REASONING ABILITY

Directions (Qs. 1-5): Study the given information carefully and answer the given questions.

L, M, N, O, P, Q, R and S are sitting around a circular table at equal distances between each other, but not necessarily in the same order. Some of the people are facing the centre while some face outside (i.e. in a direction opposite to the centre) .

O sits third to the right of L. Both Q and L face the same direction. Only three people sit between P and M. P is neither an immediate neighbour of L nor O. M faces outside. R sits to the immediate left of M. Q sits to the immediate right of N. Neither L nor Q is an immediate neighbour of N. Both the immediate neighbours of M face the opposite directions. S sits second to the right of R. Both R and Q face the same direction as S. P face a direction opposite to that of N.

1. How many people in the given arrangement face the centre?
  (a) One   (b) Four
  (c) Five   (c) Three
  (e) Two

2. What is N's position with respect to P?
  (a) Immediate left   (b) Third to the right
  (c) Fourth to the right   (d) Second to the left
  (e) Immediate right

3. Four of the following five are alike in a certain way based on the given seating arrangement and so form a group. Which is the one that does not belong to that group?
  (a) L   (b) S
  (c) N   (d) Q
  (e) R

4. Which of the following is true regarding Q as per the given arrangement?
  (a) Only three people sit between Q and R.
  (b) Q sits second to right of O.
  (c) Q faces outside.
  (d) None of the given statements is true.
  (e) Q sits second to the left of P.

5. Who amongst the following sits exactly between M and the one who sits second to the left of P?
  (a) L   (b) N
  (c) R   (d) Q
  (e) O

Directions (Qs. 6-10): Read the following information to answer the given questions.

P, Q, R, S, T, U, V and W are seated in a straight line but not necessarily in the same order. Some of them are facing South while some are facing North. T faces South. Only three people sit to the left of T. Only two people sit between T and Q. U sits third to the right of W. W is neither an immediate neighbour of T nor Q. W does not sit at any of the extreme ends of the line. Both the immediate neighbours of S face North. S is not an immediate neighbour of W. Only one person sit between S and P. P faces same direction as W. Immediate neighbours of Q face opposite directions (i.e. if one neighbour faces North then the other South and *vice-versa*.) Persons sitting at extreme ends face opposite directions. R faces a direction opposite to S.

6. How many persons are seated between T and P?
  (a) Four   (b) More than four
  (c) One   (d) Three
  (e) Two

7. Which of the following pairs represents persons seated at the two extreme ends of the line?
  (a) R, T   (b) P, V
  (c) P, U   (d) Q, R
  (e) R, S

8. Which of the following is true about V with respect to the given arrangement?
  (a) Only two people sit between V and Q.
  (b) Only one person sits to the right of V.
  (c) None of the given options is true.
  (d) U is one of the immediate neighbours of V.
  (e) R sits second to the right of V.

9. Who amongst the following sits to immediate left of R?
  (a) T   (b) P
  (c) W   (d) Q
  (e) S

10. Four of the following five are alike in a certain way based on the given arrangement and so form a group. Which is the one that does not belong to that group?
  (a) R   (b) U
  (c) P   (d) W
  (e) None of these

Directions (Qs. 11-15): Study the following information to answer the given questions.

Eight people A, B, C, D, E, F, G and H live on separate floor of an 8-Floor building but not necessarily in the same order. Ground floor is numbered 1, first floor is numbered 2 and so on until the topmost floor is numbered eight.

Only two people live below the floor on which G lives. Only one person lives between G and A. H lives on an odd numbered floor but not on floor number 7.

Only two people live between H and B. B does not live on the topmost floor.

A does not live on the lowermost floor.

C lives immediately below D. Neither C nor E lives on floor number 6.

11. How many people live between the floors on which A and D live?
(a)   Three   (b)   More than three
(c)   None   (d)   Two
(e)   One

12. Who lives on the floor immediately below G?
(a)   F   (b)   E
(c)   D   (d)   B
(e)   C

13. On which of the following floor numbers does D live?
(a)   4   (b)   1
(c)   8   (d)   5
(e)   7

14. 'Which of the following is true 'with respect to F as per the given arrangement?
(a)   Only three people live between F and B.
(b)   Only three people live above F.
(c)   F lives on the floor number 6.
(d)   None of the given options is true.
(e)   F lives immediately above D.

15. Who among the following lives on floor number 5?
(a)   D   (b)   C
(c)   E   (d)   B
(e)   A

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

Seven friends namely, M, N, O, P, Q, R and S attend different language classes namely, French, English, Spanish, Sanskrit, Chinese, German and Japanese, not necessarily in the same order, from Monday to Sunday (of the same week).

M attends a class on Friday. Only two people attend classes between M and the one who is learning Sanskrit. R attends a class immediately before P. Neither R nor P is learning Sanskrit. Only one person attends a class between R and the one who is learning Spanish. The one who is learning Spanish deos not have a class on Monday. N attends a class immediately before the one who is learning French. M is not learning French. Only one person has a class between R and Q. O is learning German. Only two people have classes between O and the one who is learning Chinese. Q is not learning Japanese.

16. Which of the following represent those who have language classes immediately before and immediately after N?

(a)   P, M   (b)   Q, M
(c)   Q, R
(d)   Other than those given as options
(e)   R, P

17. Which of the following language is Q learning?
(a)   Other than those given as options
(b)   Chinese
(c)   English
(d)   Spanish
(e)   Sanskrit

18. As per the given arrangement Q is related to Chinese and R is related to Japanese in a certain way. To which of the following is P related to in the same way?
(a)   Sanskrit
(b)   Other than those given as options
(c)   Spanish
(d)   English
(e)   French

19. Four of the following five form a group as per the given arrangement. Which of the following that does not belong to that group?
(a)   Q-Tuesday   (b)   N-Thursday
(c)   S-Sunday   (d)   M-Saturday
(e)   P-Friday

20. On which of the following days does P have a class?
(a)   Monday   (b)   Thursday
(c)   Wednesday   (d)   Tuesday
(e)   Sunday

Directions (Qs. 21-25): In these questions, two/three statements followed by two conclusions numbered I and II have been given. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Give answer
(a)   Only conclusion I is true.
(b)   Only conclusion II is true.
(c)   Both conclusions are true.
(d)   Neither conclusion I nor II is true.
(e)   Either conclusion I or II is true.

21. **Statements**   All apartments are houses.
                    No apartment is a motel.
    Conclusions   I. Some houses being motels is a possibility.
                    II. No house is a motel.

22. **Statements**   All plants are trees.
                    Some trees are weeds.
                    All weeds are shrubs.
    Conclusions   I. No shrub is a plant.
                    II. All weeds being trees is a possibility.

23. **Statements**   Some drinks are juices.
                    All juices are beverages.
                    No beverage is a solid.
    Conclusions   I. No juice is a solid.
                    II. No drink is a solid.

24. **Statements**   Some drinks are juices.
                    All juices are beverages.
                    No beverage is a solid.
    Conclusions   I. Some drinks are beverages.
                    II. All drinks are beverages.

25. Statements All plants are trees.
Some trees are weeds.
All weeds are shrubs.
Conclusions I. At least some trees are shrubs.
II. All plants being shrubs is a possibility.

Directions (Qs. 26-30): Study the given information carefully and answer the questions.

When a word and number arrangement machine is given an input line of words and numbers, it arranges them following a particular rule. The following is an illustration of input and rearrangement. (All the numbers are two-digit numbers)

Input	46 span role 62 79 into main 13 39 deal
Step I	79 46 role 62 into main 1339 deal span
Step II	62 79 46 into main 1339 deal span role
Step III	46 62 79 into 13 39 deal span role main
Step IV	39 46 62 79 13 deal span role main into
Step V	13 39 46 62 79 span role main into deal

Step V is the last step of the above arrangement as the intended arrangement is obtained.
As per the rules followed in the given steps, find the appropriate steps for the given input.

Input 11 east 54 vent kind 35 over 27 71 bowl

26. How many elements are there between '35' and 'kind' in the last step?
(a) Two (b) Four
(c) One (d) Three
(e) None

27. What is the position of 'bowl' from the right of '71' in the second step?
(a) Seventh (b) Fifth
(c) Sixth (d) Second
(e) Third

28. Which of the following represent the two consecutive elements to the immediate right of 'over' in the second last step?
(a) bowl, vent (b) 11, bowl
(c) vent, kind (d) 71,11
(e) kind, east

29. Which is the third element to the left of the sixth element from the left element in the first step?
(a) over (b) 35
(c) bowl (d) east
(e) 27

30. In step II, which element appears exactly between '27' and 'over'?
(a) Only 11 (b) Only 71
(c) Both kind and 71 (d) Only kind
(e) Both bowl and vent

Directions (Qs. 31-35): In these questions, relationship between different elements is shown in the statements. The statements are followed by conclusions. Study the conclusions based on the given statements and select the appropriate answer.

(a) Only conclusion I is true.
(b) Only conclusion II is true.
(c) Both conclusions are true.
(d) Neither conclusion I nor II is true.
(e) Either conclusion I or II is true.

31. Statements $N < A = T \geq Z; R \geq T; Z < S$
Conclusions I. $R > N$ II. $S > Z$
32. Statements $L \leq E = A > P; Y > E > R$
Conclusions I. $Y \geq L$ II. $A > R$
33. Statements $D < S \geq L > U; Q < S$
Conclusions I. $Q < D$ II. $U > Q$
34. Statements $L \leq E = A > P; Y \geq E > R$
Conclusions I. $P \geq R$ II. $A \leq Y$
35. Statements $N < A = T \geq Z; R \geq T; Z < S$
Conclusions I. $R = Z$ II. $Z < R$

Directions (Qs. 36 & 37): Read the given informations and answer the question.

36. Company X- one of the largest automobile manufacturing companies of the country has started its own dedicated Colour Design Department which decides which colour will be given to which model of colour.
Which of the following may not be a reason for starting this colour dedicated department by the said company?
(a) Although people usually come with a clear idea about the basic features in a car within a stipulated budget, colour is the trial factor which influences their decision prior to purchase.
(b) It has been recently suggested by experts that the depth and brightness of colour can be used to accelerate the shape and size of a car so that it appeals to prospective customers.
(c) Two years ago a similar department was started by company R, one of the biggest competitors of company X.
(d) As per market research done by the company many customers have chosen cars of competitor companies only because the colour of the cars of company X did not match their expectations.
(e) As per recent research the colour of the car is an important aspect in the customer is likely to choose a car looking at its colour at first sight.

37. Some preschools in city Y hav recently discontinued the physical safety training for toddlers which was compulsorily provided to staff members for three months after joining.
Which of the following may be a reason for the decision taken by some of the schools in city Y?
(a) Even after employing trained staff members and providing further training to them, a few parents in city Y do not send their children to preschools as they are worried about the safety of their children.
(b) A manual of safety is followed by all preschools of city Y.
(c) Some teachers, who have been associated with these preschools for long, have suggested that the training which was provided to the institute was a little different as compared to the training provided.
(d) All preschools in city Y have recently started employing only those people who have a certification in physical safety of toddlers and providing additional training simply leads to duplication of what they have already learnt.
(e) There is no authority in city Y to regulate whether the staff members of schools are provided training.

38. The agriculture experts of country X experimented the usage of genetically-modified cotton plants to manufacture clothes. After the post-manufacture analysis, it was decided to discontinue the use of such modified plants and grow only the natural ones.

Which of the following statements (if taken to be true) best supports the decision of the agricultural exports?

(a) The trend of polyester clothes has dominated the markets of country X since the past two years but now the demand for cotton clothes has gone up again.

(b) The weather conditions of country X is such that the residents of the country have to resort to only woollen clothes.

(c) The high rate of pest attack in chemically grown plants as compared to the natural plants makes it unfeasible and uneconomic to grow.

(d) Other few genetically grown plants have proved to be successful in country X.

(e) Growing of genetically modified plants does not necessitate the use of humus-rich soil and hence is easy to grow.

Directions (Qs. 39-40): Read the following information and the sentences A, B, C, D, E and F given below it carefully and answer the given questions.

Town ABC has seen very few takers. 48% fiats are lying unsold ever since its construction. Prices should be cut by 20% per sq feet in order to match the ongoing market price of ₹ 6800 per sq feet. This would bring the buyers back and ideal with this slump in sales.

A. Market price of the flats are controlled by the government which cannot be altered by independent authorities.

B. All present flats are being sold at more than more ₹ 8000 per sq feet.

C. The township ABC is located far from the main city and has poor transport facilities for the same.

D. In order to recover the investments made by the builders, they must make a profit of minimum ₹ 10000 per sq feet per flat sold.

E. No buyer is willing to pay a price more than the ongoing market rate.

F. There have been numerous complaints about poor construction material and apathy of builders towards the same by people already residing in the township.

39. Which of the given statements weakens the promise that lack of buyers is only because of the price 0 the flats?

(a) Only D   (b) A and B
(c) Only A   (d) A and E
(e) C and F

40. Which of the following may prove that 30% price cut may not be a feasible step to be taken by the builders?

(a) Only D   (b) A and B
(c) Only E   (d) E and B
(e) Only B

Directions (Qs. 41-43): Study the following information and answer the given questions.

Y is the sister of J. L is the wife of J. L has only one son R. K is the mother of L. K is married to D. D has only one son and only one daughter.

41. As per the given information, how is J related to K?

(a) Son   (b) Son-in-law
(c) Niece   (d) Nephew
(e) Daughter-in-law

42. As per the given information, how is R related to Y?

(a) Nephew   (b) Cannot be determined
(c) Uncle   (d) Niece
(e) Aunt

43. If L is the sister of B, then how is B related to J?

(a) ster-in-Iaw   (b) Cannot be determined
(c) Brother   (d) Brother-in-law
(e) Uncle

Directions (44-48): Study the following information and answer the questions given below.

In a conference 8 people Anshu, Ankit, Kapil, Sachin, Jatin, Nikhil, Sneha and Rohit from different cities Haldia, Patna, Gaya, Kochi, Mumbai, Delhi, Shimla and Pune not necessarily in same order sitting around a rectangular table.

Three persons are sitting on each longer side and each on the smaller sides. Sachin is sitting second to the right of the person who is from Pune. Jatin is sitting third to the left of the person who is from Delhi. Nikhil and Sneha are sitting opposite each other. Kapil is sitting diagonally opposite the person from Shimla. Ankit is sitting opposite the person who is from Haldia. The person from Kochi is sitting second to the right of the person from Mumbai and second to the left of Anshu, who is not sitting near the person who is from Shimla. Sneha is sitting on the smaller side and to the right of the person who is from Shimla. Persons from Mumbai and Kochi are not on the same side of the table. The person from Kochi is sitting third to the right of the person from Pune, who is not sitting diagonally opposite the person from Patna. The person from kochi is third to the left of Kapil. Nikhil sits second to the left of Rohit. The person from Patna sits opposite to the person from Mumbai.

44. Who is sitting third to the right of the person from Delhi?

(a) Jatin   (b) Person from Mumbai
(c) Anshu   (d) Person from Shimla
(e) None of these

45. Who is definitely sitting diagonally opposite to Sachin?

(a) Anshu   (b) Kapil
(c) Person from Patna   (d) Person from Gaya
(e) Can't be determined

46. According to the sitting arrangement what will come in place of question mark?

Sachin : Kochi :: Kapil : ?

(a) Delhi   (b) Mumbai
(c) Gaya   (d) Pune
(e) None of these

47. From which city does Anshu belong?

(a) Patna   (b) Haldia
(c) Mumbai   (d) Pune
(e) Can't be determined

48. Which of the following combinations is definitely correct?

(a) Rohit -Pune   (b) Sachin - Mumbai
(c) Anshu-Gaya   (d) Sneha - Kochi
(e) None of these

Directions (49-50): Read the given information carefully and answer the given question.

Ram is 9 m to the south of Ramsey. Ramsey is 5 m to the east of Ramandeep. Ramandeep is 4 m to the north of Raman. Ram Singh is 3 m west of Raman. Ramanand is 7 m south of Ram Singh. RamKunj is 8 m east of Ramanand.

49. If Ramada is 5 m to the west of Ram, then what is the distance between Raman and Ramada?
- (a) 8m
- (b) 9m
- (c) 5m
- (d) 2m
- (e) 6m

50. How far and in which direction is Ramsey from Ramkunj?
- (a) 11 m to the south
- (b) 7 m to the north
- (c) 11 m to the north
- (d) 7 m to the south
- (e) 11 m to the west

QUANTITATIVE APTITUDE

Directions (Qs. 51-55): What approximate value will come in place of question mark (?) in the given questions? (You are not expected to calculate exact value.)

51. 105.27% of 1200.11 + 11.80% of 2360.85 = 21.99% of ? + 1420.99
- (a) 500
- (b) 240
- (c) 310
- (d) 550
- (e) 960

52. 0.98% of 7824 + 4842 ÷ 119.46 − ? = 78
- (a) 30
- (b) 60
- (c) 40
- (d) 50
- (e) 70

53. $(41.99^2 - 18.04^2) - ? = 13.11^2 - 138.99$
- (a) 4004
- (b) 1200
- (c) 1720
- (d) 8432
- (e) 1410

54. $24.96^2 / (34.11 + 20.05) + 67.96 + 89.11 = ?$
- (a) 884
- (b) 546
- (c) 252
- (d) 424
- (e) 170

55. $\sqrt{(2025.11)} \times \sqrt{(256.04)} + \sqrt{(399.95)} \times \sqrt{(?)} = 33.98 \times 40.11$
- (a) 1682
- (b) 1024
- (c) 1582
- (d) 678
- (e) 1884

Directions (Qs. 56-60): What should come in place of question mark (?) in the fol/owing number series?

56. 13 13 19 43 103 ?
- (a) 221
- (b) 227
- (c) 223
- (d) 217
- (e) None of these

57. 27 13 12 16.5 ? 75
- (a) 30.5
- (b) 31.5
- (c) 37.5
- (d) 39.5
- (e) None of these

58. 17 19 42 132 ? 2690
- (a) 532
- (b) 536
- (c) 538
- (d) 546
- (e) None of these

59. 25 29 67 217 ? 4501
- (a) 885
- (b) 887
- (c) 889
- (d) 891
- (e) None of these

60. 21 38 59 84 113 ?
- (a) 138
- (b) 140
- (c) 142
- (d) 146
- (e) None of these

Directions (Qs. 61-65): In the given questions, two equations numbered I and /I are given. Solve both the equations and mark the appropriate answer.

- (a) x > y
- (b) x ≥ y
- (c) x < Y
- (d) Relationship between x and y cannot be determined
- (e) x ≤ y

61. I. $6x^2 + 25x + 24 = 0$ II. $12y^2 + 13y + 3 = 0$

62. I. $12x^2 - x - 1 = 0$ II. $20y^2 - 41y + 20 = 0$

63. I. $10x^2 + 33x + 27 = 0$ II. $5y^2 + 19y + 18 = 0$

64. I. $15x^2 - 29x - 14 = 0$ II. $6y^2 - 5y - 25 = 0$

65. I. $3x^2 - 22x + 7 = 0$ II. $y^2 - 20y + 91 = 0$

Directions (Qs. 66-70): In each of the given questions, one questions and two statements numbered I and II are given. you have to decide whether the data given in both statements are sufficient to answer the question or not. Read both the satements and give answer

- (a) if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
- (b) if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
- (c) if the data either in statement I alone or in statement II alone are sufficient to answer the question.
- (d) if the data in both statements I and II together are not sufficient to answer the question.
- (e) if the data in both the statements I and II together are necessary to answer the question.

66. By how many years is Rasika younger than her brother Sunil?
- I. Ratio between Rasika's present age and Sunil's age after four years is 5 : 7 respectively.
- II. Ratio between Rasika's age four years ago and Sunil's present age is 2 : 3 respectively.

67. What is the quantity of milk in 80 litres of mixture of milk and water?
- I. If 8 litres of mixture is replaced by equal quantity of water the ratio of milk and water in the mixture becomes 27 : 13 respectively.
- II. If 16 litres of mixture is replaced by equal quantity of milk, the ratio of milk and water in the mixture becomes 4 : 1 respectively.

68. Neeraj invested certain amount in schemes A and B for 2 ears in the ratio of 3 : 5 respectively. The schemes A and B offer compound interest compound annually and simple interest respectively. What is the amount invested in scheme A?
   I.   Rate of interest offered by scheme A is 20% per annum and the rate of interest offered by scheme B is 25% less than that offered by scheme A.
   II.   Amount of interest accrued from scheme B is more than the amount of interest accrued from scheme A by ₹ 900.

69. Two friends X and Y start running towards each other at the same time from points A and B respectively and meet after 135 minutes. At what speed is X running?
   I.   Point B is 45 km away from point A and speed of X is 150% of the speed of Y.
   II.   Distance covered by Y was 18 km.

70. What is the cost of painting two adjacent walls of a hall having no door or window at ₹450 per m²?
   I.   Length and breadth are in the ratio of 3 : 2 respectively.
   II.   Perimeter of the hall is 50 m and height is one-fourth of the perimeter.

71. The speed of the boat in still water is 5 times the speed of the current. It takes 1.1 hours to row to point B from point A downstream. The distance between point A and point B is 13.2 km. How much distance will it cover in 312 minutes upstream?
(a) 43.2 km   (b) 48 km
(c) 41.6 km   (d) 44.8 km
(e) 40 km

72. 24 men can complete a piece of work in 15 days. 2 days after the 24 men started working, 4 men left the work. How many more days will the remaining men now take to complete the remaining work?

(a) $15\dfrac{3}{5}$ (b) $16\dfrac{4}{5}$

(c) $11\dfrac{2}{5}$ (d) $10\dfrac{4}{5}$

(e) $14\dfrac{1}{5}$

73. In a primary school, the average weight of male students is 65.9 kg and the average weight of female students is 57 kg. If the average weight of all the students (both male and female) is 60.3 kg and the number of male students in the school is 66, then what is the number of female students in the school?
(a) 154   (b) 162
(c) 168   (d) 180
(e) 112

74. Shashi had a sum of money. Two-third of the total money he invested in scheme A for 6 years and rest of the money he invested in scheme B for 2 years. Scheme A offers simple interest at a rate of 12% per annum and scheme B offers compound interest (compounded annually) at a rate of 10% per annum. If the total sum obtained from both the schemes is ₹ 2805, what was the total amount invested by him in scheme A and scheme B together?
(a) ₹ 1500   (b) ₹ 5100

(c) ₹ 1000   (d) ₹ 2000
(e) ₹ 1464

75. The radius of a cylinder is 5 m more than its height. If the curved surface area of the cylinder is 792 m². What is the volume of the cylinder? (in m³)
(a) 5712   (b) 5244
(c) 5544   (d) 5306
(e) 5462

76. A dealer marked the price of an item 40% above the cost price. Once he gave successive discounts of 20% and 25% to a particular customer. As a result, he incurred a loss of ₹ 448. At what price did he sell the item to the mentioned customer?
(a) ₹ 2416   (b) ₹ 2352
(c) ₹ 2268   (d) ₹ 2152
(e) ₹ 2578

77. The respective ratio between Parul's present age and Rohit's present age is 7: 5. The sum of their ages 5 years from now will be 94. After how many years, Rohit's age will be equal to Parul's present age?
(a) 21   (b) 7
(c) 14   (d) 18
(e) 24

78. 35 kg of a type of sandal powder (type A) which costs ₹ 614 per kg was mixed with certain amount of another type of sandal powder (type B), which costs ₹ 695 per kg. Then the mixture was sold at ₹ 767 per kg and 18% profit was gained. What was the amount of type B sandal powder in the mixture?
(a) 24 kg   (b) 28 kg
(c) 32 kg   (d) 36 kg
(e) 20 kg

79. Ashok left from place A (towards place B) at 8 am and Rahul left from place B (towards place A) at 10 am. The distance between place A and place B is 637 km. If Ashok and Rahul are travelling at a uniform speed of 39 km/h and 47 km/h respectively, at what time will they meet?
(a) 5 : 30 pm   (b) 4 : 30 pm
(c) 5 : 00 pm   (d) 4 : 00 pm
(e) 3 : 30 pm

80. A started with an investment of ₹ 28000. After 2 months, B joins with ₹ 20000 and after another two months C joins with ₹ 18000. At the end of 10th month from start of the business, if B withdraws ₹ 2000 and C withdraws ₹ 2000 what is the respective ratio in which profit should be distributed among A, B and C at the end of the year?
(a) 12 : 7 : 5   (b) 12 : 9 : 5
(c) 12 : 6 : 3   (d) 14 : 7 : 5
(e) 11 : 9 : 7

81. The metal to be used for covering a cylinder having external radius 5 cm, height 21 cm and thickness 1 cm is to be cast from a cylinder. What should be the height of the cylinder of radius 3 cm from which this casting can be done?
(a) 12 cm   (b) 39 cm
(c) 21 cm   (d) 20 cm
(e) 18 cm

82. A, B and C can alone complete a work in 15, 25 and 30 days respectively. A and B started the work and after some days A is replaced by C. Now the work is completed in a further of $6\dfrac{4}{11}$ days. How much of the total work did B did?

(a) $\dfrac{4}{11}$

(b) $\dfrac{4}{15}$

(c) $\dfrac{5}{12}$

(d) $\dfrac{5}{11}$

(e) $\dfrac{2}{13}$

83. An article is marked at ₹18,000. A trader bought it at successive discounts of 25% and 10% respectively. He spent ₹1,350 on its transportation to his shop and then sold the article for ₹15,000. What is trader's profit% in the whole transaction?

(a) $16\dfrac{2}{3}\%$

(b) 28%

(c) 30%

(d) $11\dfrac{1}{9}\%$

(e) 20%

84. A person lent out certain sum on simple interest and the same sum on compound interest at a certain rate of interest per annum. He noticed that the ratio between the difference of compound interest and simple interest of 3 years and 2 years is 16 : 49. The rate of interest per annum is

(a) 9%

(b) $8\dfrac{1}{7}\%$

(c) $13\dfrac{1}{3}\%$

(d) 7%

(e) $6\dfrac{1}{4}\%$

85. A box contains 2 blue, 3 green and 5 red balls. If three balls are drawn at random, what is the probability that all balls are different in color?

(a) $\dfrac{3}{10}$

(b) $\dfrac{1}{4}$

(c) $\dfrac{3}{7}$

(d) $\dfrac{4}{11}$

(e) $\dfrac{2}{9}$

Directions (Qs. 86-90): Study the following graph and answer the given questions.

Number of Vehicles Manufactured By Two Companies during Six Years (in thousands)
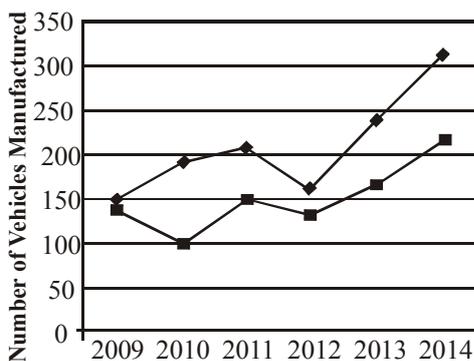
	2009	2010	2011	2012	2013	2014
◆ Company P	150	190	220	160	240	310
■ Company Q	130	100	160	120	180	210

86. What is the difference between total number of vehicles manufactured by company P in 2011, 2012 and 2014 together and company Q in 2012, 2013 and 2014 together? (in thousands)

(a) 120

(b) 210

(c) 100

(d) 270

(e) 180

87. What is the average number of vehicles manufactured by company Q over six years? (in thousands)

(a) 170

(b) 150

(c) 90

(d) 60

(e) 130

88. What is the percentage decrease in number of vehicles manufactured by company from 2011 to 2012?

(a) $45\dfrac{3}{11}\%$

(b) $33\dfrac{3}{11}\%$

(c) $26\dfrac{6}{19}\%$

(d) $27\dfrac{3}{11}\%$

(e) $33\dfrac{4}{11}\%$

89. Out of the number of vehicles manufactured by company P in 2013, 15000 pieces were found defective and out of the number of vehicles manufactured by company Q in 2014, 10000 pieces were found defective. What is the respective ratio of non-defective vehicles manufactured by company P in 2013 and Q in the 2014?

(a) 9 : 8

(b) 11 : 4

(c) 3 : 8

(d) 5 : 8

(e) 7 : 4

90. In year 2015, there was an increase of 30% in number of vehicles manufactured by company P as compared to vehicles manufactured by same company in the year 2010. What is the total number of vehicles manufactured by the same company in the year 2015?

(a) 247

(b) 297

(c) 211

(d) 310

(e) 283

Directions (Qs. 91-95): Refer to the pie-chart and the table and answer the given questions.

Distribution of Total Number of Cellular Phones (Both Nokia and Samsung) **Sold by Six Stores in October**
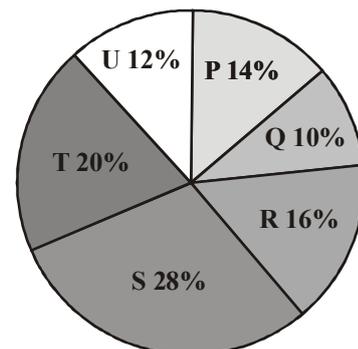
Store	Respective Ratio of Number of Nokia Cellular Phone Sold to the Number of Samsung Cellular Phones Sold
P	4 : 3
Q	3 : 1
R	5 : 4
S	7 : 6
T	1 : 4
U	11 : 10

91. What is the average number of Nokia cellular phones sold by stores P, R, S and T together?
(a) 1007   (b) 1048
(c) 3908   (d) 1006
(e) 996

92. Number of Nokia cellular phones sold by store R is what percent more than the total number of Samsung cellular phones sold by stores P and Q together?

(a) $23\dfrac{1}{17}\%$ (b) $19\dfrac{5}{17}\%$ (c) $20\dfrac{3}{17}\%$

(d) $17\dfrac{11}{17}\%$ (e) $4\dfrac{24}{119}\%$

93. What is the central angle corresponding to total number of cellular phones (both Nokia and Samsung) sold by store S?
(a) 99.2°   (b) 93.6°
(c) 100.8°   (d) 97.4°
(e) 101.2°

94. What is the respective ratio between number of Nokia cellular phones sold by store S and total number of Samsung cellular phones sold by stores T and U together?
(a) 43 : 72   (b) 49 : 76
(c) 43 : 76   (d) 49 : 72
(e) None of these

95. Total number of cellular phones (both Nokia and Samsung) sold by stores Q increased by 15% from October to November and total number of cellular phones (both Nokia and Samsung) sold by store T increased by 5% from October to November. What was the total number of cellular phones sold by stores Q and T together in November?
(a) 3540   (b) 3720
(c) 3640   (d) 3420
(e) 3880

Directions (Qs. 96-100): Study the table and answer the given questions.

Total Exports of Six Countries over Five Years (in ₹ crore)

Country \ Year	2011	2012	2013	2014	2015
P	20	40	60	45	90
Q	30	25	15	50	100
R	50	55	70	90	65
S	45	60	20	15	25
T	60	50	55	100	110
U	24	40	60	75	120

Note: Profit = Exports - Imports

96. What was the profit of all countries together in year 2015 if the total imports of all the countries together was ₹ 385 crore?
(a) 125   (b) 160
(c) 280   (d) 240
(e) 200

97. If the respective ratio of export to import in country S and country U is 1 : 2 and 4 : 1 in the year 2011, then what is the total imports of country U and S together in that particular year? (in ₹ crore)
(a) 52   (b) 22
(c) 36   (d) 96
(e) 44

98. If the export of country P in the year 2016 is 20% more than the total exports of country Q in 2014 and export of country T in 2013 together, then what was the profit of P in the year 2016 if its imports were ₹ 92 crore for that year? (in ₹ crore)
(a) 10   (b) 58
(c) 22   (d) 46
(e) 34

99. By what percent the average export of country T over all the given years more than the average export of country R over all the given years?

(a) $13\dfrac{7}{11}\%$ (b) $9\dfrac{1}{11}\%$

(c) $13\dfrac{5}{7}\%$ (d) $4\dfrac{7}{11}\%$

(e) $12\dfrac{1}{7}\%$

100. What is the percent increase in the exports of all the countries together in the year 2012 to 2014? (Rounded off to two digits after decimal?
(a) 88.99   (b) 72.39
(c) 38.89   (d) 62.89
(e) 40.60

ENGLISH LANGUAGE

Directions (Qs. 101-110): Read the followling passage carefully and answer the given questions. Certain words/phrases have been given in **bold** to help you locate them while answering some of the questions.

As the government prepare to empty its filling candidates and heads for the hot and dusty plans to solicit votes. It is visibly **exuding** optimism about the economy. According to its non-elected representatives, all the lead indicators seem to be showing signs of a revival with the first glimmer of some incipient growth pushing through the enveloping groom. Steel, cement, auto, fast moving consumer goods (such as soaps and detergents), food items, beverages, volume' of goods moved by the railways have all shown some improvement in January after having shrunk in the previous two months.

But before we start congratulating the government for its excellent economic management, let's hit the pause button for a moment. How much of the Indian economy's resilience is owed to governmental intervention? Ok, is there a strategy at all? One of the economy's mainstays for over a decade has been service.

This contributes to over 50% of the country's GDP and has been providing enormous growth impulse over the past few years. If you were to listen to the government representatives, it would seem as if they had foreseen the coming age of services and had designed that structure.The truth is somewhat different. There are many reasons behind the extraordinary growth of services. One of the reasons is the kind of elaborate rent-seeking structures erected by the government in the manufacturing sector. Any person wanting to set-up a manufacturing facility in India still has to fill a large number of outstretched palms, making the operations costly from day one.

Here's another unique aspect of the economy for which politicians routinely take credit. One of the saving graces for the Indian economy during this episode of the downturn is the safety net expected to be provided by Indian consumers, even as the international economy winds down and **eschews** consumption of goods made in India.

This has had a **deleterious** impact on Indian exports, leading many exporters to scale down their operations and restructure their businesses. Fortunately, for the planners and the administrators, the impact of the global slowdown is likely to be cushioned, to a large extent, by the gigantic Indian domestic market, which will continue consuming and providing the growth push to the economy.

Again, it's not as if some wise person in government woke up one morning and presciently decreed that hence forth the country would focus only on the domestic markets. The government has always felt that exports should be the **apposite** strategy for economic growth, just like some of the other emerging countries.

Guess what? Exporters also have to manufacture and that is quite an endurance test in India. Plus, the intricate structure built around promoting exports also worked as a huge deterrent. The government also did not quite see exports as an alternative, viable economic growth model till the Southeast Asian success story burst on to the scene. Hence, till then exports did not quite get the required push. So, no grand design here too.

Unlike in USA and various other European economies, where the government provides unemployment benefits as part of their social contract, Indians have to fend for themselves. In the current downturn, for example, many Indians-especially in the urban and semi-urban settlements-are wary of spending because of uncertainties surrounding their jobs. This has impacted consumption but, conversely, is bound to improve the savings rate.

The credit, therefore, should go to the Indian citisen who, despite the varous hurdles and inconveniences, is using his ingenuity to improve his lot at all times. This collective strength has not been forged by some steely policy push, but has developed by default, almost in line' with Charles Darvins's theory of survival.

101. According to the author, one of the reasons behind services flourishing in our country is
   (a)   financial support provided by the government
   (b)   funding by theele
   (c)   availability of a pool of experts from developed countries in this sector
   (d)   availability of young working population
   (e)   Other than those given as options

102. Which of the following is most nearly the **opposite** in meaning to the word 'Exuding' as used in the passage?
   (a)   Excluding   (b)   Displaying
   (c)   Percolating   (d)   Closing
   (e)   Concealing

103. Which of the following is most nearly the same in meaning to the word 'Apposite' as used in the passage?
   (a)   Appropriate   (b)   Opposite
   (c)   Further   (d)   Soft
   (e)   Believable

104. According to the author, one of the reasons why India's economy managed to sail through the economic downturn was
   A.   There was demand for Indian goods from domestic consumers even when internationally it had declined.
   B.   The politicians had foreseen the trouble and could prepare the country to efficiently deal with it.
   C.   It was least affected by the economic downturn.
   (a)   Only B   (b)   Only C
   (c)   A and B   (d)   Only A
   (e)   A and C

105. Which of the following is the central theme of the passage?
   (a)   Social contract-A Must in Every Country
   (b)   Hurdles Created by the government for the Common Man
   (c)   Government's Campaign to Once Again Regain Confidence of the Masses
   (d)   Economic Growth-A Result of Natural Forces rather than the government
   (e)   Service Industry-The Backbone of Every Economy across the Globe

106. The author attributes the improvement (or maintenance of) the economic condition of the country to
   A.   The government, as it could foresee a dwindle in the economy and could take suitable measures to tackle it.
   B.   Appropriate policies to push people to spend more.
   C.   The Economy for it is surviving on its own either through consumption or saving.
   (a)   Only B   (b)   Only C
   (c)   A and B   (d)   Only A
   (e)   A and C

107. Which of the following is most nearly the same in meaning to the word 'Eschews' as used in the passage?
   (a)   Faces   (b)   Avoids
   (c)   Accepts   (d)   Bestows
   (e)   Ridicules

108. Which of the following is most nearly the opposite in meaning to the word 'Deleterious' as used in the passage?
   (a)   Positive   (b)   Harmful
   (c)   Disastrous   (d)   Zilch
   (e)   Additional

109. Which of the following correctly explains the phrase 'Wary of' as used in the passage regarding spending behaviour of citizens?
   (a)   Careless   (2)   Miserly
   (c)   Upset about   (d)   Cautious about
   (e)   Fearless in

110. Which of the following is **not true** in the context of the passage?
    (a) Traditionally the government did not believe exports to be providing a boost to the economy.
    (b) Most unemployed Indians today reap the benefits provided under social contracts.
    (c) The author is a firm believer of the fact that the government has played the smallest role in supporting the economy of the country.
    (d) The government is portraying a rosy picture of the economy to gain people's confidence.
    (e) All the given statements are true.

Directions (Qs. 111-115): Which of the phrases given below the sentence should replace the word/phrase given in **bold** in the sentence to make it grammatically correct? If the sentence is correct as it is given and no correction is required, select 'No correction required' as your answer.

111. People with persistent headaches are hence as likely to develop bed's palsy even as research **amount to** other factors which could increase the risk of conditions like diabetes.
    (a) accounting at   (b) accounting towards
    (c) account for   (d) accounted at
    (e) No correction required

112. The actor and the producer **has part** ways due to differences over communication.
    (a) have parted ways   (b) have been way parting
    (c) have parting away   (d) have part ways
    (e) No correction required

113. The State is **reeled from** the impact of acute financial crisis around the world.
    (a) reeled at   (b) reeling away
    (c) reel for   (d) reeling from
    (e) No correction required

114. The reading club **soon becoming** a moving part for literature enthusiasts.
    (a) soon became   (b) becoming soon
    (c) was became soon (d) soon is become
    (e) No correction required

115. **Having been confined** to their homes for a week after a leopard was sighted, the villagers grew restless and frustrated.
    (a) As confine to   (b) Have being confining at
    (c) Been confining at   (d) Being confined for
    (e) No correction required

Directions (Qs. 116-125): Read the following sentences to find out whether there is any grammatical mistake/error in them.

The error, if any, will be in one part of the sentence. Mark the part with the error as your answer. If there is no error, mark 'No error' as your answer. (Ignore the errors of punctuations If any)

116. The beautician listed out/a few quick tips that/one needs to keep in mind/in order to get that perfect holiday radiant.
    (a) The beautician listed out
    (b) a few quick tips that
    (c) one needs to keep in mind
    (d) in order to get that perfect holiday radiant
    (e) No error

117. After weeks of talks,/the two parties failed to resolving /their differences and the makers eventually/decided to look for an alternative.

    (a) After weeks of talks
    (b) the two parties failed to resolving
    (c) their differences and the makers eventually
    (d) decided to look for an alternative
    (e) No error

118. The Minister said that the State was facing/an acute financial crunch and feared that/the government might be compelled to take/loans to pay the salaries of its employees.
    (a) The Minister said that the State was facing
    (b) an acute financial crunch and feared that
    (c) the government might be compelled to take
    (d) loans to pay the salaries of its employees
    (e) No error

119. States dependent on oil and gas revenues/are growing increasingly anxious about/the ripple effect that fading of prices/may have on their local economies,
    (a) States dependent on oil and gas revenues
    (b) are growing increasingly anxious about
    (c) the ripple effect that fading of prices
    (d) may have on their local economies
    (e) No error

120. Though the year witnessed/a rise in crimes against women,/ the police claimed that their changed images has given/ confidence to women to come forward and lodge complaints.
    (a) Though the year witnessed
    (b) a rise in crimes against women,
    (c) the police claimed that their changed images has given
    (d) confidence to women to come forward and lodge complaints
    (e) No error

121. Although ghost pepper is no longer/the most hottiest chilli in the world, as India's speciest export/ it packs quite a punch.
    (a) Although ghost pepper is no longer
    (b) the most hottiest chilli in the world
    (c) as India's speciest export
    (d) it packs quite a punch
    (e) No error

122. Migraines may doubles/the risk of a/nervous system condition that/causes facial paralysis.
    (a) Migraines may doubles
    (b) the risk of a
    (c) nervous system condition that
    (d) causes facial paralysis
    (e) No error

123. The police tactfully handed/ the farmers' agitation for/higher prices which is created/law and order problem in district every year.
    (a) The police tactfully handed
    (b) the farmers' agitation for
    (c) higher prices which is created
    (d) law and order problem in the district every year
    (e) No error

124. For the past one week,/people had stop working/out of their houses,/fearing a sudden attack.
    (a) For the past one week,
    (b) people had stop working
    (c) out of their houses
    (d) fearing a sudden attack
    (e) No error

125. Mock drills were/carried out by/security agencies at/various locations in the city.
  (a) Mock drills were   (b) carried out by
  (c) security agencies at
  (d) varous locations in the city
  (e) No error

Directions (Qs. 126-130): Rearrange the following six sentences A, B, C, D, E and F in the proper sequence to form a meaningful paragraph, then answer the given questions.

A. For the balance of power and for the staggered development of the world, it is very important to stop the phenomena of brain-drain.

B. For this purpose, developed nations should help developing countries with necessary money and resources.

C. Ultimately, this will also ensure that each and every nation will have the ability to introduce itself as a developed nation.

D. This will help a particular country to use all skilled citizens for development and proliferation.

E. This will ensure that each and every individual on this planet can have a good standard of living.

F. But to build these skilled workers at their native places, it is also important to provide them enough work opportunities and living facilities.

126. Which of the following should be the THIRD sentence after the rearrangement?
  (a) A   (b) B   (c) F
  (d) D   (e) E

127. Which of the following should be the SECOND sentence after the rearrangement?
  (a) A   (b) B   (c) C
  (d) D   (e) F

128. Which of the following should be the FIRST sentence after the rearrangement?
  (a) A   (b) B   (c) C
  (d) D   (e) E

129. Which of the following should be the FOURTH sentence after the rearrangement?
  (a) A   (b) B   (c) C
  (d) E   (e) D

130. Which of the following should be the LAST (SIXTH) sentence after the rearrangement?
  (a) A   (b) F
  (c) D   (d) C
  (e) B

Directions (Qs. 131-135): The following sentences have two blanks. Each blank indicates that something has been omitted. Choose the words that best fit the meaning of a sentence as a whole.

131. After a .... review, it was found that many financial institutions don't have proper ....in place and could unwillingly be financing illegal activities.
  (a) routine; checks   (b) periodic; space
  (c) schedule; standard   (d) custom; timing
  (e) suddenly; system

132. The main reason youth unemployment has .... in this region is the depth of the recession in these countries and the chances of improvement are .... unless governments kick-start their economies.
  (a) fallen; negligible   (b) risen; visible
  (c) grown; create   (d) soared; remote
  (e) collapsed; much

133. As the country as a whole more than half the population .... regular electricity as connections to the national god are .... and generators are expensive.
  (a) deficient; dependable   (b) want; running
  (c) lack; unenviable   (d) short; faded
  (e) requiring; fumy

134. It is .... that 400 Indian passengers will want to fly in or out of the country by the 2050 and unless the airport facility is improved it will be .... to handle this traffic.
  (a) though; easier   (b) assume; worrisome
  (c) estimated; difficult   (d) typical; perfect
  (e) expected; able

135. Reform is set to gain .... as much of the spadework for a vibrant economy such as .... laws on taxes and banking are underway.
  (a) steam; specialising   (b) advantage; fix
  (c) pace; amending   (d) tame; modify
  (e) weight; compensating

Directions (Qs. 136-140): In these questions there are two statements which can be combined into a single statement in a number of different ways without changing their meaning. Below them are given three probable starters A, B and C of such a combined sentence. One, two, three or none of them may be correct. Decide upon which is/are correct, if any and mark the option which denotes your answer. If none of three starters is suitable, mark None as your answer.

136. The landowners who ruled and made the country rich were not to bothered about educated citizens. Without a good education system, the country has once struggled to create competitive industries.
  A. Since the landowners
  B. Despite making the country
  C. While the landowners struggled
  (a) Only A   (b) Only B
  (c) All of these   (d) A and B
  (e) B and C

137. The mineral rich economy has done extremely well over the past few decade in exporting coal and mineral ores to China and India. Officials argue that the country now has to shift into innovation and technology to keep the economy growing.
  A. Though the mineral rich
  B. Following officials arguing
  C. To shifting into more
  (a) Only A   (b) Only C
  (c) A and C   (d) A and B
  (e) All of these

138. Continued modernisation means access to new ideas and influences as well as social and economic freedom. Youth today can tweet, blog and talk freely about the most sensitive topics.
  A. Though continued modernisation
  B. While youth today can
  C. If access to new ideas
  (a) Only C   (b) Only A
  (c) B and C   (d) A and C
  (e) None

139. The Finance Ministers and central bankers of G20 countries will meet irl Sydney next month. The discussion will centre on the fact that the rich world's banks are wrong to ignore the side effects of their policies on other countries.
- A. In order to discuss
- B. Ignoring the side effects
- C. Next month the G20 countries
- (a) Only A
- (b) Only C
- (c) A and C
- (d) Only B
- (e) All of these

140. The city government was of the view that some schools were undersised and that cleaning these would save money which could be reinvested. This money has been invested in providing better facilities as other government schools that took in children from these closed citizens.
- A. Although closing
- B. The money saved
- C. When the money has been invested
- (a) A and B
- (b) B and C
- (c) All of these
- (d) Only B
- (e) None of these

Directions (Qs. 141-150): In the given passage, there are blanks, each of which has been numbered. Against each five words are suggested, one of which fits the blank appropriately. Find the appropriate word in each case.

Scientists have long known how to convert various kinds of organic materials into liquid form. Trees, shrubs, grasses, weeds, fungi, seaweed and animal fats have all been turned into biofuels to **(141)** cars, ships and even planes. As well as being available to countries **(142)** for sands shale fields or gushers, biofuels can help reduce greenhouse gas emissions by **(143)** an alternative to releasing total fossil fuel carbon into the atmosphere. Frustratingly however **(144)** biofuels in large quantities have always been more expensive and less **(145)** than simply drilling a little dipper for oil. Ethanol is an alcoholic biofuel easily **(146)** from sugary or starchy plants. It has been used to run cars and has been blended into **(147)** petrol. It constitutes about 10% of the fuel **(148)** by America's vehicles today.

Biodiesel from vegetable fats is similarly mixed into diesel in Europe. But these first generation biofuels have **(149)**. They are made from plants rich in sugar, starch or oil that might otherwise be eaten by people or live stock. Ethanol and biodiesel also have limitations as vehicles tunnels-performing poorly in cold weather and capable of **(150)** unmodified engines. In an effort to overcome these limitations dozens of start-up companies emerged over the past decade with the aim of developing second generation biofuels from agricultural waste with no nutritional value and which can be used to replace fossil fuels.

141.
- (a) fuelling
- (b) moving
- (c) power
- (d) silent
- (e) invent

142.
- (a) have
- (b) efforts
- (c) without
- (d) explore
- (e) replacing

143.
- (a) researching
- (b) precaution
- (c) supporting
- (d) providing
- (e) arriving

144.
- (a) produce
- (b) manufacture
- (c) offering
- (d) transport
- (e) making

145.
- (a) trouble
- (b) worried
- (c) opportunity
- (d) advantage
- (e) convenient

146.
- (a) disabled
- (b) create
- (c) installed
- (d) acquired
- (e) formulate

147.
- (a) originally
- (b) conventional
- (c) purely
- (d) normally
- (e) free

148.
- (a) use
- (b) waste
- (c) fill
- (d) burned
- (e) exploit

149.
- (a) discouragement
- (b) benefits
- (c) drawbacks
- (d) flaw
- (e) weak

150.
- (a) dreadful
- (b) harm
- (c) injure
- (d) demanding
- (e) damaging

PROFESSIONAL KNOWLEDGE (IT)

151. A CASE SQL statement is which of the following?
- (a) A way to establish a data definition in SQL or establish a loop in SQL
- (b) A way to establish an IF-THEN-ELSE in SQL
- (c) A way to establish a loop in SQL
- (d) A way to establish a data definition in SQL
- (e) Establish a loop in SQL and establish an IF-THEN-ELSE in SQL

152. WebApp performance tests are designed to
- (a) assess WebApp usability
- (b) test network performance
- (c) test network connectivity
- (d) evaluate page loading times
- (e) simulate real-world loading situations

153. The result of a SQL SELECT statement is a(n)
- (a) report
- (b) file
- (c) page
- (d) table
- (e) form

154. A cross life-cycle activity of system development is
- (a) data modelling
- (b) fact finding
- (c) prototyping
- (d) data flow diagram modelling
- (e) object modelling

155. .... is the processes and tools used by managers and executives with the support of the project team to manage employee resistance.
- (a) Resistance management
- (b) Change management
- (c) Detailing management
- (d) Probing management
- (e) Blasting management

156. .... is the integration of economic, social. cultural and ecological facets of life, enabled by information technologies.
- (a) Business environment
- (b) Neutralisation
- (c) Nationalisation
- (d) Regionalisation
- (e) Globalisation

157. Backward recovery is which of the following?
- (a) Where the before-images are applied to the database.
- (b) Where the after-images and a = before-images are applied to the database.
- (c) Where the after-images are applied to the database.
- (d) Continuing without any recovery
- (e) Switching to an existing copy of the database

158. Criminal hacking is called
(a) cracking
(b) a virus
(c) a trojan horse
(d) a Worm
(e) blasting

159. Which of the following is used to create and delete views and relations within tables?
(a) SQL Data Identification Language
(b) SQL Data Identification and Manipulation Languages
(c) SQL Data Relational Language
(d) SQL Data Definition Language
(e) SQL Data Manipulation Language

160. .... is one of the older and slowest methods an intruder might use to scan a network to determine which of a range of IP addresses map to live hosts.
(a) Ping sweep
(b) Phreaking
(c) Smurfing
(d) War driving
(e) Brute force cracking

161. Which of the following is not a WebApp Interface mechanism?
(a) Links
(b) Cookies
(c) Browser
(d) Cookies and Links
(e) Forms

162. Locking may cause which of the following problems?
(a) Deadlock
(b) Versioning
(c) Versioning & deadlock
(d) Erroneous updates
(e) Erroneous updates and deadlock

163. .... is a standard for security that is inclined at the network or packet processing layer of network communications, as opposed to the application layer.
(a) Passive FTP
(b) TCP
(c) SSL
(d) S-HTTP
(e) IPsec

164. A communications medium where data are transformed into light pulses is
(a) coaxial cable
(b) optical fibre
(c) satellite
(d) twisted-pair cable
(e) copper cable

165. What standard Java package is used to move the cursors?
(a) Javax swing
(b) Java fcio
(c) Java IO
(d) Java facio
(e) Java awl event

166. What does DLCI stand for?
(a) Data Link Circuit Identifier
(b) Data Link Connection Interrupt
(c) Data Link Connection Indicator
(d) Data Link Circuit Indicator
(e) Data Link Connection Identifier

167. Which of the following is the phase of SDLC in which the identified requirements are incorporated into the new system's design?
(a) Maintenance
(b) Physical layout
(c) Requirement design
(d) Systems design
(e) Systems blueprint

168. A procedural program stores .... .in a collection of variables and a set of .... perform operations on it.
(a) parameters; arguments
(b) data; functions
(c) assets; actions
(d) strings; operators
(e) numbers; arguments'

169. A DBMS performs several important functions that guarantee the integrity and consistency of the data in the database. Which of the following is not one of those functions?
(a) Data integrity management
(b) Data reports
(c) Security and storage management
(d) Data storage management
(e) Security management

170. In addition to an internet connection, which of the following is needed to?
(a) Telnet client
(b) Scanner
(c) Mail client
(d) HP client
(e) Web browser

171. .... is the term for the use of deception to get someone's sensitive information.
(a) Identity theft
(b) Personal engineering
(c) Spoofing
(d) Social engineering
(e) Hacking

172. Which of the following techniques provides redundancy by using two disks and two controllers?
(a) Disk striping
(b) Disk striping with parity
(c) Drive mirroring
(d) Drive mirroring and disk striping
(e) Drive duplexing

173. Webpages can be created using
(a) only Web authoring software
(b) only macromedia dreamwaver
(c) any Word processor
(d) only Microsoft products
(e) only Microsoft frontpage

174. In what kind of storage, we can easily insert, delete, concatenate and rearrange substrings?
(a) Stack
(b) Linked list
(c) Dedicated list
(d) Oueue
(e) Array

175. .... are two Important technologies for developing the Semantic web.
(a) XML and RDF
(b) XML and HTML
(c) RDF and HTML
(d) Wi-Fi and RDF
(e) Wi-Fi and XML

176. Which of the following is not a testable Web App security element?
(a) Encryption
(b) Authentication and Encryption
(c) Firewalls
(d) Authentication
(e) Penetration

177. Which of the following wildcard masks is most useful for matching all IP packets in subnet 10.1.128.0, mask 255.255.255.0?
(a) 0.0.0.0
(b) 0.0.0.255
(c) 0.0.0.240
(d) 0.0.0. 31
(e) 0.0.15.0

178. Common Gateway Interface (CGI) is which of the following?
(a) An interface that accepts and returns data that may be written in SOL.
(b) A small program that executes within other application and is stored on the server.
(c) A small program that executes within other application and is stored on the client.
(d) A small program that executes within other application and
(e) An interface that accepts and returns data that may be written in any language that poroduce executable file.

179. Which of the following are five built-in functions provided by SQL?
(a) SUM, AVG, MIN, MAX, NAME
(b) MIN, MAX, MULT, DIV, NAME
(c) SUM, AVG, MULT, DIV, MIN
(d) SUM, AVG, MIN, MAX, MULT
(e) COUNT, SUM, AVG, MAX, MIN

180. Every host computer on the internet has a(n)
(a) similar IP address
(b) unique 10-digit number
(c) common name and number
(d) unique I P address
(e) unique 15-digit number

181. .... maps domain name to their IP addresses.
(a) Wi-Fi   (b) DNS
(c) HTML   (d) XML
(e) Java

182. Which of the following forms does not describe parallel ATA devices?
(a) SCSI   (b) IOE and DOE
(c) IOE   (d) DOE
(e) ATA

183. Which of the following are true of XML?
(a) XML is too complicated.
(b) XML is difficult to learn.
(c) XML is a set of tags designed to tell browsers how to display text on a webpage.
(d) XML is a set of rules for creating tags to describe data.
(e) XML is a set of tags designed to tell browsers how to display images on a web page.

184. A .... is an acyclic diagraph, which has only node with in-degree 0, and other nodes have indegree 1.
(a) Dis-joint tree   (b) Direction oriented tree
(c) Directed tree   (d) Diagonalised tree
(e) Undirected tree

185. When new data are to be inserted into a data structure, but there is not available space; this situation is usually called
(a) Underflow   (b) Overflow
(c) Houseful   (d) Saturated
(e) Empty

186. A web facility that helps to find sites with the information and/or services that is desired is
(a) a hyperlink   (b) the top inner domain
(c) a search engine   (d) a network access point
(e) a blog

187. The design tool used to illustrate the logic of a new computer software logic diagram that uses symbols to represent program elements is called a (n)
(a) data logic chart   (b) dataflow diagram
(c) software logic diagram   (d) system flowchart
(e) entity relationship illustration

188. Frame relay
(a) does not use error correction routines
(b) is used by facsimile machines
(c) uses error-correction routines
(d) does not work weel on the internet
(e) is an outdated technology

189. A network covering a large geographic area is usually referred to as a(n)
(a) huge area network   (b) wide area network
(c) internetwork   (d) local area network
(e) intranet

190. A home page is
(a) the web page that identifies a website
(b) a webpage you eventually reach by clicking a series of hyperlinks
(c) a web page created by an individual home user, as opposed to the one created by a corporation
(d) the last page of the web site
(e) the web page you like to visit the most

191. What type of join is needed when you wish to include rows that do not have matching values?
(a) Equi-join   (b) Indefinite join
(c) Intermediate join   (d) Natural join
(e) Outer join

192. The UML designation for a public class member is
(a) the symbol @   (b) the symbol #
(c) the minus symbol (−)   (d) the plus symbol (+)
(e) the word public

193. Which of the following statements about Stacks is incorrect?
(a) New nodes can only be added to the top of the stack.
(b) Stacks can be implemented using linked lists.
(c) Stacks are first-in, first-out data structures.
(d) The last node (at the bottom) of a stack has a null (0) link.
(e) Stacks are very useful.

194. ---------- is the process whereby media files such as a video start playing as they are downloading.
(a) Streaming   (b) Pushing
(c) Dragging   (d) Flashing
(e) Pulling

195. In TPS systems, an output that signifies that a specific transaction has taken place is called a(n)
(a) detail report   (b) action document
(c) inception report   (d) exception report
(e) summary report

196. Which of the following are placeholders for literal values in a SQL query being sent to the database
(a) reduction and resolution variables
(b) resolution variables
(c) reduction variables
(d) assimilation variables
(e) bind variables

197. A data structure where elements can be added or removed at either end but not in the middle is called
(a) requeue   (b) queues
(c) dequeue   (d) linked lists
(e) stacks

198. Malicious software is known as
(a) disasterware   (b) badware
(c) illegalware   (d) malware
(e) maliciousware

199. When you will visit websites spyware may be substantially downloaded. This is called a
(a) logic bomb   (b) drive-by download
(c) virus   (d) drive-in download
(e) spyot

200. The CMM Level at which measurable goals for quality and productivity are established in
(a) Level 1   (b) Level 3
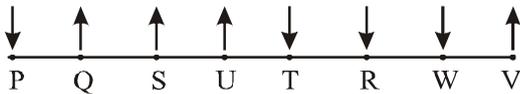(c) Level 5   (d) Level 4
(e) Level 2

Hints & Explanations

Sol. (Q. Nos. 1 – 5) As per the given information, seating arrangement eight person is as below
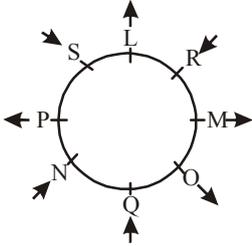
1. **(b)**   2. **(a)**   3. **(a)** L is facing outside
4. **(e)**   5. **(e)**   6. **(a)**

Sol. (Q. Nos. 6-10) As per the given information, seating arrangement of persons is given below

P Q S U T R W V

6. **(d)**   7. **(b)**   8. **(c)**
9. **(c)**   10. **(b)**

Sol. (Q. Nos. 11 – 15) According to given information in questions, we get the following arrangement of floor and people:

Floor	People
8	D
7	C
6	F
5	A
4	B
3	G
2	E
1	H

11. **(d)** From the arrangement, two people live between the floors on which A and D live. (i.e.C,f).
12. **(e)** From the arrangement E lives on the floor immediately below G.
13. **(c)** According to the arrangement, D lives on 8th floor.
14. **(c)** According to the arrangement, statement (c) 'F lives on the floor number 6' is true.
15. **(e)** According to the arrangement, A lives on floor number 5.

Sol. (Q. Nos. 16 – 20) By the given information, day of work, friends name and language are arrange in following table

Day	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Friend's Name	Q	N	R	P	M	S	O
Language	English	Sanskrit	French	Chinese	Spanish	Japanese	German

From the above table, we get the answer of all questions.

16. **(c)**
17. **(c)** Q is learning English language on Monday.
18. **(b)** As per given arrangement, Q and R attend their language class after two day i. e. Chinese and Japanese according to this new arrangement, P is related to the language German.
19. **(b)**
20. **(b)** From the arrangement, P has a class on Thursday.
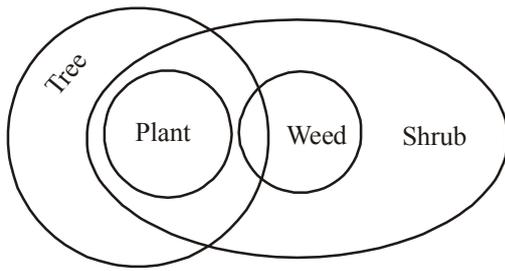21. **(e)** According to the question,
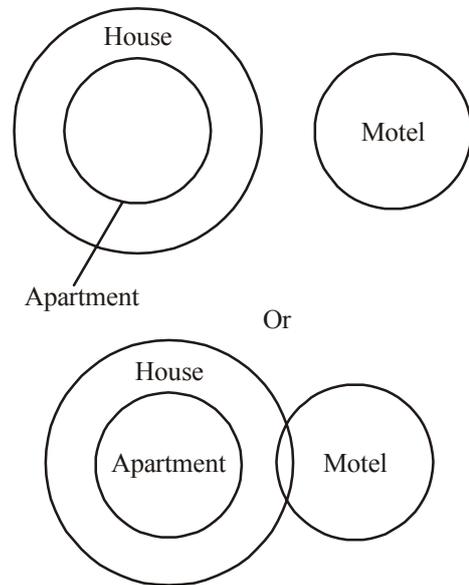
From the diagram,
Either conclusion I or II is true.

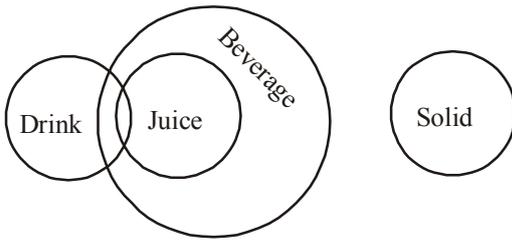22. **(b)** According to the question,
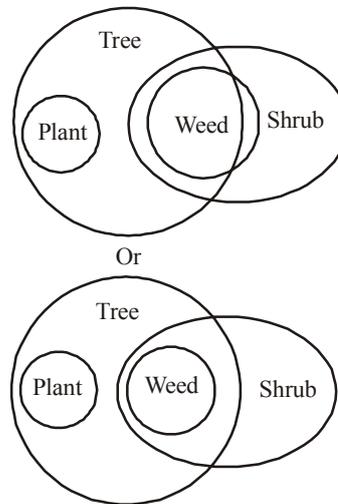
From the diagram, only conclusion II is true.

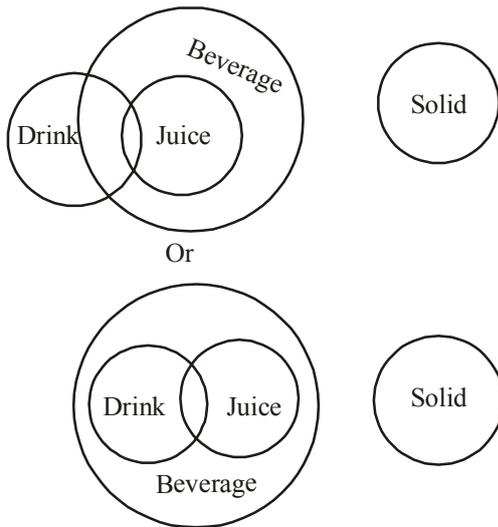**23. (c)** According to the question,

From the diagram,
Both conclusions are true.

24. (a) According to her question,

From the diagram only conclusion I is true.

25. (e) According to the question.

Or

From the diagram,
Either conclusion I or II is true.

Sol. (Q. Nos. 26 – 30) According to the rule in given example, the appropriate steps for the given input are
Input 11 east 54 vent kind 35 over 27 71 bowl
Step I 71 11 east 54 kind 35 over 27 bowl vent
Step II 54 71 11 east kind 35 27 bowl vent over
Step III 35 54 71 11 east 27 bowl vent over kind
Step IV 27 35 54 71 11 bowl vent over kind east
Step V 11 27 35 54 71 vent over kind east bowl

26. (b) From the last step of given input, there are four elements between '35' and 'kind', which are 54 71 vent over.

27. (c) From the step II of given input,
'bowl' is sixth from the right of '71'.

28. (e) In second last step, 'kind', east' are two consecutive elements to the immediate right of 'over'.

29. (d) 'east' is the third element to the left of the sixth element from the left element in the first step.

30. (e) In step II, both 'bowl' and 'vent' appears exactly between '27' and 'over'.

31. (c) From the statement
N < A = T ≥ Z < S / R ≥ T
For conclusion I,
R ≥ T = A > N
⇒ R ≥ T > N
⇒ R > N
Conclusion I is true.
For conclusion II
Z < S   (from statement)
Conclusion II is also true.

32. (b) From the statement
L ≤ E = A > P ; Y > E > R
For conclusion I,
i.e, Y > E ≥ L
So, Y is always greater than L.
i.e. Y > L
For conclusion II,
i.e. A = E > R
i.e. A > R
So, conclusion II is true.

33. (d) D < S ≥ L > U
⇒ D/Q < S ≥ L > U
Q < D ⇒ Can't say
U > Q ⇒ False

34. (b) From the statements,
L ≤ E = A > P ; Y ≥ E > R
For conclusion I, P < A = E > R ⇒ P < E > R
P and R both are less than E
So, conclusion I is not true.
For conclusion II,
A = E ≤ Y
⇒ A ≤ Y
So, conclusion II is true.

35. (e) From the statement, N < A = T ≥ Z ; R ≥ T ; Z < S
For conclusion I and II
R ≥ T ≥ Z   ⇒ P ≥ Z
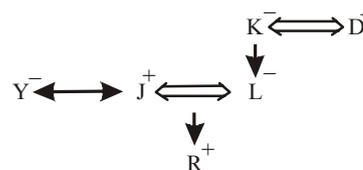So, either conclusion I or II is true.

36. (b)   **37. (d)**   **38. (d)**
39. (e)   **40. (a)**

Sol. (Q. Nos. 41 – 43) As per the given information, the relation graph of family members is shown below
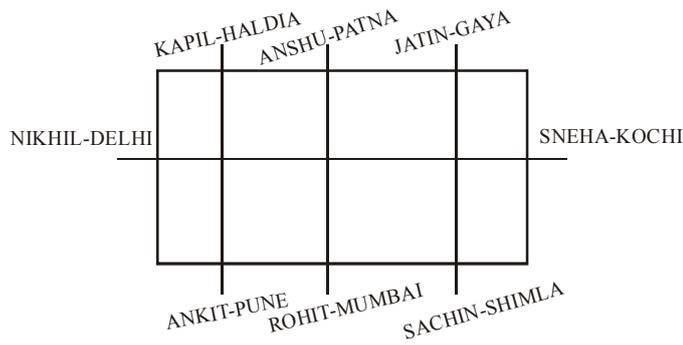

41. (b) Clearly, J is the son-in-law of K.
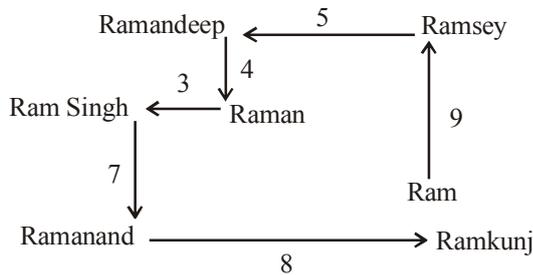
42. (a) Clearly, R is the nephew of Y.

43. (b) As gender of B is not known, therefore relation of B with J cannot be determined.

Sol: 44-48

KAPIL-HALDIA — ANSHU-PATNA — JATIN-GAYA

NIKHIL-DELHI | | | SNEHA-KOCHI

ANKIT-PUNE — ROHIT-MUMBAI — SACHIN-SHIMLA

44. (d)   45. (b)   46. (a)
47. (a)   48. (d)

Sol: 49-50

Ramandeep ← 5 — Ramsey
3 ↓ 4   ↑ 9
Ram Singh ← Raman   Ram
7 ↓
Ramanand —— 8 ——→ Ramkunj

49. (c)   50. (c)

51. (d) 105.27% of $1200.11 + 11.80\%$ of $2360.85 = 21.99\%$ of ? $+1420.99$

$\Rightarrow$ 105% of $1200 + 12\%$ of $2360 = 22\%$ of $? + 1421$

$\Rightarrow$ $1260 + 2832 = 0.22 \times ? + 1421$

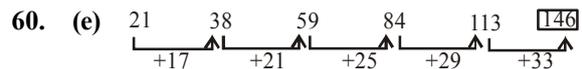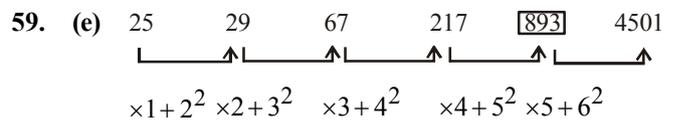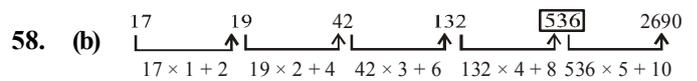$\Rightarrow$ $0.22 \times ? = 122.2$ $\Rightarrow ? = \dfrac{122.2}{0.22} = 555.45 \approx 550$

52. (c) 0.98% of $7824 + 4842 \div 119.46 - ? = 78$

$\Rightarrow$ 1% of $7824 + 4842 \div 120 - 78 = ?$

$\Rightarrow$ $? = 7824 + 40.35 - 78 = 40.59 \approx 40$

53. (e) $(41.99^2 - 18.04^2) - ? = 13.11^2 - 138.99$

$\Rightarrow (42^2 - 18^2) - ? = (13)^2 - 139$

$\Rightarrow \{(42 + 18)(42 - 18)\} - ?\ 169 - 139$

$\Rightarrow \{60 \times 24\} - ? = 30$

$\Rightarrow 1440 - ? = 30 \Rightarrow ? = 1410$

54. (e) $24.96^2 / (34.11 + 20.05) + 67.96 + 89.11$

$= \dfrac{25^2}{54.16} + 67.96 + 89.11 = \dfrac{625}{54} + 67.96 + 89.11$

$= 11.5 + 68 + 89 = 168.5 \approx 170$

55. (b) $\sqrt{(2025.11)} \times \sqrt{(256.040} + \sqrt{(399.95)} \times \sqrt{?} = 33.98 \times 40.11$

$\Rightarrow \sqrt{(2025)} \times \sqrt{(256)} + \sqrt{400} \times \sqrt{?} = 34 \times 40$

$\Rightarrow 45 \times 16 + 20 \times \sqrt{?} = 34 \times 40$

$\Rightarrow 720 + 20 \times \sqrt{?} = 1360$

$\Rightarrow 20 \times \sqrt{?} = 1360 - 720 \Rightarrow 20 \times \sqrt{?} = 640$

$? = (32)^2 = 1024$

56. (c)

13   13   19   43   103   [223]
+0   +6   +24   +60   +120
+6   +18   +36   +60
+12   +18   +24
+6   +6
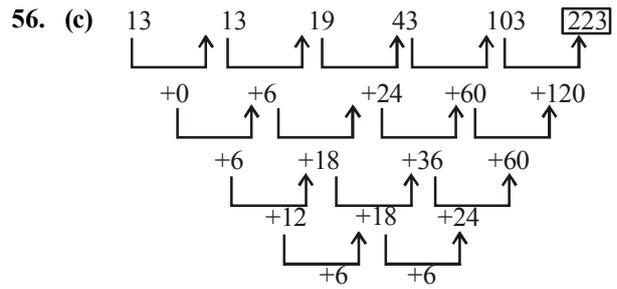
57. (a)   27   13   12   16.5   ?   [75]

$27 + 12 = \dfrac{39}{3} = 13$ $16.5 + 75 = \dfrac{91.5}{3} = 30.5$

58. (b)   17   19   42   132   [536]   2690

$17 \times 1 + 2$ $19 \times 2 + 4$ $42 \times 3 + 6$ $132 \times 4 + 8$ $536 \times 5 + 10$

59. (e)   25   29   67   217   [893]   4501

$\times 1 + 2^2$ $\times 2 + 3^2$ $\times 3 + 4^2$ $\times 4 + 5^2$ $\times 5 + 6^2$

60. (e)   21   38   59   84   113   [146]

$+17$ $+21$ $+25$ $+29$ $+33$

61. (c)   I. $6x^2 + 25 \times + 24 = 0$

$D = \sqrt{b^2 - 4ac}$

$D = \sqrt{625 - 4 \times 24 \times 6}$

$= \sqrt{49} = 7$

$x_1 = \dfrac{-b + 7}{12} = \dfrac{-25 + 7}{12} = \dfrac{-18}{12} = -\dfrac{3}{2}$

$x_2 = \dfrac{-b - 7}{12} = \dfrac{-25 - 7}{12} = \dfrac{-32}{12} = -\dfrac{8}{3}$

$x = \dfrac{-3}{2}, \dfrac{-8}{3}$

II. $12y^2 + 13y + 3 = 0$

$y_1 = \dfrac{-13 + \sqrt{169 - 144}}{24}$

$= \dfrac{-13 + 5}{24} = \dfrac{-8}{24} = \dfrac{-1}{3}$

$y_2 = \dfrac{-13 - \sqrt{169 - 144}}{24} = \dfrac{-18}{24} = \dfrac{-3}{4}$

$y = \dfrac{-1}{3}, \dfrac{-3}{4} \Rightarrow x < y$

62. (c)   I. $12x^2 - x - 1 = 0$

$x_1 = \dfrac{-b + \sqrt{D}}{2a} = \dfrac{1 + \sqrt{1 - 4 \times 12 \times -1}}{24}$

$$= \frac{1+7}{24} = \frac{8}{24} = \frac{1}{3}$$

$$x_2 = \frac{-b - \sqrt{D}}{2a}$$

$$x_2 = \frac{1-7}{24} = \frac{-6}{24} = \frac{-1}{4}$$

$$x = \frac{1}{3}, -\frac{1}{4}$$

II. $20y^2 - 41y + 20$

$$y_1 = \frac{41 - \sqrt{1681 - 1600}}{40}$$

$$y_2 = \frac{41 - \sqrt{1681 - 1600}}{40}$$

$$y_1 = \frac{41+9}{40} = \frac{50}{40}, y_2 = \frac{32}{40}$$

$$y = \frac{5}{4}, \frac{4}{5} \quad \Rightarrow \quad x < y$$

63. **(b)** I. $10x^2 + 33x + 27 = 0$

$$x_1 = \frac{-33 + \sqrt{b^2 - 4ac}}{2a} = \frac{-33 + \sqrt{1089 - 4 \times 10 \times 27}}{20}$$

$$x_2 = \frac{-33 - \sqrt{b^2 - 4ac}}{2a}$$

$$x_2 = \frac{-33 - \sqrt{1089 - 1080}}{20}$$

$$x_1 = \frac{-33 + 3}{20}, x_2 = \frac{-33 - 3}{20}$$

$$x_1 = \frac{-30}{20}, x_2 = \frac{-36}{20} = \frac{-9}{5}, x = \frac{-3}{2}, \frac{-9}{5}$$

II. $5y^2 + 19y + 18 = 0$

$$y_1 = \frac{-19 - \sqrt{361 - 4 \times 18 \times 5}}{10}$$

$$y_2 = \frac{-19 - \sqrt{361 - 360}}{10}$$

$$y_1 = \frac{-19 + 1}{10}$$

$$y_2 = \frac{-19 - 1}{10} = \frac{-18}{10} = \frac{-9}{5} = \frac{-20}{10} = -2$$

$$y = \frac{-9}{5}, -2 \quad \Rightarrow \quad x \geq y$$

64. **(d)** I. $15x^2 \qquad - 29x - 14 = 0$

$$x_1 = \frac{29 + \sqrt{841 + 60 \times 14}}{30}$$

$$= \frac{29 + 41}{30} = \frac{70}{30}$$

$$x_2 = \frac{29 - \sqrt{1681}}{30}$$

$$x_2 = \frac{29 - 41}{30} = \frac{-12}{30}$$

$$x = \frac{7}{3}, \frac{-2}{5}$$

II. $6y^2 - 5y - 25 = 0$

$$y_1 = \frac{5 + \sqrt{25 - 4 \times 6 \times -25}}{12} = \frac{5 + \sqrt{625}}{12} = \frac{30}{12}$$

$$y_2 = \frac{5 - \sqrt{25 - 4 \times 6 \times -25}}{12} \Rightarrow y_2 = \frac{5 - \sqrt{625}}{12} = \frac{-20}{12}$$

$$y = \frac{5}{2}, \frac{-5}{3}$$

So, relationship between x and y can't be determined.

65. **(b)** I. $3x^2 - 22x + 7 = 0$

$$3x^2 - 21x - x + 7 = 0$$
$$x(3x - 1) - 7(3x - 1) = 0$$
$$(3x - 1)(x - 7) = 0$$

$$x = \frac{1}{3}, 7$$

II. $y^2 - 20y + 91 = 0$
$$y^2 - 13y - 7y + 91 = 0$$
$$y(y - 7) - 13(y - 7) = 0$$
$$(y - 13)(y - 7) = 0$$
$$y = 13, 7 \quad \Rightarrow \quad y \geq x$$

66. **(e)** Rasika's present age : (Sunil's [present + 4)
$$= 5 : 7 \qquad \qquad ...(i)$$
Rasika's age − 4 : Sunil's present age
$$= 2 : 3 \qquad \qquad ...(ii)$$

$$\frac{R}{S+4} = \frac{5}{7}$$
$$7R = 55 + 20$$
$$7R - 5S = 20 \qquad \qquad ...(i)$$

$$\frac{R-4}{S} = \frac{2}{3}$$
$$3R - 12 = 2S$$
$$3R = 2S + 12 \qquad \qquad ...(ii)$$
By solving Eqs.(i) and (ii), we get
$$R = 20$$
and $\qquad S = 24$

∴ Rasika is 4 years younger than her brother Sunil.

67. **(c)** By statement − I
M : W = 27 : 13
So, in 80 litres of mixture contain

$$\text{Quantity of milk} = \frac{27}{40} \times 80 = 54 \text{ litres}$$

$$\text{Water} = \frac{13}{40} \times 80 = 26 \text{ litres}$$

By statement - II
If 16 litres of mixture replaced by equal quantity of milk.
then in new mixture.

Quantity of milk $= \dfrac{4}{5} \times 80 = 64$ litres

Quantity of water $= \dfrac{1}{5} \times 80 = 16$ litres

Again by statement -I Before mixing water.
Milk is litres and water is 18 litres
Statement - II before mixing milk 48 litres and water is 16 litres
Ratio of milk to water in mixture. $= 3 : 1$

Quantity of milk $= \dfrac{3}{4} \times 80 = 60$ litres

Concept Ratio of milk to water is always same in the mixture. It doesn't depend on Quantity of mixture drawn.

68. (e)

A (3x) compounded annually
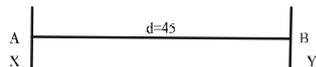(2 years) 20%

Neeraj

B (5x) simple interest (2 years) 15%
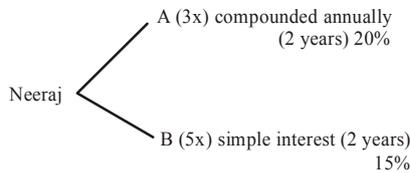
$= \dfrac{5x \times 15 \times 2}{100} - \left\{ 3x \left(1 + \dfrac{20}{100} \right)^2 - 3x \right\} = 900$

$= \dfrac{3x}{2} - \left\{ 3x \times \dfrac{36}{25} - 3x \right\} = 900 = \dfrac{3x}{2} - \left\{ \dfrac{108x - 75x}{25} \right\} = 900$

$\dfrac{75x - 66x}{50} = 900 = 9x = 900 \times 50 = ₹ 5000$

Amount invested in scheme A $= 3 \times 5000 = 15000$

69. (e)

A $\overset{X}{|}$ $\overset{d=45}{\rule{3cm}{0.4pt}}$ $\overset{B}{\underset{Y}{|}}$

Total time taken = 2 h 15 min
Let speed of y be S km/h
Speed of x be 1.5 S km/h.

Total time taken $= \dfrac{\text{Total distance}}{\text{Total speed}}$

$2\dfrac{1}{4} = \dfrac{45}{2.5\,S} \Rightarrow \dfrac{9}{4} = \dfrac{45}{2.5\,S} \Rightarrow = S = \dfrac{45}{2.5} \times \dfrac{4}{9}$

$\therefore$ Speed of x $= 1.5\,S = 1.5 \times \dfrac{45}{25} \times \dfrac{4}{9} = 12\,km/h$

70. (e) 22.5   15
Length : Breadth = 3 : 2

$\downarrow$

3x 2x

Height $= 50 \times \dfrac{1}{4} = 12.5$

Perimeter $= 2(3x + 2x) = 50$

$\Rightarrow$ $\qquad$ $x = 5$

So, area of two any adjacant walls
$= b \times h + l \times h = h\,(l + b)$
Total cost of painting on wall $= 12.5 \times 25 \times 450$
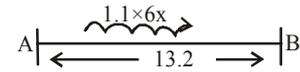$= ₹ 140625$

71. (c) Let speed of current be x.
Then, speed of boat be 5x.
Total speed in downstream
$= x + 5x = 6x$
Total speed in upstream
$= 5x - x = 4x = 8$ km

A $\overset{1.1 \times 6x}{\underset{13.2}{\rule{3cm}{0.4pt}}}$ B

$1.1 \times 6x = 13.2 \Rightarrow \qquad x = 2$
Required Distance covered = Time × Speed

$= \dfrac{26}{5} \times 8 = 52 \times 8 = 41.6\,km$

72. (a) $\dfrac{\text{Work}}{\text{man} \times \text{days}} = \dfrac{\text{Remaining work}}{\text{men} \times \text{days}}$

$\dfrac{W}{24 \times 13} = \dfrac{W}{20 \times D}$

$20 \times D = 24 \times 13$

$D = \dfrac{24 \times 13}{20} = \dfrac{78}{5} = 15\dfrac{3}{5}$ days

73. (e) Average weight of male student = 65.9 kg
Average weight of female students = 57.0 kg
Average weight of total students = 60.3 kg
Let the total number of student = x.

Then, $\dfrac{65.9 \times 66 + (x - 66) \times 57}{x} = 60.3$

$= 65.9 \times 66 + 57x - 57 \times 66 = 60.3x$
$= (65.9 - 57) \times 66 = 3.3x = 8.9 \times 66 = 3.3x$
$\Rightarrow 178 = x$
$\therefore$ Number of female students $= 178 - 66 = 112$.

74. (b) Let Shashi had sum of ₹ P.

then, $\dfrac{2}{3}P \times \dfrac{12 \times 6}{100} + \dfrac{1}{3}P\left(1 + \dfrac{10}{100}\right)^2 - \dfrac{1}{3}P = 2805$

$= \dfrac{48P}{100} + \dfrac{1}{3}P\left(\dfrac{121}{100}\right) - \dfrac{1}{3}P = 2805$

$= \dfrac{48P}{100} + \dfrac{121P - 100P}{300} = 2805 = \dfrac{144P + 21P}{300} = 2805$

$\Rightarrow \dfrac{165P}{300} = 2805$

$\Rightarrow P = \dfrac{2805 \times 300}{165}$

$\Rightarrow P = 17 \times 300 = ₹ 5100$

75. (c) Let height be x m
then, Radius $= (x + 5)$ m

Curved surface area of cylinder $= 2\pi rh$

$$792 = 2 \times \frac{22}{7} \times (x+5) \times x \implies \frac{396 \times 7}{22} = x^2 + 5x$$

$$126 = x^2 + 5x$$
$$x^2 + 5x - 126 = 0$$
$$x^2 + 14x - 9x - 126 = 0$$
$$x(x+14) - 9(x-14) = 0$$
$$(x-9)(x+14) = 0$$
$$x = 9, x = -14 \text{ m}$$

We have to take height, x = 9m because height can't be negative.

So, leaving the value of x = – 14

∴ Height = 9m and radius = 9 + 5 = 14m

Hence, volume

$$= \pi^2 rh = \frac{22}{7} \times 14 \times 14 \times 9 = 44 \times 126 = 5544 \text{m}^3$$

76. (b) Let the cost price of the item be 100.

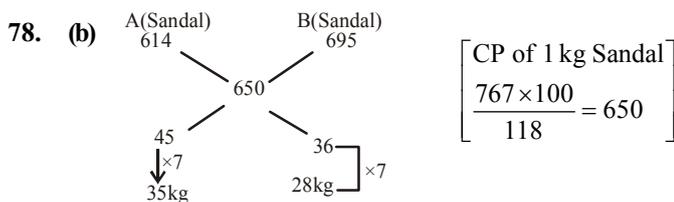$$100 \xrightarrow{40\%\uparrow} 140 \xrightarrow{20\%\downarrow} 112 \xrightarrow{25\%\downarrow} 84$$
CP   MP   SP

∴ Loss = 16% and Loss = ₹ 448

$$\therefore CP = \frac{448 \times 100}{16} = ₹\, 2800$$

$$\therefore SP = \frac{2800 \times 84}{100} = ₹\, 2352$$

77. (c) Let present age Parul = 7x
and present age of Rohit = 5x
Total age after 5 years from now, 7x + 5x + 10 = 94
⟹ 12x = 84
⟹ x = 7
Therefore, Parul's present age = 7 × 7 = 49 yr
and Rohit's present age = 5 × 7 = 35 yr
Hence, after 14 yr, Rohit's age will be equal to the Parul's present age.

78. (b)

So, answer is 28 kg.

79. (b)

$$\text{Time taken} = \frac{\text{Total distance to cover}}{\text{Relative velocity}} = \frac{559}{86} = 6.5 \text{ h}$$

∴ Meeting time
= 10 am + 6.5 h. = 4 : 30 pm

80. (a)

A	B	C
28000 × 12	20000 × 8 +	18000 × 6 +
28 × 12	18000 × 2 196	16000 × 2 140
12	7	5

Ratio : 12 : 7 : 5

81. (c) Volume of metal to be casted $= (22/7) \times [(5)^2 - (4)^2] \times 21$
So $(22/7) \times 3^2 \times h = (22/7) \times [(5)^2 - (4)^2] \times 21$
Solve, h = 21

82. (d) Let A replaced by C after x days, so A and B worked for x days, and then B and C for 6 4/11 = 70/11 days.
So
(1/15 + 1/25) × x + (1/25 + 1/30) × (70/11) = 1
(8/75) × x + (7/15) = 1
Solve, x = 5 days
So, B worked for (5 + 70/11) = 125/11 days
In 125/11 days, B did (125/11) × (1/25) = 5/11 of work

83. (d) He bought the article for
[(100 – 25)/100] [(100 – 10)/100] × 18000 = 12,150
Spent 1350 on repairs,
Total CP = 1350 + 12150 = 13,500
SP = 15,000

So profit% $= \frac{1500}{13500} \times 100 = 11\frac{1}{9}\%$

84. (e) For 2 years, difference in CI and SI $= \dfrac{Pr^2}{100^2}$

For 3 years difference is $\dfrac{Pr^2(r+300)}{100^3}$

$$\dfrac{\dfrac{Pr^2}{100^2}}{\dfrac{Pr^2(r+300)}{100^3}} = \dfrac{16}{49}$$

So $\dfrac{100}{r+300} = \dfrac{16}{49}$

Solve, $r = 6\dfrac{1}{4}$

85. (b) Total balls = 10

So probability $= \dfrac{^2C_1 \times {}^3C_1 \times {}^5C_1}{^{10}C_3} = \dfrac{1}{4}$

86. (e) Total number of vehicles produced by P in 2010, 2011 and 2013 = 690
Produced by Q in year 2011, 2012 and 2013 = 510
Difference = 690 – 510 = 180 thousands

87. (b) Average number of vehicles by company

$$Q = \frac{130 + 100 + 160 + 120 + 180 + 210}{6}$$

$$= \frac{900}{6} = 150 \text{ thousands}$$

88. **(c)** Total number of vehicles in 2010 = 380
Total number of vehicles produced in 2011 = 280

Percentage Decrease $= \dfrac{100}{380} \times 100$

$= \dfrac{500}{19} = 26\dfrac{6}{19}$

89. **(a)** Total vehicales produced by P in 2012 = 240 thousand
Defective = 15 thousand
Non - defective = 225 thousand
Total vehicles produced by Q in 2013 = 210 thousand
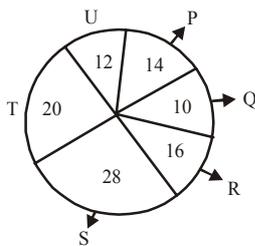Defectives = 10000
Non - defective = 200 thousand
   Ratio = 225 : 20 = 9 : 8

90. **(a)** Number of vehicles produced by P in the year 2009 = 190
Number of vehicles produced in 2014

$= 190 \times \dfrac{130}{100} = 247$

91. **(a)** **(91 − 95)**

Total Number = 11200

Store	Nokia/ Samsung
P	4 : 3
Q	3 : 1
R	5 : 4
S	7 : 6
T	1 : 4
U	11:10

91. **(a)** Total % of (P + R + S + T)
Together = 78%
Number of Nokia sold by store

$P = \dfrac{4}{7} \times 14 \times \dfrac{11200}{100} = 8 \times \dfrac{11200}{100} = 896$

Number of Nokia sold by store

$R = \dfrac{5}{9} \times 16 \times \dfrac{11200}{100} = \dfrac{80 \times 112}{9} = 996$

Number of Nokia sold by store

$S = \dfrac{7}{13} \times \dfrac{28}{100} \times 11200 = 14 \times 112 = 1688$ approx

Number of Nokia sold by store

$= \dfrac{1}{5} \times \dfrac{20}{100} \times 11200 = 448$

Total Nokia phone sold by
(P + R + S + T) = 896+ 996+ 1688 +448 = 4028

$\therefore$ Required average $= \dfrac{4028}{4} = 1007$

92. **(e)** Samsung phone sold by store

$p = \dfrac{3}{7} \times \dfrac{14}{100} \times 11200 = 672$

Samsung phone sold by store

$Q = \dfrac{1}{4} \times 100 = \dfrac{10}{100} \times 11200 = 280$

Total Samsung sold by (P + Q) = 672 + 280 = 952
Total Nokia phone sold by R = 996
Difference = 996 − 952 = 44

Required percentage, $= \dfrac{44}{952} \times 100 = \dfrac{44 \times 25}{238} = \dfrac{22 \times 25}{119}$

$= \dfrac{550}{119} = 4\dfrac{24}{119}$

93. **(c)** We know, 100% = 360°
So, 1 = 3.6°
So, 28% = 28× 3.6 = 100.8°

94. **(e)** Number of Nokia phones sold by store S = 1688(approx)
Total Number of Samsung phone sold by store T

$= \dfrac{4}{5} \times \dfrac{20}{100} \times 11200 = 1792$

Total Number of Samsung phone sold by store U

$= \dfrac{10}{21} \times \dfrac{12}{100} \times 11200 = 640$

$\therefore$ Required ratio
= 1688 : (1792 + 640)
= 1688 : 2432 = 211 : 304

95. **(c)** Total Number of cellular phones sold by stores Q in October

$= \dfrac{10}{100} \times 11200 = 1120$

Sold in November = $1120 \times \dfrac{115}{100} = 1288$

Total Number of cellular phone by T in October

$= = \dfrac{20}{100} \times 11200 = 2240$

Sold in Novermber = $2240 \times \dfrac{105}{100} = 2352$

Total Phone sold = 2352 + 1288 = 3640

Sol. (Q. Nos. 96 −100)
   Total Export of Six Countries

Year / Country	2011	2012	2013	2014	2015
P	20	40	60	45	90
Q	30	25	15	50	100
R	50	55	70	90	65
S	45	60	20	15	25
T	60	50	55	100	110
U	24	40	60	75	120

96 (a) Given, Import of all countries = ₹ 385 crore
Now, Export of all countries
$= 90 + 100 + 65 + 25 + 110 + 120 = 510 = ₹ 510$ crore
∴ Profit of all countries together $= 510 - 385 = 125$
$= ₹ 125$ crore

97. (d) For country S, Import $= 45 \dfrac{2}{1} = ₹ 90$ crore

For country U, Import $= 24 \times \dfrac{1}{4} = ₹ 6$ crore

thus, the total import of country U and S together
$= 90 + 6 = ₹ 96$ crore

98. (e) Total export of country Q in 2001 $= ₹ 50$ crore
Total export of country T in 2001 $= ₹ 55$ crore
∴ Together total export $= 50 + 55 = ₹ 105$ crore
∴ Total export of country P in 2003

$$105 \times \dfrac{120}{100} = ₹ 126 \text{ crore}$$

Given, import of country P in 2003 $= ₹ 92$ crore
∴ Profit of country P in year 2003 = Export – Import
$= 126 - 92 = ₹ 34$ crore

99. (a) Average export of country T $= \dfrac{60 + 50 + 55 + 100 + 110}{5}$

$$= \dfrac{375}{5} = 75$$

Average export of country R $= \dfrac{50 + 55 + 70 + 90 + 65}{5}$

$$= \dfrac{330}{5} = 66$$

∴ Required percentage $= \dfrac{9}{66} \times 100 = \dfrac{150}{11} = 13\dfrac{7}{11}$

100. (c)

1999	2001
40	45
25	50
55	90
60	15
50	100
40	75
270	375

∴ Difference $= 375 - 270 = 105$

∴ Percentage Growth $= \dfrac{105}{\text{Total export in 1999}} \times 100$

$$= \dfrac{105}{270} \times 100 = \dfrac{350}{9} = 38.89$$

101. (a)   **102. (e)**

103. (a) 'Apposite' and 'Appropriate' both have a meaning 'Suitable', hence they are synonyms to each other.

104. (d) Passage clearly suggests that indian market is a very big domestic market and therefore there was a demand for Indian goods from domestic consumers even when it had declined internationally. That's why author said that India's economy managed to sail through the economic downturn.

105. (d) The central theme of the passage is Economic Growth - A Result of Natural Forces rather than the Government.

106. (b) The author attributes the improvements of the economic condition of the country to the economy for it is surviving on its own either throgh consumption or saving.

107. (b) 'Eschews' means 'Nothing to do with'. 'Avoid also means the same. Hence, both of the words are synonyms.

108. (a) 'Deleterious' means 'Harmful' or ' Negative'. So its antonym will be 'Positive'.

109. (d) 'Wary of' has been used in the passage in the context of 'being cautious about'. So, option (d) is suitable choice.

110. (b) Statement (b) is not true. There is nothing like social contracts in India that one can reap the benefits provided under the scheme.

111. (c) 'Amount to' should be replaced by ' Account for'. It gives the sense of 'justifying' which is suitable in the context of the research.

112. (a)   **113. (d)**   **114. (a)**
115. (e)   **116. (a)**

117. (b) 'Resolving' should be 'resolve' as per the rules of infinitive.

118. (d) Using 'loans' is improper. When government seeks loan then it generally owes to World Bank or some reputed financial institutions as bailout which is singular. So, "loans" should be replaced by 'loan'.

119. (b) The grammatical construction should be like 'growing anxious increasingly' instead of 'growing increasingly anxious'.

120. (c)

121. (a) 'Although' is a superfluous usage here so, remove it to make the sentence correct.

122. (a) Modals take the plural form of verb or first form of verb. So 'doubles' should be replaced by' double' to make the sentence correct.

123. (c) Last part of the sentence says that the event takes place every year. So, it becomes a general truth. For a general truth, we should use simple present. Hence, 'is created' should be replaced by 'creates'.

124. (b) The event is of past, so Past Tense is to be used with auxiliary 'had', we use 'V_3'. So, 'stop' should be replaced by 'stopped'

125. (e) **126. (d)** **127. (b)** **128. (a)**

129. (d) **130. (b)**

131. (a) For the second blank space, standard and timing are not the suitable words to use. Only checks, system are suitable usages but with system the first word is suddenly which is not in agreement with the first blank. So, routine and checks is the correct pair to use.

132. (d)

133. (b) Obviously, the population 'want' electricity on a regular basis. For the next blank, the generators would agree the most to 'running'.

134. (c)

135. (c) Second blank must be completed by 'amending' as it is being followed by 'laws on taxes'. For a 'Law improvement' we use 'amending'.

136. (a) Only suitable starter is 'since the landowners' which fits with the context of the sentence well.

137. (a) Suitable starter is 'though the mineral rich' which fits the context of the sentence well.

138. (e)

139. (a) Suitable starter is 'In order to discuss' which fits the context of the sentence well.

140. (e)

141. (c) It. Option (a) and (b) are in Participle form so not appropriate. 'Silent' is a noun. 'Invent' doesn't match-up with the context. So, 'power is suitable.

142. (d) Sentence clearly suggests that it mentions about some research or finding. Hence, most appropriate word is 'explore'.

143. (d)

144. (e)

145. (e) Suitable words are 'convenient' or 'advantageous'. But 'advantage' would not match-up the context. So, 'convenient' is the only suitable option to be used here.

146. (d) 'Acquired' is the suitable option which means 'gained' or 'obtained and it suits the sense here.

147. (b)

148. (d) Here , 'Consume' or 'burn' is the best usage with fuel. As, 'consume' is not in the options so 'burned' is the most suitable usage here.

149. (c) On reading the sentence, we get the idea that the biofuel and its production is not an easy affair. There are certain limitations with it.Hence, use of 'drawbacks' is the best usage.

150. (e) **151. (b)** **152. (e)** **153. (d)**

154. (b) Cross life cycle of a system is an activity that overlaps many or all phases of the methodology: fact–finding, documentation and presentation, feasibility analysis and process and project, management.

155. (a)

156. (e) Globalisation is the integration and independence of economic, social, cultural, and ecological facets of life, enabled by rapid advances in information technologies.

157. (a) Backward recovery applies the journal file to the active database, moving backward from the end of the file. Backward recovery uses 'before- image' journaling.

158. (a)

159. (d) Data definition Language (DDL) is used to define the database structure or schema. Some of them are CREATE, DROP, ALTER etc.

160. (a) Ping sweep is a basic network scanning technique used to determine which of a rangs of IP addresses map to live hosts. A ping sweep consists of ICMP ECHO request sent to multiple hosts, If a given address is live, it will return an ICMP ECHO reply.

161. (c) When a user interacts with web App, the interaction occurs throught one or more interface mechanisms such as link, Forms Client side scripting, Dynamic HTML, Pop-up windows, streaming content and cookies.

162. (a) Locking is a process used to 'lock' some data in a database to prevent concurrent access to update the data. Locking may lead to deadlock. Deadlock means users are waiting for other users to free the resource.

163. (e) Internet Protocol Security (I Psec) is a framework (or standard) for a set of protocols for security that is inclined at the network or packet processing layer of network communications, as opposed to the application layer.

164. (b) Optical fibre is a communications medium where data is transformed into pulses of light emitted by a laser device about the six of a pinhead and can be transmitted at blinding speeds.

165. (e)

166. (e) The full form of DLCI Data Link Connection identifier. A number of a private or switched virtual circuit in a frame relay network that tells the Frame Relay how to route the data. The DLCI field identifies which logical circuit the data travels over.

167. (b)

168. (b) In a procedural program, you typically have data stored in a collection of variables and/or structures, coupled with a set of functions that performs operations on the data.

169. (b) A DBMS performs several important functions that guarantee the integrity and consistency of the data in the database. Data storage management, security management, data integrity managements except data reports are the functions and services provided by a DBMS.

170. (e)

171. (d) Social engineering technique used to deceive users, and exploits the poor usability of current web security technologies. It is the attempt to acquire sensitive information such as usernames, passwords, and credit card details.

172. (e) **173. (c)** **174. (b)**

175. (a) Two important technologies for development of Semantic web are
   1. **XML** enables site builders to make their information semantically.
   2. **Resource Description Framework** (RDF) offers a framework for the construction of logical language for collaboration in the Semantic web.

176. (e) Testable Web App security elements are Firewalls, Authentication, Encryption, and Authorisation.

177. (b) 0.0.0.255 matches all the packets that have the same first three octets. This is useful when you want to match a subnet in which then subnet part comprises of the first three octetes.

178. (e) Common Gatway Interface (CGI) is a specification for transferring information between a www server and a CGI program. A CGI program is any program designed to accept and return data that conforms to the CGI specification. The program could be written in any programming language including, C , Perl, JAVA or Visual Basic.

179. (e) COUNT, SUM, AVG, MAX and MIN are the built - in functions provided by SQL. DIV and MULT are not available in SQL.

180. (d) An IP address is an identifier for a computer on a network. Thus, every computer on the internet have a unique IP address.

181. (b) Domin names are alphabetic, they're easy to remember. The internet, however, is based on IP addresses. Every time we use a domain name, a DNS must translate or map the name into/to the corresponding IP address.

182. (a) All of the given terms (IOE, DOE, and ATA) describe Parallel ATA (Parallel Advanced Technology Attachment) devices except SCSI.

183. (d) Extensible Markup Language (XML) was designed to describe data, not to display data. XML tages are not predefined. XML allows the author to define his/her own tags and his/her own document structure.

184. (c) A directed trees is an acyclic digraph, which has only one node with indegree 0, and others nodes have indegree 1.

185. (b)

186. (c) A search engine is a web – based tool (or web facility) that enables users to find sites with the information and/or services that are desired on the World Wide Web (WWW).

187. (d) System flowchart is the graphical or symbolic representation of the flow of data or program elements in the system and illustrates the logic of a new computer software logic diagram.

188.(a) Frame relay is a protocol independent fast packet switching technology, so its payload can carry a varity of higher – layer LAN protocols, such as the internet Protocol (IP) because the network does not concern itself with error correction routines and flow control, overhead in the Frame reley network is low.

189. (b)   **190. (a)**   **191. (e)**

192. (d)   **193. (d)**

194.(a) Streaming or Streaming Media is the process whereby media files (such as video or audio content) sent in compressed form over the internet and played immediately, rather then being saved to the hard drive. With streaming media, a user does not have to wait to download a file to play it because the media is sent in a continuous stream of data it can play as it arrives.

195. (b) In transaction Processing Systems (TPS), Action documents direct that a specific action take place. Turnaround documents initiate action and are returned after its completion to the requesting agency. They, therefore, also serve as input documents for another transaction.

196. (e) Bind variable are placeholders for literal values or an alternative way to sent data to the databased. Instead of putting the values directly into the SQL statement, you just use a placeholder like ?, : name or @name.

197. (c) Dequeue (double - ended queues) are the refined queue in which elements can be aadded or removed at either ens but not in the middle. There are two variations of a dequeue – Input restricted dequeue and Output restricted dequeue.

198. (d) Malware is the short from for Malicious software. It is a software used to disrupt computer operation, gather sensitive information, or gain access to private computer systems.

199. (b) A drive- by download is a program (i.e. virus, spyware, malware) that is automatically downloaded to your computer without your consent or even your knowledge. A drive - by download can be initiated by simply visiting a web site or viewing an HTML e-mail message.

200. (d) CMM stands for Capability Maturity Modal. It is a framework to assess the maturity level of an organisation's information system development and management processes and products. It consist of 5 levels:

The standardised system development process is continously monitored and improved based on measures and data analysis established in level 4.