.

Wise leaders don't stop with experience, but transcend experience - both their own and others' - in a way that they spend an appreciative amount of time and energy in deep self-reflection and thoughtful consideration around their experience, leading to higher insights, enhanced value and a deeper sense of self-awareness. Proust Wise leadership is not about having experiences but consciously learning from those experiences. The process of learning from experience leads to a process of inquiry - looking with curiosity, not judgment, into the who, what, when, where, how and - most importantly - the why of their experiences. Inquiry is a matter of punctuation; it's about question marks, not full stops. It is about curiosity. Wise leaders understand how connections between diverse elements can create something new. They are adept at using analogy and metaphor and seek to recognize patterns, spot trends, draw connections and **discern** the big picture even when there seem to be nothing there. A wise leader interacts with her world in terms of a richer and more varied spectrum of possibilities and opportunities. A wise leader understands the importance of relationships - human and otherwise. A wise leader is a systems thinker, a gestalt thinker, a holistic thinker. Wise leaders are comfortable being oriented to their right brain, as well as to their heart and soul. Inquiry, for the wise leader, is not about "futurizing the past" - using their past experiences, the known, the tried and true - to explain present experiences that are un-common, un-usual,

un-familiar. They understand that inquiry involves delving deeply into the self, even parts of the self that, heretofore, might have been unknown, in order to search for new insights, **perspectives** and understanding - seeking familiarity with the unknown. For wise leaders, inquiry means creating an internal space unencumbered by old thoughts, beliefs and premises - a new, clear, inviting and open space - entering into a fresh realm without preconception or expectation and being informed with new learning, new sense, new meaning, new WHYS and new HOWs. In other words, new wisdom.

101. Which of the following is true regarding wisdom?

- (a) People with wisdom are sceptical and opinionated.
- (b) People with Wisdom have conventional approach to life.
- (c) Wisdom is what's left after we've run out of personal opinions.
- (d) The abilities to plan or create an idea, solve a problem, be logical in your creativity and make favorable results in a bad situation.
- (e) All of these.

102. Which of the following is false in context of the passage?

- (1) Lower mind lacks emotional and spiritual intelligence.
- (2) For wise leader inquiry means new wisdom.
- (3) People who lack wisdom but are intelligent don't have access to higher mind.
- (a) Only 1.
- (b) Both (1) and (2)
- (c) Both (3) and (1).
- (d) only (3)
- (e) None of these.

103. What is the main drawback(s) of living only in the lower mind?

- (a) Person is unable to have a conventional approach to life.
- (b) Person is opinionated and sceptical.
- (c) Never been able to transcend beyond our beliefs and assumption.
- (d) People stop having experiences.
- (e) Not able to understand the importance of relationships.

104. What is the difference between intelligence and wisdom?

- (a) People with wisdom don't have rational thinking.
- (b) Intelligent people are not reflective.
- (c) People with wisdom have access to both the minds.
- (d) People with wisdom never make mistakes.
- (e) People with wisdom are not sceptical unlike the one who are intelligent.

Directions (105-106): Which of the following words is nearest in the meaning to words as given in bold letters?

105. EGGREGIOUS

- | | |
|-------------------|-----------------|
| (a) Imperceptible | (b) Conspicuous |
| (c) Conceal | (d) Trivial |
| (e) Trifling | |

106. CONVENTIONAL

- | | |
|-----------------|--------------|
| (a) Distinctive | (b) Orthodox |
| (c) Complex | (d) Inept |
| (e) Original | |

Directions (107-108): Which of the following words is most opposite in the meaning to words as given in bold letters?

107. DISCERN

- | | | |
|--------------|------------|---------------|
| (a) Perceive | (b) Detect | (c) Recognize |
| (d) Confound | (e) Behold | |

108. PERSEPECTIVE

- | | | |
|--------------|---------------|------------|
| (a) Panorama | (b) Prospect | (c) Aspect |
| (d) Stance | (e) Blindness | |

Directions (109 –116): Read the following passage carefully and answers the questions given below it. Certain words are given in bold to help you locate them while answering some of the questions

This is a problem that society must fix; we are supposed to be an equal education system. It is Hispanic and black students who aren't performing at the level of white and Asian students. Certain races or groups shouldn't be the only ones successful in school.

According to the interview with Greg Duncan and Richard Murnane, Rohan Mascarenhas stated that, one of the reasons why children achieve good grades in school is because they are in after-school programs. Parents with higher income sign their kids up for the after school. They do this so that their child can learn more throughout the day not just in school. After-school programs also help children one on one, who are struggling in school. The rich take advantage of these after school programs. The students with low-income struggle with their reading and writing, they can't afford to go to after-school programs. This is why they continue to struggle and don't receive the proper help that they need.

When I was in elementary school I attended after-school, which helped me because it kept me in honors class. I was able to get the extra help I needed during this time and improved my academic performance. Its important to attended after-school because it focuses on academic activities. Parents with higher income pay for tutors to come over and teach their child. While low income parents don't reach out to any tutors. If students with lower income could receive some money from the government to help them pay for after schools and tutors, it would help them to perform better and succeed in school as well. The government can

help if they make after school programs free for any student. The more students to join after- schools, the better results they will have in test scores in school.

Would you send your child to a Public or a Private school? Which would your income lead you to? Most high-income parents put their child in private schools; its class size is smaller than public schools. Public school classes ranges from 25 to 30 students. That's too many students for one teacher to handle. One of the benefits of private school is that class size is from 15 to 20 students. This allows students to receive more attention in class, and receive more work as well. The level of teaching is different between the two. Private school teachers often have their graduate degree or their **doctrine** degree, while public school teachers must have a bachelor's degree with a master in their subject. The level of education however, is more difficult for private than for public school. Parents with low income tend to put their child in public schools because it's free. Help from the government is what makes public schools run well and not shut down. Private schools charge tuition for each student, so this helps them raise enough money and not rely so much for government funds.

There is a gap in achievement between low-income students and high-income students. Students who come from **affluent** families perform higher in school compared to lower income families. About 82 percent of high school graduates who come from high-income families attend colleges, in comparison to 52 percent of graduates from low-income families. A study shown by Martha Bailey and Susan Dyhorski showed that over the last 20 years the percent of children from higher income who completed college increased by 21 percent, while low income increased by only 4 percent. This is not a significant change for low-income students, showing that this is a cycle.

Study show that this cycle continues and stays with the student into college. The rate of White graduates who were college ready in English was 77 percent, whereas African American was half of that, they were 35 percent ready. This is because students who come from families with low-income are attending high schools with teachers who are inexperienced and that do not offer the courses needed to prep them for college. These schools lack the resources they need to ensure their students are ready for higher education. The percent of 18-24 year olds **enrolled** in college is 58 percent, while Hispanic is less than half of that at 19 percent and black at 14 percent.

The income gap has not **narrowed** over time. Changes within the government and education system need to be made to close this gap in schools. It is essential to increase academic achievement. All students should be held to the same high expectations and all be given the same resources and tools to help them through K-12 grade. This will prepare them for their college and future careers.

109. Which one of the following is/are the reason(s) why students with higher income succeed more than those with low income?

- (1) Poor students don't go to after school programs because they can't afford it unlike the rich students.
- (2) As poor students go to public schools.
- (3) Different level of education.
- (a) Only (1)
- (b) Both (1) and (2).
- (c) Only (2)
- (d) Both (1) and (3)
- (e) All of these.

110. What can be the most suitable title for the passage?

- (a) Dilemma of low income students.
- (b) 'Education' only for rich.
- (c) The widening gap between rich and poor.
- (d) Education and Inequality between Rich and Poor.
- (e) Need for reforming education system.

111. How the gap between rich and poor students can be abridged?

- (a) By increasing the number of public schools.
- (b) By waiving the fees of private sector schools.
- (c) By narrowing the income gap.
- (d) By encouraging poor students to join after school programs.
- (e) By reducing the class size in public schools.

112. Which of the following is false in context of the passage?

- (a) Black students are not performing better than the Asian students.
- (b) Not being able to reach out to tutor is one of the reasons for bad performance of poor people.
- (c) More attention to students is paid in private compared to public.
- (d) Private sector teachers are more qualified hence the performance is better.
- (e) Number of students are too much to handle in public school.

Directions (113-114): Which of the following words is nearest in the meaning to words as given in bold letters?

113. AFFLUENT

- (a) Penurious
- (b) Impecunious
- (c) Destitute
- (d) Deprived
- (e) Opulent

114. NARROWED

- (a) Wide
- (b) Broad
- (c) Spacious
- (d) Capacious
- (e) Constricted

Directions (115-116): Which of the following words is farthest in the meaning to words as given in bold letters?

115. DOCTRINE

- (a) Creed
- (b) Dogma
- (c) Belief
- (d) Conviction
- (e) Scepticism

116. ENROLLED

- (a) Catalogue
- (b) Directory
- (c) Expatriate
- (d) Avow
- (e) Volunteer

Directions: (117-121): In these questions, a sentence or a part of sentence is underlined. Below are given alternatives to the underlined part which may **improve the sentence**.

117. In order to earning decent living, we need to have a good job which pays substantial amount of money

- (a) earned decency life
- (b) earning decency live
- (c) earn a decent living
- (d) earned decently life
- (e) No correction required

118. As the layer was too personally involved, the judge decided to removed him from the case.

- (a) remove himself from the
- (b) removes him from the
- (c) remove him from the
- (d) remove him on the
- (e) No correction required

119. Once the event is over, many people claim credit for success and disowning the responsibility for failure.

- (a) of success and disowning
- (b) for success but disowning
- (c) for success but disown
- (d) for success while disowned
- (e) No correction required

120. To practice any art properly require extra ordinarily patience especially at the beginning.

- (a) Required extraordinarily patience
- (b) Requires extraordinary patience
- (c) Requiring extraordinary patience
- (d) Requiring extraordinarily patience
- (e) No correction required

121. If he was to decide to go to college, I for one, would recommend that he went to Yale University.

- (a) If he were to decide to go to college
- (b) had he decide to go to college
- (c) In the event that he decides to go to college
- (d) Supposing he was, to decide to go to college
- (e) No correction required.

Directions (122-126): The Following questions have two blanks, each blank indicating that something has been omitted. Choose the set of words for each blank that best fits the meaning of the sentence as a whole.

122. As many as fifteen people had _____ me at the security check when I was travelling from Delhi _____ San Francisco.

- (a) Approached, to
- (b) Apprehended, from
- (c) Accosted, to
- (d) Assumed, from
- (e) None of these

123. People avoid eating non-vegetarian food _____ there is excess protein and fat that may be _____ for a good health.

- (a) because ,pernicious
- (b) as,counter-productive
- (c) since ,harmful
- (d) notwithstanding, harmful
- (e) None of these

124. Indian economy has seen many _____ but this one will surely sound the death _____ for us.

- (a) downswings , bed (b) downturns , knell
- (c) fluctuations , alarm (d) aberrations, siren
- (e) None of these.

125. I was lucky to have _____ the plane crash and come out _____.

- (a) survived , non-injured
- (b) lived , squeamishly
- (c) survived , unscathed
- (d) lived through , unpetulant
- (e) None of these.

126. It is a given that Japan would stem its economic _____ by doling _____ largesse to its people.

- (a) downslide , in (b) downturn , out
- (c) slide , up (d) slowdown , after
- (e) None of these

Directions (127-136): In the following passage there are blanks, each of which has been numbered. These numbers are printed below the passage and against each, five words suggested, one of which fits the blank appropriately. Find out the appropriate word in each case.

Seed quality is an..(127)..aspect of crop production. For ages, farmers have traditionally been selecting and..(128)..good quality seed, since it was in their interest to do so. They knew and understood the importance of quality seed in production.

However, with the advent of green revolution technology, based..(129)..on high-yielding dwarf varieties of wheat and rice, mainstream thinking changed. Agricultural scientists, for reasons that remain..(130)..began to doubt, the ability of farmers to maintain seed quality..(131)... Aided by the World bank, the ministry of agriculture launched of national seeds project in 1967. Under the project, spread into three phases, seed processing plants were..(132)..up in nine states. Six states were covered under phase three. All the huge processing plants were..(133)..to do was to provide 'certified' seeds of food crops, mainly self-pollinating crops, to farmers. In mid-1980s, the International Rice Research Institute (IRRI) in the philippines concluded a study which..(134)..that there was hardly any difference in the crop yields from transplanted rice and from the crop shown by broadcasted seeds. one would wonder why, in the first instance, were the, farmers, asked to..(135)..over to

transplanting paddy? The answer is simple-probably, to help the mechanical industries grow. since rice, is the staple food in Asia, tractor sales could any grow if there was a way to move the machine in the rice fields. No wonder, the sales of tractors, puddlers, reapers and other associated..(136)..soared in the rice growing areas.

127. (a) Irrational (b) main (c) brilliant
(d) important (e) empathetic

128. (a) maintaining (b) trusting (c) selling
(d) processing (e) creating

129. (a) necessarily (b) exceptionally (c) primarily
(d) regularly (e) truly

130. (a) unexplained (b) doubt (c) some
(d) true (e) sad

131. (a) himself (b) sometimes (c) proper
(d) improve (e) themselves

132. (a) established (b) created (c) set
(d) wound (e) thought

133. (a) tried (b) mattered (c) meaning
(d) supposed (e) expect

134. (a) renounced (b) showed (c) meaning
(d) supposed (e) expect

135. (a) shift (b) make (c) turn
(d) mull (e) switch

136. (a) sell (b) equipment (c) people
(d) technique (e) creatures

Directions (137-140): Rearrange the following seven sentences (A), (B), (C), (D), (E), (F) and (G) in the proper sequence to form a meaningful paragraph; then answer the questions given below them:

- A. However, achieving success is often preceded with frustration and sometimes learning to accept one's weaknesses as well as celebrating and building on strengths.
- B. While toddlers and preschoolers need constant supervision, school age children become gradually ready for more independence.
- C. Watching them try new activities, cheering them on at athletic events and applauding their accomplishments at recitals are usually some of the high points for most parents.
- D. When well equipped parents can be excellent coaches for their child no matter what the endeavor.
- E. Raising school age children can be awesome.
- F. However, learning to make good choices and exercise self-discipline does not come easily for many.
- G. Parents need to impart a moral code that the child gradually internalizes.

137. Which of the following should be the SECOND sentence after the rearrangement?

- (a) A (b) B (c) C
(d) D (e) E

138. Which of the following should be the FIRST sentence after the rearrangement?

- (a) A (b) C (c) B
(d) G (e) E

139. Which of the following should be the FIFTH sentence after the rearrangement?

- (a) E (b) D (c) B
(d) F (e) A

140. Which of the following should be the FOURTH sentence after the rearrangement?

- (a) A (b) B (c) C
(d) F (e) D



SBI Clerk Mains 2016 (Solutions)

REASONING ABILITY

Direction (1-5):

Floor	Person	Color
8	U	Pink
7	Y	Grey
6	S	Yellow
5	Z	Blue
4	T	Purple
3	V	Orange
2	X	Green
1	W	Red

1. (c); 2. (d); 3. (a);
4. (a); 5. (c);

Direction (6-10):

L F G M N H E O — Facing North

6. (e); 7. (b); 8. (c);
9. (c); 10. (c);

Direction (11-15):

11. (b); Since the first letter is vowel and the last letter is consonant, so both are to be coded as code of consonant i.e. of B which is *.
12. (c); Since first and last letters are consonants and in between there are two vowels, so both the vowels are to be coded as 8. So the code is 7\$8882.
13. (e); **Explanation:**
Converting the letters into symbols the code is,
D K P R T B
% 6 5 2 \$ *
14. (d); **Explanation:**
Since 1st and last letters are vowels, so both are to be coded as +. So the code is +5#\$2+
15. (a); **Explanation:**
Since 1st letter is a consonant and last is a vowel, so their codes are to be interchanged. So the code for HLEKBI is 13@6*9.

Direction (16-20): Will → ka

Meet → ja
Us → lu
You → hu
Today → la
temperature → ju
the → fu
of → na
maximum → fa

16. (b); 17. (a); 18. (b);
19. (b); 20. (c);

Direction (21-25): © → <

@ → ≤

% → >

\$ → ≥

★ → =

21. (a); $B < T = M > F$
 $B < M$ (True) $B < F$ (False)

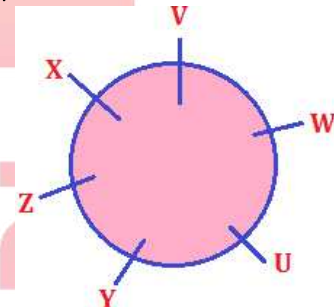
22. (b); $M = R > T \geq K$
 $K \leq M$ (False) $K < M$ (True)

23. (e); $W < D \leq H = N$
 $N \geq D$ (True) $W < N$ (True)

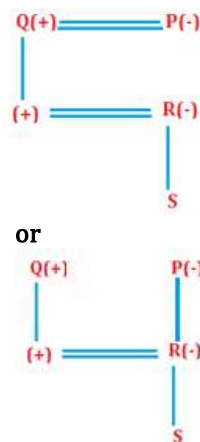
24. (d); $W \leq D \geq R < K$
 $R = W$ (False) $R > W$ (False)

25. (d); $F \geq J > V < N$
 $N \geq F$ (False) $N > J$ (False)

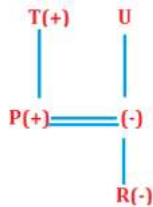
26. (e); From statement I and II both :



27. (b); From I: P is mother in law of R. or mother of R.

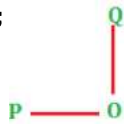


From II: P is father of R.



28. (d);

29. (a);



30. (b); Total 37 persons sitting in a row.

Direction (31-35):

Boys	<u>USPRQT</u>
Girls	<u>FEADBC</u>

31. (e);

32. (b);

33. (c);

34. (e);

35. (a);

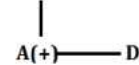
Direction (36-37):

36. (a)

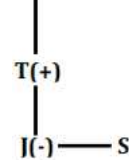
37. (d); $16+8+0+2+1=27$

Direction (38-40):

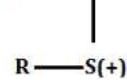
38. (b); B(-) — H(+)



39. (d); P(+)



40. (e); B(-) — C(+)



Direction (41-45):

Input: Kite 19 54 Give 31 Right 72 87 Dream Ace.

Step1: Ace Kite 19 54 Give 31 Right 72 Dream 87.

Step2: Dream Ace Kite 19 54 Give 31 Right 87 72.

Step3: Give Dream Ace Kite 19 31 Right 87 72 54.

Step4: Kite Give Dream Ace 19 Right 87 72 54 31.

Step5: Right Kite Give Dream Ace 87 72 54 31 19.

'Step-5' is the final step of this input.

41. (a);

42. (b);

43. (d);

44. (c);

45. (e);

Direction (46-50): Height $\rightarrow R > Q > S > V > T > P$

Weight $\rightarrow S > P > R > Q > T > V$

46. (e);

47. (b);

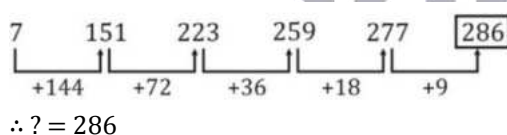
48. (d);

49. (c);

50. (a);

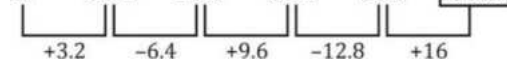
QUANTITATIVE APTITUDE

51. (c); Pattern is —



$\therefore ? = 286$

52. (b);



$\therefore ? = 36.6$

53. (b); Pattern is

$$5 \times 1 - 1 = 4$$

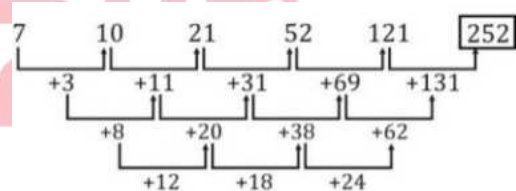
$$4 \times 2 - 2 = 6$$

$$6 \times 3 - 3 = 15$$

$$15 \times 4 - 4 = 56$$

$$56 \times 5 - 5 = 275$$

54. (d); Pattern is —



$\therefore ? = 252$

55. (e); Pattern is,

$$5 \times 1 - 2 = 3$$

$$3 \times 2 - 2 = 4$$

$$4 \times 3 - 2 = 10$$

$$10 \times 4 - 2 = 38 \Rightarrow ? = 10$$

56. (e); Let speed of stream be x km/hr.

$\therefore$ speed of boat in still water is 3x km/hr

$\therefore$ ATQ,

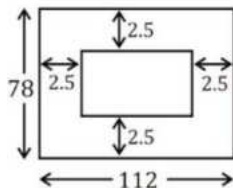
$$\frac{24}{3x+x} + \frac{24}{3x-x} = 6$$

$$\frac{24}{4x} + \frac{24}{2x} = 6 \Rightarrow \frac{6}{x} + \frac{12}{x} = 6$$

$$x = \frac{18}{6} = 3 \text{ km/hr}$$

$\therefore$ Speed of boat in still water = 9 km/hr

57. (d);



$$\therefore \text{Required cost} = [112 \times 78 - 107 \times 73] \times 2$$

$$= \text{Rs. } 1850$$

58. (b); Length of BD by pythagores theorem

$$BD = \sqrt{8^2 + 6^2}$$

$$= \sqrt{64 + 36} = 10$$

$$\therefore \text{Length of BC}$$

$$= \sqrt{(24)^2 + (10)^2}$$

$$= \sqrt{576 + 100}$$

$$= \sqrt{676}$$

$$= 26$$

59. (a); Let radius of circle be r meter

$$\therefore 2\pi r = 44$$

$$2 \times \frac{22}{7} \times r = 44$$

$$r = 7\text{cm}$$

$$\therefore BC = 14\text{ m}$$

$$\therefore AB = AC = 7\sqrt{2}\text{ m}$$

$$\therefore \text{Area of } \Delta ABC$$

$$= \frac{1}{2} \times 7\sqrt{2} \times 7\sqrt{2} = 49\text{ m}^2$$

60. (a); Radius of bigger semicircle = 14
& radius of smaller semicircle = 7
 $\therefore$ Required area

$$= \frac{1}{2} [\pi(14)^2 - 2 \times \pi(7)^2]$$

$$= \frac{1}{2} [196\pi - 98\pi] = \frac{1}{2} \times 98\pi = 154$$

61. (a); There are four cases $\rightarrow 3R, (1R, 2G), (2R, 1G), 3G$

$$\therefore \text{Required probability}$$

$$= \frac{{}^4C_3 + {}^4C_1 \times {}^6C_2 + {}^4C_2 \times {}^6C_1 + {}^6C_3}{{}^{15}C_3}$$

$$= \frac{4 + 4 \times 15 + 6 \times 6 + 20}{{}^{15}C_3}$$

$$= \frac{91 \times 5}{91 \times 5} = \frac{120}{91 \times 5} = \frac{24}{91}$$

62. (a); $4x + 7y = 42$... (i)

$$3x - 11y = -1$$
 ... (ii)

Multiplying (i) by 3 and (ii) by 4

$$12x + 21y = 126$$
 ... (iii)

$$12x - 44y = -4$$
 ... (iv)

Solving (iii) & (iv)

$$x = 7 \text{ \& } y = 2$$

$$\therefore x > y$$

63. (c); I. $9x^2 - 29x + 22 = 0$

$$9x^2 - 18x - 11x + 22 = 0$$

$$9x(x - 2) - 11(x - 2) = 0$$

$$\therefore x = 2 \text{ or } \frac{11}{9}$$

$$\text{II. } y^2 - 7y + 12 = 0$$

$$y^2 - 3y - 4y + 12 = 0$$

$$y(y - 3) - 4(y - 3) = 0$$

$$y = 3, 4$$

$$\therefore y > x$$

64. (d); I. $3x^2 - 12x + 8x - 32 = 0$
 $3x(x - 4) + 8(x - 4) = 0$
 $\therefore x = 4, \frac{-8}{3}$
 II. $2y^2 - 17y + 36 = 0$
 $2y^2 - 9y - 8y + 36 = 0$
 $y(2y - 9) - 4(2y - 9) = 0$
 $\therefore y = 4, \frac{9}{2}$
 $\therefore y \geq x$

65. (a); I. $3x^2 - 19x - 14 = 0$
 $3x^2 - 21x + 2x - 14 = 0$
 $3x(x - 7) + 2(x - 7) = 0$
 $\therefore x = 7 \text{ or } \frac{-2}{3}$
 II. $2y^2 + 5y + 3 = 0$
 $2y^2 + 2y + 3y + 3 = 0$
 $2y(y + 1) + 3(y + 1) = 0$
 $y = -1 \text{ or } \frac{-3}{2}$
 $\therefore x > y$

66. (e); I. $x^2 + 2 \times 7 \times x + (7)^2 = 0$
 $\therefore (x + 7)^2 = 0$
 $\therefore x = -7$
 II. $y(y + 9) = 0$
 $\therefore y = 0 \text{ or } -9$
 $\therefore$ No relation.

67. (e); Average salary = $\frac{1000 \times 43000}{1600} = 26875$

68. (b); Number of employees in :
 PNB = 1600
 OBC = 1700
 SBI = 2100

69. (e); Required ratio = $15000 \times 600 : 35000 \times 900$
 $= 2 : 7$

70. (e); Required percentage = $\frac{400}{600} \times 100$
 $= 66\frac{2}{3}\%$

71. (b); Required percentage = $\frac{20000 \times 900}{25000 \times 800} \times 100 = 90\%$

72. (b); Required No. = $\frac{280+354+343+535+433}{5} = 389$

73. (d); Required difference = $(235 + 567) - 134 = 668$

74. (e); Required % = $\frac{320+346+436}{255+343+545+546+453} \times 100$
 $= \frac{1102}{2142} \times 100 \approx 51\%$

75. (d); Required animals
 $= \frac{65}{100} \times (411 + 535 + 534) = 962$

76. (c); Required No. of lions = $\frac{3}{4}(135 + 325 + 345 + 267)$
 $= 804$

77. (c); Let their salaries be 100, 300 and 400
 Their new salaries = $105 : 330 : 460$
 $= 21 : 66 : 92$

78. (b); Work done by the third pipe in 1 min.
 $= (1/50) - [(1/60) + (1/75)] = [(1/50) (3/100)]$
 $= (1/100)$
 $\therefore$ The third pipe can alone fill the tank in 100 minutes.

79. (e); Both the statements together is not sufficient.

80. (d); Both statements alone is sufficient.

Let age of A is x and age of B is y.

$$\therefore 3x = y \quad \dots (i)$$

From statement I: $\frac{x+10}{y+10} = \frac{3}{7} \dots (ii)$

Solving equations (i) and (ii), $x = 20, y = 60$

From statement II:

$$\frac{x-10}{y-10} = \frac{1}{5}$$

$$\Rightarrow 5x - 50 = y - 10$$

$$\Rightarrow 5x - y = 40 \quad (iii)$$

From equations (i) and (iii), $x = 20, y = 60$

81. (c); Let length the train be x.

From statement I:

$$\text{Speed} = \frac{x}{8}$$

From statement II:

$$\text{Speed} = \frac{x+50}{20}$$

$$\text{Solving this, } x = \frac{400}{12} = \frac{100}{3} \text{ meter}$$

82. (e); From I and II we find $a + b = 2z$
 we can not find $a + b$ from I and II together.

83. (e); Let age of A, B and C be x year, y year and z year respectively

Data is not sufficient.

From statement I:

$$x = \frac{80}{100} \times z$$

From statement II:

$$y = \frac{60}{100} \times z$$

From these two equations $\frac{x}{y} = \frac{4}{3}$ but cannot find x

and y separately.

84. (d); Let the present age of Ranjana and Rakhi be 15x and 17x

$$\frac{15x+6}{17x+6} = \frac{9}{10}$$

$$x = 2$$

$\therefore$ Age of Ranjana after 6 years
 $= 15 \times 2 + 6 = 36$ years.

85. (b); S.I. = 7200

$$R = \frac{S.I \times 100}{P \times T} = \frac{7200 \times 100}{20,000 \times 3} = 12\%$$

$$C.I = 20000 \left[\left(1 + \frac{12}{100} \right)^3 - 1 \right]$$

$$= 8098.56$$

86. (a); Here volume of water emptied by the second pipe will be 4 times to that of first Hence, Time take will be 1/4 of the first pipe. When both the pipes are open the part of the tank emptied in 1 minute = 1/8 Hence the tank will be emptied in 8 minutes.

87. (b); Total CP = 2000 + 750 = 2750

$$\text{Total SP} = \frac{120}{100} \times 2000 + \frac{95}{100} \times 750$$

$$= 2400 + 712.5$$

$$= 3112.5$$

$$\therefore \text{Total gain} = 3112.5 - 2750 = 362.5 \text{ Rs.}$$

88. (a); Let Man = x

$$\text{Woman} = 2x$$

$$\therefore \frac{8}{x} + \frac{4}{2x} = \frac{1}{6}$$

$$\frac{20}{2x} = \frac{1}{6}$$

$$x = 60$$

$$\therefore \text{Man} = 60, \text{ woman} = 120$$

$$\text{Required No. of days} = \frac{\frac{2}{3}}{\frac{4}{60} + \frac{8}{120}}$$

$$= \frac{2 \times 120}{3(16)}$$

$$= 5 \text{ days}$$

89. (c); Let their investment be x, 2x and 4x

$$\therefore A \rightarrow 6x + 6 \times \left(x + \frac{x}{2} \right) = 6x + 9x = 15x$$

$$B \rightarrow 6 \times 2x + 6 \times 4x = 36x$$

$$C \rightarrow 6 \times 4x + 6 \times \left(4x - \frac{1}{4} \times 4x \right) = 24x + 18x = 42x$$

$$\therefore \text{Required Ratio} = 15 : 36 : 42$$

$$= 5 : 12 : 14$$

90. (b); Number of questions attempted correctly =

$$70\% \text{ of } 10 + 50\% \text{ of } 30 + 60\% \text{ of } 45$$

$$= 7 + 15 + 27 = 49$$

$$\text{Passing grade} = (60/100) \times 85 = 51$$

$$\text{Reqd. Ans} = 51 - 49 = 2$$

91. (c); Age of new man = 28 + 28 = 56 years

92. (b); 11% $\rightarrow$ 5236

$$1\% \rightarrow 476$$

$$\therefore (11 + 19 + 7) = 37\% \rightarrow 17612 \text{ Rs.}$$

93. (c); Probability = $\frac{2c_1 \times 3c_2 + 2c_2 \times 3c_1}{5c_3}$

$$= \frac{2 \times 3 + 1 \times 3}{10} = \frac{9}{10}$$

94. (d); $B = \frac{1}{\frac{1}{12} - \frac{1}{20}} = \frac{1}{\frac{5-3}{60}}$

$$B = 30 \text{ days}$$

$$\therefore \text{Required No. of days} = \frac{1}{\frac{1}{20} + \frac{1}{60}} = \frac{60}{4} = 15 \text{ days}$$

95. (b); $\frac{132 \times 5}{18} = \frac{100 + 165}{t}$
 $t = \frac{275 \times 18}{132 \times 5}$
 $t = 7.5$ seconds

96. (b); $\frac{3x}{12x+3} = \frac{3x}{15x}$
 $\therefore$ New ratio = 1 : 5
 $\therefore$ Required % = $\frac{1}{6} \times 100\%$
 $= \frac{50}{3}\% = 16\frac{2}{3}\%$

97. (d); $\begin{array}{l} 3 \text{-----} A \text{-----} 30 \\ 2 \text{-----} B \text{-----} 45 \end{array} \rightarrow 90$
 Let B turned off after T min
 $2T + 3 \times 20 = 90$
 $T = 15$ min

98. (a); $(2M + 3B)10 = (3M + 2B)B$
 $20M + 30B = 3MB + 2B^2$
 $2M = 7B$
 $\therefore 10B = 10$ days
 $\therefore B = \frac{1}{100}$ days
 $\therefore 2M + 1B = 7B + B$

$= 8B$
 $= \frac{8}{100} = \frac{2}{25}$
 $\therefore$ Required No. of days = $12\frac{1}{2}$ days

99. (a); Ratio of their speeds = $\sqrt{\frac{28}{5}} : \sqrt{\frac{20}{7}}$
 $\therefore \sqrt{\frac{28}{5}} \rightarrow 14$
 $\therefore \sqrt{\frac{20}{7}} \rightarrow \frac{14}{\sqrt{28}} \times \sqrt{5} \times \frac{\sqrt{20}}{\sqrt{7}}$
 $= \frac{14}{2\sqrt{7}} \times \sqrt{5} \times \frac{2\sqrt{5}}{\sqrt{7}} = \frac{14 \times 5}{7} = 10$ kmph

100. (a); Area = $2x^2$ m²



$\therefore 2x^2 \times 2 = 256$
 $x^2 = 64$
 $x = 8$
 $\therefore$ Required length = $2 \times 8 = 16$ m

ENGLISH LANGUAGE

101. (c); 102. (e); 103. (c);
 104. (c); 105. (b); 106. (b);
 107. (d); 108. (e); 109. (e);
 110. (d); 111. (e); 112. (d);
 113. (e); 114. (e); 115. (e);
 116. (c);
 117. (c); 'Earn a decent living' is the only suitable syntax to be used. It means 'to earn well' that fulfils the sentence's context.
 118. (c); After 'to' we should use 'V₁' to show purpose.
 119. (c); 'Disowning' is the improper usage. We have to use 'disown' here so that syntax gets correct
 120. (b); 'Art' is singular subject, so it should agree with a singular verb. Hence, 'requires' is suitable expression.
 121. (a); To express the subjunctive mood. Auxiliary 'were' is used in the sentence.

122. (c); Accost means to approach someone with an allegation or blame, so 3rd option is the most appropriate one.
 123. (c); Harmful-not good for health, so 3rd option is most appropriate one
 124. (b); downturns means- a decline in economic, knell means -the sound of a bell
 125. (c); survived means- continue to live or exist, unscathed means- without suffering any injury, damage, or harm.
 126. (b); downturn, out "dole out" is the correct phrase which means to help someone with money and gifts.
 127. (d); 128. (a); 129. (c);
 130. (a); 131. (e); 132. (c);
 133. (d); 134. (b); 135. (e);
 136. (b); For questions (136-140) THE CORRECT SEQUENCE IS ECADBF
 137. (c); 138. (e); 139. (c);
 140. (e);

