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MAT 2014 Question Paper

Management Aptitude Test conducted by AIMA

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MANAGEMENT APTITUDE TEST (MAT)

Held on : 7th September 2014

Time : 2.5 hrs

BASED ON MEMORY

Maximum Marks : 200

SECTION-A Mathematical Skills

1. A and B can do a job in 15 days and 10 days, respectively. They began the work together but A leaves after some days and B finished the remaining job in 5 days. After how many days did A leave?

(a) 2 days (b) 3 days
(c) 1 day (d) None of these
2. If 18 binders bind 900 books in 10 days, how many binders will be required to bind 660 books in 12 days?

(a) 14 (b) 13
(c) 22 (d) 11
3. Two pipes can fill a cistern in 14 hours and 16 hours respectively. The pipes are opened simultaneously and it is found that due to leakage in the bottom of the cistern, it takes 32 minutes extra for the cistern to be filled up. When the cistern is full, in what time will the leak empty it?

(a) 114 h (b) 112 h
(c) 100 h (d) 80 h
4. A pump can be operated both for filling a tank and for emptying it. The capacity of tank is 2400 m^3 . The emptying capacity of the pump is 10 m^3 per minute higher than its filling capacity. Consequently, the pump needs 8 minutes less to empty the tank to fill it. Find the filling capacity of pump.

(a) $50 \text{ m}^3/\text{min}$ (b) $60 \text{ m}^3/\text{min}$
(c) $58 \text{ m}^3/\text{min}$ (d) None of these
5. A race course is 400 metres long. A and B run a race and A wins by 5 metres. B and C run over the same course and B wins by 4 metres. C and D run over it and D wins by 16 metres. If A and D run over it, then who would win and by how much?

(a) A by 8.4 metres (b) D by 8.4 metres
(c) D by 7.3 metres (d) A by 7.3 metres
6. It takes eight hours for a 600 km journey, if 120 km is done by train and the rest by car. It takes 20 minutes more, if 200 km is done by train and the rest by car. The ratio of the speed of the train to that of the car is

(a) 2:3 (b) 3:2
(c) 3:4 (d) 4:3
7. A man can row a certain distance against the stream in six hours. However, he would take two hours less to cover the same distance with the current. If the speed of the current is 2 kmph, then what is the rowing speed in still water?

(a) 10 kmph (b) 12 kmph
(c) 14 kmph (d) 8 kmph
8. There were five sections in MAT paper. The average score of Pooja in first 3 sections was 83 and the average in the last 3 sections was 97 and the average of all the sections (*i.e.*, whole paper) was 92, then her score in the third section was

(a) 85 (b) 92
(c) 88 (d) None of these
9. Eleven years earlier the average age of a family of 4 members was 28 years. Now the age of the same family with six members is yet the same, even when 2 children were born in this period. If they belong to the same parents and the age of the first child at the time of the birth of the younger child was same as there were total family members just after the birth of the youngest members of this family, then the present age of the youngest member of the family is

(a) 3 years (b) 5 years
(c) 6 years (d) None of these
10. The average monthly salary of employees, consisting of officers and workers, of an organisation is ₹3000. The average salary of an officer is ₹10,000 while that of a worker is ₹2000 per month. If there are total 400 employees in the organisation, find the number of officers.

(a) 60 (b) 50
(c) 80 (d) 40
11. A dishonest milkman professes to sell his milk at cost price but he mixes it with water and thereby gains 25%. The percentage of water in the mixture is _____.

(a) 10% (b) 15%
(c) 20% (d) 25%
12. A can contains a mixture of two liquids A and B in the ratio 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B , the ratio of A and B becomes 7 : 9. How many litres of liquid A was contained by the can initially?

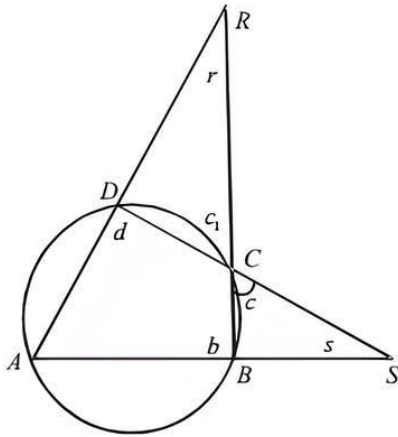
(a) 10 (b) 20
(c) 21 (d) 25
13. Ram prepares solutions of alcohol in water according to customers' needs. This morning Ram has prepared 27 litres of a 12% alcohol solution and kept it ready in a 27 litre delivery container to be shipped to the customer. Just before delivery, he finds out that the customer had asked for 27 litres of 21% alcohol solution. To prepare what the customer wants, Ram replaces a portion of 12% solution by 39% solution. How many litres of 12% solution are replaced?

(a) 5 (b) 9
(c) 10 (d) 12

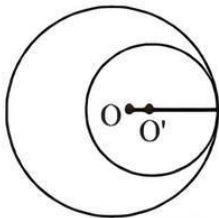
14. There are two containers : the first contains 500 ml of alcohol, while the second contains 500 ml of water. Three cups of alcohol from the first container is removed and is mixed well in the second container. Then three cups of this mixture is removed and is mixed in the first container. Let 'A' denote the proportion of water in the first container and 'B' denote the proportion of alcohol in the second container. Then,
- (a) $A > B$ (b) $A < B$
(c) $A = B$ (d) Cannot be determined
15. The average age of a couple is 25 years. The average age of the family just after the birth of the first child was 18 years. The average age of the family just after the second child was born was 15 years. The average age of the family after the third and the fourth children (who are twins) were born was 12 years. If the present average age of the family of six persons is 16 years, how old is the eldest child ?
- (a) 6 years (b) 7 years
(c) 8 years (d) 9 years
16. If m and n are positive integers such that $(m - n)^2 = \frac{4mn}{(m + n - 1)}$, then how many pairs (m, n) are possible?
- (a) 4 (b) 10
(c) 16 (d) Infinite
17. If the sum of the roots of the quadratic equations $ax^2 + bx + c = 0$ is equal to the sum of the squares of their reciprocals, then $\frac{b^2}{ac} + \frac{bc}{a^2} =$
- (a) 0 (b) -1
(c) 1 (d) 2
18. The sum of the digits of a three-digit number is 16. If the tens digit of the number is 3 times the units digit and the units digit is one-fourth of the hundredth digit, then what is the number ?
- (a) 446 (b) 561
(c) 682 (d) 862
19. Three containers have their volumes in the ratio 3 : 4 : 5. They are full of mixtures of milk and water. The mixtures contain milk and water in the ratio of (4 : 1), (3 : 1) and (5 : 2) respectively. The contents of all these three containers are poured into a fourth container. The ratio of milk and water in the fourth container is:
- (a) 4 : 1 (b) 151 : 48
(c) 157 : 53 (d) 5 : 2
20. Due to an increase of 30% in the price of eggs, 3 eggs less are available for ₹ 7.80. The present rate of eggs per dozen is :
- (a) ₹ 8.64 (b) ₹ 8.88
(c) ₹ 9.36 (d) ₹ 10.40
21. Which of the following statement/s is/are true?
I. If two numbers are such that one is 25% more than the second then the sum of the two numbers is nine times that of the difference of the two numbers.
- II. If 56% of a number A is 24% of another number B then 49% of A is 21% of B .
- III. If $\frac{7}{11}x$ is same as $\frac{2}{9}y$ then 81% of x is same as $26\frac{6}{7}\%$ of y .
- (a) Only I (b) Only III
(c) Only I and II (d) Only II and III
22. A dairyman pays ₹ 6.4 per litre of milk. He adds water and sells the mixture at ₹ 8 per litre, thereby making 37.5% profit. The proportion of water to milk received by the customers is :
- (a) 1 : 5 (b) 1 : 10
(c) 1 : 20 (d) 1 : 12
23. A man sells an article at 5% profit. If he had bought it at 5% less and sold it for ₹ 1 less, he would have gained 10%. Find the cost price.
- (a) 100 (b) 150
(c) 200 (d) 250
24. Instead of a metre scale cloth merchant uses a 120 cm scale while buying but uses an 80 cm scale while selling the same cloth. If he offers a discount of 20 per cent of cash payment, what is his overall per cent profit?
- (a) 20% (b) 25%
(c) 40% (d) 15%
25. A and B invested in the ratio 3 : 2 in a business. If 5% of the total profit goes to charity and A's share is ₹ 855, the total profit is
- (a) ₹ 1000 (b) ₹ 1500
(c) ₹ 1450 (d) ₹ 1475
26. A and B start a business. A invests ₹ 600 more than B for 4 months and B for 5 months. A's share is ₹ 48 more than that of B, out of a total profit of ₹ 528. The capital contributed by each is
- (a) ₹ 1200, ₹ 1800 (b) ₹ 1300, ₹ 1700
(c) ₹ 1350, ₹ 1850 (d) ₹ 1250, ₹ 1600
27. X and Y put in ₹ 3,000 and ₹ 4,000 respectively into a business. X reinvests into the business his share of the first year's profit of ₹ 2,100 whereas Y does not reinvest. In what ratio should they share the second year's profit?
- (a) 39 : 40 (b) 3 : 4
(c) 3 : 7 (d) 40 : 79
28. Instead of walking along two adjacent sides of a rectangular field, a boy took a short cut along the diagonal and saved a distance equal to half the longer side. Then the ratio of the shorter side to the longer side is
- (a) $\frac{1}{2}$ (b) $\frac{2}{3}$
(c) $\frac{1}{4}$ (d) $\frac{3}{4}$
29. In a triangle ABC , the internal bisector of the angle A meets BC at D . If $AB = 4$, $AC = 3$ and $\angle A = 60^\circ$, then the length of AD is

- (a) $2\sqrt{3}$ (b) $\frac{12\sqrt{3}}{7}$
 (c) $15\sqrt{\frac{3}{8}}$ (d) $6\sqrt{\frac{3}{7}}$

30. In the adjoining figure, $ABCD$ is a cyclic quadrilateral. Then $r + s$ is equal to



- (a) 180° (b) $2c$
 (c) $180^\circ + 2c$ (d) $180^\circ - 2c$
31. Two circles touch internally and their centres are O and O' as shown. The sum of their areas is 180π sq. cm. and the distance between their centres is 6 cm.



What is the diameter of the larger circle ?

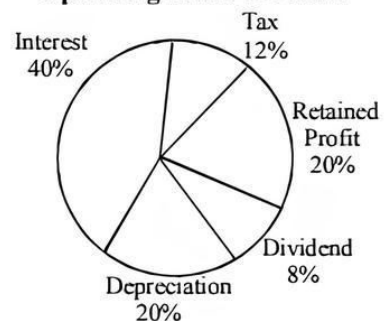
- (a) 16 cm (b) 12 cm
 (c) 18 cm (d) 24 cm
32. If the rate increases by 2%, the simple interest received on a sum of money increases by ₹ 108. If the time period is increased by 2 years, the simple interest on the same sum increases by ₹ 180. The sum is :
- (a) ₹ 1800 (b) ₹ 3600
 (c) ₹ 5400 (d) Data inadequate
33. Subhash purchased a refrigerator on the terms that he is required to pay ₹ 1,500 cash down payment followed by ₹ 1,020 at the end of first year, ₹ 1,003 at the end of second year and ₹ 990 at the end of third year. Interest is charged at the rate of 10% per annum. Calculate the cash price:
- (a) ₹ 3,000 (b) ₹ 2,000
 (c) ₹ 4,000 (d) ₹ 5,000
34. A person invested in all ₹ 2600 at 4%, 6% and 8% per annum simple interest. At the end of the year, he got the same interest in all the three cases. The money invested at 4% is
- (a) ₹ 200 (b) ₹ 600
 (c) ₹ 800 (d) ₹ 1200

35. In a football championship 153 matches were played. Every team played one match with each other team. How many teams participated in the championship?
- (a) 21 (b) 18
 (c) 17 (d) 15
36. A bouquet has to be formed from 18 different flowers so that it should contain not less than three flowers. How many ways are there of doing this in?
- (a) 5,24,288 (b) 2,62,144
 (c) 2,61,972 (d) None of these
37. The sum of all the four digit even numbers which can be formed by using the digits 0, 1, 2, 3, 4 and 5 if repetition of digits is allowed is
- (a) 1765980 (b) 1756980
 (c) 1769580 (d) 1759680
38. If $P(A \cup B) = 0.8$ and $P(A \cap B) = 0.3$, then $P(A') + P(B')$ equals to
- (a) 0.3 (b) 0.5
 (c) 0.7 (d) 0.9
39. A problem is given to three students whose chances of solving it are $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ respectively. What is the probability that the problem will be solved ?
- (a) $\frac{1}{4}$ (b) $\frac{1}{2}$
 (c) $\frac{3}{4}$ (d) $\frac{7}{12}$
40. A book contains 1000 pages numbered consecutively. The probability that the sum of the digits of the number of a page is 9, is :
- (a) zero (b) $\frac{55}{1000}$
 (c) $\frac{33}{1000}$ (d) $\frac{44}{1000}$

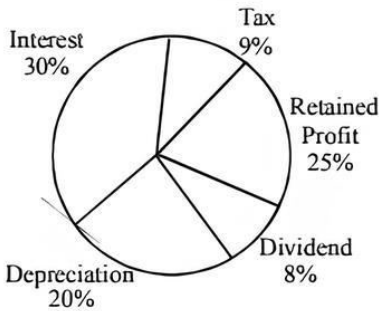
SECTION-B Data Analysis & Sufficiency

DIRECTIONS (Qs. 41-45): Refer to the pie-chart given below and answer the questions that follow :

Operating Profit 160 lakh.



2012-13
Operating Profit 130 lakh.



2011-12

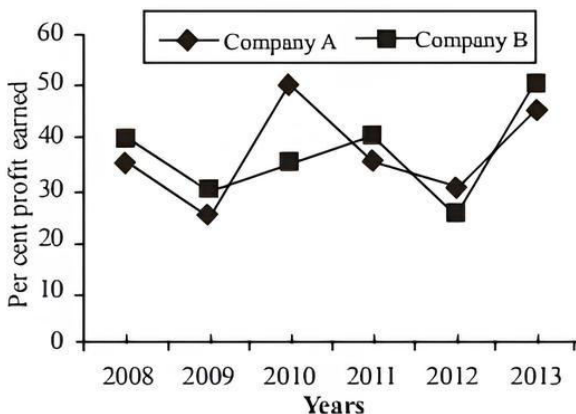
41. The operating profit in 2012-13 increased over that in 2011-12 by
 - (a) 23%
 - (b) 22%
 - (c) 25%
 - (d) 24%
42. The Interest burden in 2012-13 was higher than that in 2011-12 by
 - (a) 50%
 - (b) 25 lakh
 - (c) 90%
 - (d) 41 lakh
43. If, on an average, 20% rate of interest was charged on borrowed funds, then the total borrowed funds used by this company in the given two years amounted to
 - (a) 221 lakh
 - (b) 195 lakh
 - (c) 368 lakh
 - (d) 515 lakh
44. The retained profit in 2012-13, as compared to that in 2011-12 was
 - (a) higher by 2.5%
 - (b) higher by 1.5%
 - (c) lower by 2.5%
 - (d) lower by 1.5%
45. The equity base of these companies remained unchanged. Then the total dividend earning (in lakh rupees) by the share holders in 2012-13 is
 - (a) 10.4 lakh
 - (b) 9 lakh
 - (c) 12.8 lakh
 - (d) 15.6 lakh

DIRECTIONS (Qs. 46-50) : Study the following graph to answer these questions.

Per cent profit earned by two Companies A & B over the years

Profit = Income – Expenditure

$$\% \text{Profit} = \frac{\text{Profit}}{\text{Expenditure}} \times 100$$



46. If the income of Company 'A' in 2010 was ₹ 1,42,500 what was its expenditure in that year?
 - (a) ₹ 1,05,000
 - (b) ₹ 95,500
 - (c) ₹ 99,500
 - (d) ₹ 95,000
47. Expenditure of Company 'B' in 2011 was 90% of its expenditure in 2010. Income of Company 'B' in 2011 was what per cent of its income in 2010?
 - (a) 130.5
 - (b) $96\frac{2}{3}$
 - (c) 121.5
 - (d) $99\frac{1}{3}$
48. If the expenditure of Company 'A' in 2009 was ₹ 70 lakhs and income of Company A in 2009 was equal to its expenditure in 2010, what was the total income (in ₹ lakh) of the Company A in 2009 & 2010 together?
 - (a) 175
 - (b) 131.25
 - (c) 218.75
 - (d) Cannot be determined
49. Expenditure of Company 'B' in years 2008 and 2009 were in the ratio of 5 : 7 respectively. What was the respective ratio of their incomes?
 - (a) 10 : 13
 - (b) 8 : 13
 - (c) 13 : 14
 - (d) 11 : 14
50. Total expenditure of Companies A & B together in 2013 was ₹ 13.5 lakhs. What was the total income of the two companies (in ₹ lakhs) in that year?
 - (a) 19.575
 - (b) 20.25
 - (c) 19.75
 - (d) Cannot be determined

DIRECTIONS (Qs. 51-55): Read the following information carefully and answer the questions based on it:

In 6 educational years, number of students taking admission and leaving from the 5 different schools which are founded in 1990 are given below

School	A		B		C		D		E	
	Ad	L	Ad	L	Ad	L	Ad	L	Ad	L
2008	1025	–	950	–	1100	–	1500	–	1450	–
2009	230	120	350	150	320	130	340	150	250	125
2010	190	110	225	115	300	150	300	160	280	130
2011	245	100	185	110	260	125	295	120	310	120
2012	280	150	200	90	240	140	320	125	340	110
2013	250	130	240	120	310	180	360	140	325	115

In the above table shown Ad = Admitted, L = Left

51. What is the average number of students studying in all the five schools in 2010?
 - (a) 1494
 - (b) 1294
 - (c) 1590
 - (d) 1640
52. What was the number of students studying in school B in 2012?
 - (a) 2030
 - (b) 1060
 - (c) 1445
 - (d) 1150
53. Number of students leaving school C from the year 2008 to 2013 is approximately what percentage of number of students taking admission in the same school and in the same year?
 - (a) 50%
 - (b) 25%
 - (c) 48%
 - (d) 29%

54. What is the difference in the number of students taking admission between the years 2009 and 2013 in school D and B?
- (a) 514 (b) 1065
(c) 965 (d) 415
55. In which of the following schools, percentage increase in the number of students from the year 2008 to 2013 is maximum?
- (a) A (b) B
(c) C (d) D

DIRECTIONS (Qs. 56-60) : Study the following information and answer the questions that follow :

The premises of a bank are to be renovated. The renovation is in terms of flooring. Certain areas are to be floored either with marble or wood. All rooms/halls and pantry are rectangular. The area to be renovated comprises of a hall for customer transaction measuring 23 m by 29 m, branch manager's room measuring 13 m by 17 m, a pantry measuring 14 m by 13 m, a record keeping cum server room measuring 21m by 13 m and locker area measuring 29 m by 21 m. The total area of the bank is 2000 square meters. The cost of wooden flooring is ₹ 170/- per square meter and the cost of marble flooring is ₹ 190/- per square meter. The locker area, record keeping cum server room and pantry are to be floored with marble. The branch manager's room and the hall for customer transaction are to be floored with wood. No other area is to be renovated in terms of flooring.

56. What is the respective ratio of the total cost of wooden flooring to the total cost of marble flooring ?
- (a) 1879 : 2527 (b) 1887 : 2386
(c) 1887 : 2527 (d) 1829 : 2527
57. If the four walls and ceiling of the branch managers room (The height of the room is 12 meters) are to be painted at the cost of ₹ 190/- per square meter, how much will be the total cost of renovation of the branch manager's room including the cost of flooring ?
- (a) ₹ 1,36,800/- (b) ₹ 2,16,660/-
(c) ₹ 1,78,790/- (d) ₹ 2,11,940/-
58. If the remaining area of the bank is to be carpeted at the rate of ₹ 110/- per square meter, how much will be the increment in the total cost of renovation of bank premises ?
- (a) ₹ 5,280/- (b) ₹ 4,848/-
(c) ₹ 3,689/- (d) ₹ 6,890/-
59. What is the percentage area of the bank that is not to be renovated ?
- (a) 2.2 (b) 2.4
(c) 4.2 (d) 4.4
60. What is the total cost of renovation of the hall for customer transaction and the locker area ?
- (a) ₹ 2,29,100/- (b) ₹ 2,30,206/-
(c) ₹ 2,16,920/- (d) ₹ 2,42,440/-

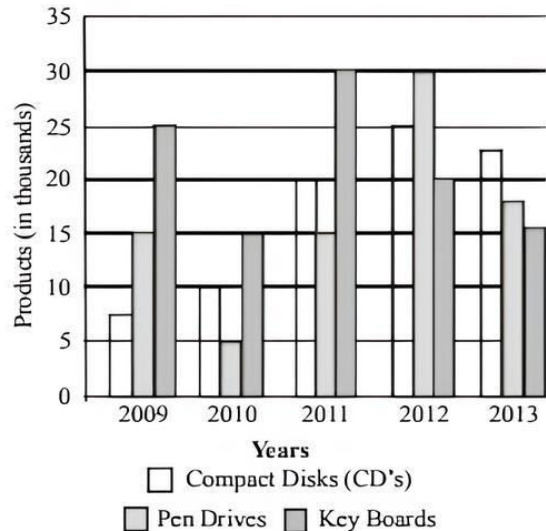
DIRECTIONS (Qs. 61-65): Study the following table carefully and answer the questions given below it:

Area and Production of Different Vegetables		
Vegetables	Area (in Hectare)	Production (in Tonnes)
Pea	7200	72792
Tomato	2600	79092
Beans	2100	20895
Onion & Garlic	1500	29490
Cabbage	1700	42670
Cauliflower	700	13790
Root Vegetables	800	18560
Brinjal	300	4500
Leafy Vegetables	2900	28600

61. How many tonnes per hectare were root vegetables produced?
- (a) 15.0 (b) 23.2
(c) 19.7 (d) 22.7
62. In case of how many vegetables the production was more than 20 tonnes per hectare?
- (a) 5 (b) 4
(c) 3 (d) 2
63. What is the ratio between the areas engaged in pea production and onion and garlic production respectively?
- (a) 24 : 5 (b) 5 : 24
(c) 23 : 5 (d) 5 : 23
64. Among the given vegetables in case of how many vegetables the area devoted to production of that vegetables was more than 10 per cent of total areas taken together?
- (a) 5 (b) 2
(c) 3 (d) 4
65. How many more tonnes per hectare cabbage were produced in comparison to cauliflower?
- (a) 5.3 (b) 5.4
(c) 3.4 (d) 5.5

DIRECTIONS (Qs. 66-70) : Study the following graph carefully and answer the questions that follow.

Three different products (in Thousands) produced by a company in five different years



66. What was the total number of all the products produced by the company in the year 2010 and 2012 together ?
 (a) 105000 (b) 107 lacs
 (c) 105700 (d) 10570
67. What was the average number of Pen-drives produced by the company over all the years together ?
 (a) 1700 (b) 1.7 lacs
 (c) 16500 (d) 85000
68. What is the difference between the total number of Pen-drives and CDs produced by the company together in the year 2012 and the number of Key boards produced by the company in the year 2010 ?
 (a) 40000 (b) 4000
 (c) 35000 (d) 3500
69. What was the respective ratio between the number of Key boards produced by the company in the year 2010, 2011 and 2013 ?
 (a) 1 : 2 : 3 (b) 1 : 2 : 2
 (c) 2 : 1 : 3 (d) 1 : 2 : 1
70. What was the respective ratio between the number of CDs produced by the company in the year 2013 and the number of Keyboards produced by the company in the year 2009 ?
 (a) 9 : 10 (b) 11 : 10
 (c) 10 : 9 (d) 10 : 11

DIRECTIONS (Qs. 71-75) : Each of the questions below consists of a questions and two statements numbered I and II given below it.

You have to decide whether the data provided in the statements are sufficient to answer the question.

Read both the statements and Give answer

- (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 the statements I and II together are not sufficient to answer the question.
71. What will be the cost of the second necklace?

I. The cost of the first necklace is more than $\frac{1}{5}$ of the second and the cost of the third necklace is more than $\frac{2}{5}$ of the second. The total cost of all the three necklaces is Rs. 120000.

II. The cost of the first necklace is $\frac{2}{5}$ more than the second. The cost of the third necklace is the least and total cost of all the three necklaces is Rs. 1,20,000.

72. How much minimum marks will be required to pass an examination?

I. Student A secured 32% marks in that examination and he failed by 1 mark. Student B secured 36% marks in the same examination and his marks was 1 more than the minimum pass marks.

II. Student A secured 30% of full marks in the examination and he failed by 2 marks. If he had secured 5 more marks his percentage of marks would have been 40%.

73. Aparna is twice as old as Savita. What is the difference between their ages?
 I. Five years hence, the ratio of their ages would be 9 : 5.
 II. Ten years back, the ratio of their ages was 3 : 1.
74. What will be the average weight of the remaining class?
 I. Average weight of 30 children out of total 46 in the class is 22.5 kg and that of the remaining children is 29.125 kg. A child having weight more than 40 kg is excluded.
 II. Average weight of a class of 46 children is 23.5 kg. A child weighing 46 kg is dropped out.
75. What was the population of State 'A' in 2013?
 I. Population of the State increases every year by 20% and its population in 2011 was 1,20,000.
 II. Population of State A in 2011 was twice that of State B in the same year.

DIRECTIONS (Qs. 76-80) : Each question consists of two quantities, one on left side and other on right side. Compare the both quantities and choose the option as

- (a) if the quantity on the left is greater.
 (b) if the quantity on the right is greater.
 (c) if both the quantities are equal
 (d) if the relationship cannot be determined without further information.
76. Three boxes contain 20, 25 and 27 sweets respectively

The least number of sweets that need to be transferred so that there is an equal number in each	5
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77. C is the midpoint of segment AE and $AB < DE$

BC	CD
----	----

78. n is a positive integer
 $p = 8 \times 9 \times 11 \times n$

The remainder when p is divided by 6	The remainder when p is divided by 33
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79. A bag contains only red, white and blue balls. One third of the balls are red, one fifth of the balls are white. One ball is to be selected at random.

Probability of drawing a white ball	Probability of drawing a blue ball
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80. $n > 0$

50^n	550^n
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SECTION-C Language Comprehension

DIRECTIONS (Qs. 81-83) : Rearrange the jumbled word in each question and select the word which is opposite in meaning to the rearrange word.

81. PURDIATEE
 (a) Sanction (b) Afflict
 (c) Transient (d) Prowl

82. PDIESNSE
 (a) To forego (b) To deal out
 (c) To disregard (d) To distribute
83. OCIAPRS
 (a) Predisposed (b) Useful
 (c) Interesting (d) Mundane

DIRECTIONS (Qs. 84-86) : Rearrange the jumbled alphabets in the following options and find the odd word among them.

84. (a) LUIPT (b) OSER
 (c) UDB (d) ASIYD
85. (a) TIGAU (b) UFLET
 (c) OIVNIL (d) ELCLO
86. (a) RNCHAB (b) RIDT
 (c) AELF (d) OORT

DIRECTIONS (Qs. 87-89) : Select the most appropriate word(s) from the given choices to fill in the blank(s).

87. His listeners enjoyed his ____ wit but his victims often ____ at its satire.
 (a) lugubrious, suffered (b) bitter, smarted
 (c) lugubrious, smiled (d) trenchant, winced
88. The bell, hung on the door by means of a curved ribbon of steel, was _____ to circumvent. It was hopelessly cracked; but of an evening, at the slightest provocation, it clattered behind the customer with _____ virulence.
 (a) impossible, melodious (b) effortless, loud
 (c) difficult, impudent (d) daunting, harmonious
89. A _____ question caused him to stutter to the point of suffocation. When started by anything perplexing he used to squint.
 (a) courteous, palpably (b) brusque, horribly
 (c) considerate, genially (d) civil, frightfully

DIRECTIONS (Qs. 90-92) : Which sentence has almost the same meaning with that of the question?

90. Far more devastating for the author than the loss of his house to fire was the destruction of the sole copy of his latest novel.
 (a) In his latest book, the author tells of the pain he suffered when he lost his home in a devastating fire.
 (b) Even the destruction of his home in the fire was not as hard for the author to bear as the burning of the manuscript of his new novel.
 (c) The only thing the author was able to rescue from the flames which destroyed his home was the sole copy of his latest book.
 (d) Even more difficult for the author than writing a single book was seeing it destroyed when his house burnt down.
91. Without his help, the job would have been impossible.
 (a) Even though he was very helpful, we were still unable to complete the project.
 (b) Since he wasn't able to give us a hand, we didn't believe we would be able to finish the job.
 (c) There's no way the task could have been done if he had not provided assistance.
 (d) The assignment proved quite easy, even though he refused to give us aid.

92. Having arrived at the church, Martin sat down at the front listening to the music.
 (a) After Martin had arrived at the church, he heard a lovely music at the front.
 (b) After he had arrived at the church, Martin sat down at the front and listened to the music.
 (c) In order to sit down at the front and listen to the music he arrived at the church early.
 (d) At the church Martin wanted to listen to the music so he arrived at the church early.

DIRECTIONS (93-96) : Rearrange the following six sentences (A), (B), (C), (D), (E) and (F) in the proper sequence to form a meaningful paragraph; then answer the questions given below them.

- A. I was pleased by their reaction.
 B. Writing my speech was easy, but I was unsure if I could motivate the employees to donate to those affected by the earthquake.
 C. Instead of throwing out their unusable articles, they had transferred them to my office in the name of donations.
 D. When a reputed company invited me to deliver a lecture on Corporate Social Responsibility, I agreed.
 E. It was an affluent company and the well dressed employees who met me afterwards promised to send lots of donations to my office.
 F. What I saw however when I opened the bags of 'donations' they had send shocked me.
93. Which of the following should be the FOURTH sentence after rearrangement?
 (a) A (b) B
 (c) C (d) D
94. Which of the following should be the FIRST sentence after rearrangement?
 (a) A (b) B
 (c) C (d) D
95. Which of the following should be the LAST (SIXTH) sentence after rearrangement?
 (a) B (b) C
 (c) D (d) E
96. Which of the following should be the SECOND sentence after rearrangement?
 (a) B (b) C
 (c) D (d) E

DIRECTIONS (Qs. 97-99) : Choose the option that best captures the essence of the text.

97. Try before you buy We use this memorable saying to urge you to experience the consequences of an alternative before you choose it, whenever this is feasible . If you are considering buying a van after having always owned sedans, rent one for a week or borrow a friend's. By experiencing the consequences first hand, they become more meaningful. In addition, you are likely to identify consequences you had not even thought of before. May be you will discover that it is difficult to park the van in your small parking space at work, but that, on the other hand , your elderly father has a much easier time getting in and out of it

- A. If you are planning to buy a van after being used to sedans, borrow a van or rent it and try it before deciding to buy it. Then you may realize that parking a van is difficult while it is easier for your elderly father to get in and out of it.
- B. Before choosing an alternative, experience its consequences if feasible. If, for example, you want to change from sedans to a van, try one before buying it. You will discover aspects you may never have thought of.
- C. Always try before you buy anything. You are bound to discover many consequences. One of the consequences of going in for a van is that it is more difficult to park than sedans at the office car park.
- D. We urge you to try products such as vans before buying them. Then you can experience consequences you have not thought of such as parking problems. But your father may find vans more comfortable than cars.
- (a) A (b) B
(c) C (d) D
98. You seemed at first to take no notice of your school fellows, or rather to set yourself against them because they were strangers to you, they knew as little of you as you did of them; this would have been the reason for their keeping aloof from you as well, which you would have felt as a hardship. Learn never to conceive a prejudice against others because you know nothing of them. It is bad reasoning, and makes enemies of half the world. Do not think ill of them till they behave ill to you; and then strive to avoid the faults which you see in them. This will disarm their hostility sooner than pique of resentment or complaint.
- (a) You encountered hardship amongst your school-fellows because you did not know them well. You should learn to not make enemies because of your prejudices irrespective of their behaviour towards you.
- (b) The discomfort you felt with your school-fellows was because both sides knew little of each other. Avoid prejudice bad behaviour from others, and then win them over by shunning the faults you have observed.
- (c) The discomfort you felt with your school-fellows was because both sides knew little of each other. You should not complain unless you find others prejudiced against you and have attempted to carefully analyse the faults you have observed in them.
- (d) You encountered hardship amongst your school-fellow because you did not know them well. You should learn to not make enemies because of your prejudices unless they behave badly with you.
99. Seen from the perspective of potential, India is truly one of the most exciting places on earth. In the 16 years since Microsoft set up operations in India, I've seen first hand the incredible strides the country has made, building an information technology almost from scratch. This industry is an engine that has driven the creation of new opportunities for hundreds of thousands of people and established India as one of the world's most important centres for innovation. Thanks to the combination of rapid economic growth, an

emerging middle class, and an impressive record of technical excellence, India stands as one of the great success stories of our time.

- (a) India is an exciting place and the excitement has been palpable ever since Microsoft setup its shop here.
- (b) Thanks to the prolific growth of the information technology industry, India has of late found its place on the global map.
- (c) It is technology, employment and innovation that have contributed to the emergence of a highly successful India over the past decade and a half.
- (d) India's success lies in its rapid unleashing of potential, whether it be in the economy, technology or the power to innovate.
100. Physically, inertia is a feeling that you just can't move; mentally, it is a sluggish mind. Even if you try to be sensitive, if your mind is sluggish, you just don't feel anything intensely. You may even see a tragedy enacted in front of your eyes and not be able to respond meaningfully. You may see one person exploiting another, one group persecuting another, and not be able to get angry. Your energy is frozen. You are not deliberately refusing to act; you just don't have the capacity
- Which of the following is an apt summary for the above passage?
- (a) Inertia makes your body and mind sluggish. They become insensitive to tragedies, exploitation, and persecution because it freezes your energy and decapacitates it.
- (b) When you have inertia you don't act although you see one person exploiting another or one group persecuting another. You don't get angry because you are incapable.
- (c) Inertia is of two types – physical and mental. Physical inertia restricts bodily movements. Mental inertia prevents mental response to events enacted in front of your eyes.
- (d) Physical inertia stops your body from moving; mental inertia freezes your energy and stop your mind from responding meaningfully to events, even tragedies, in front of you.

DIRECTIONS (Qs. 101-120) : Read the following passages carefully and answer the questions given below it.

PASSAGE-1

The evolution of Bring Your Own Device (BYOD) trend has been as profound as it has been rapid. It represents the more visible sign that the boundaries between personal life and work life are blurring. The 9 am - 5 pm model of working solely from office has become archaic and increasingly people are working extended hours from a range of locations. At the very heart of this evolution is the ability to access enterprise networks from anywhere and anytime. The concept of cloud computing serves effectively to extend the office out of office. The much heralded benefit of BYOD is greater productivity. However, recent research has suggested that this is the greatest myth of BYOD and the reality is that BYOD in practice poses new challenges that may outweigh the benefits. A worldwide survey commissioned by Fortinet chose to look at attitudes towards BYOD and security from the users'

point of view instead of the IT managers. Specifically the survey was conducted in 15 territories on a group of graduate employees in their early twenties because they represent the first generation to enter the workplace with an expectation of own device use. Moreover, they also represent tomorrow's influences and decision makers. The survey findings reveal that for financial organizations, the decision to **embrace** BYOD is extremely dangerous. Larger organizations will have mature IT strategies and policies in place. But what about smaller financial businesses? They might not have such well developed strategies to protect confidential data. Crucially, within younger employee group, 55% of the people share an expectation that they should be allowed to use their own devices in the workplace or for work purposes. With this expectation comes the very real risk that employees may consider contravening company policy banning the use of own devices. The threats posed by this level of **subversion** cannot be overstated. The survey casts doubt on the idea of BYOD leading to greater productivity by revealing the real reason people want to use their own devices. Only 26% of people in this age group cite efficiency as the reason they want to use their own devices, while 63% admit that the main reason is so they have access to their favourite applications. But with personal applications so close to hand, the risks to the business must surely include distraction and time wasting. To support this assumption 46% of people polled acknowledged time wasting as the greatest threat to the organization, while 42% citing greater exposure to theft or loss of confidential data. Clearly, from a user perspective there is a great deal of contradiction surrounding BYOD and there exists an undercurrent of selfishness where users expect to use their own devices, but mostly for personal interest. They recognize the risks to the organization but are adamant that those risks are worth taking.

101. Which of the following is **not true** about BYOD?

- (a) BYOD enables employees to access enterprise network from anywhere and anytime
- (b) Due to evolution of BYOD trend the 9am - 5pm model of working solely from office has become outdated
- (c) Recent research has confirmed that BYOD boosts organisational productivity
- (d) The concept of cloud computing facilitates the BYOD trend

102. According to the passage, the expectation of younger employees that they should be allowed to use their own devices in the workplace, entails which of the following risks?

- (A) Younger employees may deliberately transfer confidential data of their companies to rivals if they are not allowed to use their own devices for work purpose
 - (B) Younger employees may strongly feel like leaving the company if it presents usage of own device and join some other company that does not have such stringent policies
 - (C) Younger employees may consider flouting company policy prohibiting usage of their own devices in the workplace or for work purposes
- (a) Only (C) (b) Only (B)
 (c) Both (A) and (C) (d) Only (A)

103. According to the findings of the survey conducted by Fortinet, why do majority of employees prefer using their own devices for work purpose?

- (a) As they often find that the devices provided by the company lack quality
- (b) As they have access to their favourite applications while working
- (c) As majority of them believe that output doubles when they use their own devices for work purpose
- (d) As handling data from their own devices reinforces their sense of responsibility

104. What is/are the author's main objective(s) in writing the passage?

- (A) To break the myth that BYOD promotes employee efficiency and organisational productivity
 - (B) To suggest ways to control subversion across levels of corporate chain of command
 - (C) To throw light upon the fact that employees even after knowing the risks involved, prefer to use their own devices for work purpose mostly for personal benefits
- (a) Both (A) and (C) (b) All (A), (B) and (C)
 (c) Only (C) (d) Only (A)

PASSAGE-2

The most prominent opposition with which Derrida's earlier work is concerned is that between speech and writing. According to Derrida, thinkers as different as Plato, Rousseau, Saussure, and Levi-Strauss, have all denigrated the written word and valorised speech, by contrast, as some type of pure conduit of meaning. Their argument is that while spoken words are the symbols of mental experience, written words are the symbols of that already existing symbol. As representations of speech, they are doubly derivative and doubly far from a unity with one's own thought. Without going into detail regarding the ways in which these thinkers have set about justifying this type of hierarchical opposition, it is important to remember that the first strategy of deconstruction is to reverse existing oppositions. In *Of Grammatology* (perhaps his most famous work), Derrida hence attempts to illustrate that the structure of writing and grammatology are more important and even 'older' than the supposedly pure structure of presence-to-self that is characterised as typical of speech.

For example, in an entire chapter of his *Course in General Linguistics*, Ferdinand de Saussure tries to restrict the science of linguistics to the phonetic and audible word only. In the course of his inquiry, Saussure goes as far as to argue that "language and writing are two distinct systems of signs: the second exists for the sole purpose of representing the first". Language, Saussure insists, has an oral tradition that is independent of writing, and it is this independence that makes a pure science of speech possible. Derrida vehemently disagrees with this hierarchy and instead argues that all that can be claimed of writing - e.g. that it is derivative and merely refers to other signs - is equally true of speech. But as well as merely criticising such a position for certain unjustifiable presuppositions, including the idea that we are self-identical with ourselves in 'hearing' ourselves think, Derrida also makes explicit the manner in which such a hierarchy is rendered untenable from within Saussure's own text.

Most famously, Saussure is the proponent of the thesis that is commonly referred to as "the arbitrariness of the sign", and this asserts, to simplify matters considerably, that the signifier bears no necessary relationship to that which is signified. Saussure derives numerous consequences from this position, but as Derrida points out, this notion of arbitrariness and of "unmotivated institutions" of signs, would seem to deny the possibility of any natural attachment. After all, if the sign is arbitrary and eschews any foundational reference to reality, it would seem that a certain type of sign (i.e. the spoken) could not be more natural than another (i.e. the written). However, it is precisely this idea of a natural attachment that Saussure relies upon to argue for our "natural bond" with sound, and his suggestion that sounds are more intimately related to our thoughts than the written word hence runs counter to his fundamental principle regarding the arbitrariness of the sign.

105. According to the passage, which of the following does not follow Derrida's thoughts on the written word?
- The presence-to- self structure is not more important than speech.
 - The structure of writing is older than speech.
 - Grammatology is more important than language.
 - The deprecation of the written word.
106. In the passage Saussure defines language as:
- A pure science.
 - A derivative of writing.
 - Being independent of writing.
 - Dependent on writing.
107. Which of the following best summarizes the passage?
- Language is innate in human beings.
 - Language is based on pure science.
 - Language is better than speech.
 - Language is neither better nor worse.
108. Which of these is the best description of the author's tone in the passage?
- aggravated
 - analytical
 - supercilious
 - diagnostic

PASSAGE-3

Sometimes one's evidence for a proposition is sharp. For example, you've tossed a biased coin thousands of times. 83% of the tosses landed heads, and no pattern has appeared even though you've done a battery of statistical tests. Then it is clear that your confidence that the next toss will land heads should be very close to 83%. Sometimes one's evidence for a proposition is sparse but with a clear upshot. For example: You have very little evidence as to whether the number of humans born in 1984 was even. But it is clear that you should be very near to 50% confident in this claim. But sometimes one's evidence for a proposition is sparse and unspecific. For example: A stranger approaches you on the street and starts pulling out objects from a bag. The first three objects he pulls out are a regular-sized tube of toothpaste, a live jellyfish, and a travel-sized tube of toothpaste. To what degree should you believe that the next object he pulls out will be another tube of toothpaste? The answer is not clear. The contents of the bag are clearly bizarre. You have no theory of "what insane people on the street are likely to carry in their bags," nor have you encountered any particularly relevant statistics about this. The situation doesn't have any obvious symmetry, so principles of

indifference seem to be of no help. Should your probability be 54%? 91%? 18%?

It is very natural in such cases to say: You shouldn't have any very precise degree of confidence in the claim that the next object will be toothpaste. It is very natural to say: Your degree of belief should be indeterminate or vague or interval-valued. On this way of thinking, an appropriate response to this evidence would be a degree of confidence represented not by a single number, but rather by a range of numbers. The idea is that your probability that the next object is toothpaste should not equal 54%, 91%, 18%, or any other particular number. Instead it should span an interval of values, such as 10%, 80%. The toothpaste-in-the-bag example is artificial, but many realistic examples have been proposed. What is your confidence that "there will be a nuclear attack on an American city this century"? What is your state of opinion concerning "the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth owners in the social system in 40 years"?

It is tempting to agree with J. M. Keynes that "About these matters there is no scientific basis on which to form any calculable probability whatever" and to think that the problem isn't just that our computers aren't fast enough. The idea is not that some computational or representational limitation prevents you from having a definite probability. Give an agent access to exactly your evidence relevant to the toothpaste claim, or, say, the claim that there is a God. Give her all the computers, representational tools, brain upgrades, etc. that you like. Still it seems as though the agent would go wrong to have any very precise degree of belief in the relevant claim. According to Scott Sturgeon: When evidence is essentially sharp, it warrants a sharp or exact attitude; when evidence is essentially fuzzy-as it is most of the time-it warrants at best a fuzzy attitude.

109. According to the author which of the following is the most likely reason for not arriving at an exact probability?
- The size of the sample is too large.
 - The computers are not adequately equipped to calculate the exact probability.
 - The quality of evidence that is being assessed.
 - The degree of belief that one has in the sample.
110. Which of the following statements is not supported in the passage?
- Non specific evidence reduces our belief in the probability of any happening.
 - Reliance on machines increases our belief in the probability of any happening.
 - The contents of a sample increase our belief in the probability of any happening.
 - A symmetrical sample increases our belief in the probability of any happening.
111. In the passage, the author was concerned with which of the following?
- Arriving at ways to calculate Probability through real life examples.
 - Proving the theory of Keynes about the scientific calculation of Probability.
 - Showing the importance of computers in arriving at the correct Probability.

- (d) Validating the fact that certainty about Probability depends on nature of evidence.
112. Why according to the author is the range a better representative of probability as compared to specific numbers?
- (a) Because the degree of belief in most cases cannot be precise.
 (b) Because most situations follow a symmetrical pattern.
 (c) There is available scientific data to prove that a range is a better representative of probability.
 (d) It is easier to calculate range using advanced computers and scientific methods.

PASSAGE-4

When selfie was crowned the Word of 2013 by the Oxford Dictionaries, the media reaction ranged from apocalyptic to cautiously optimistic. For the Calgary Herald's Andrew Cohen, "selfie culture" represents the "critical mass" of selfish entitlement; for Navneet Alang in the Globe and Mail, selfies are inextricable from the need for self-expression, a "reminder of what it means to be human." For the Guardian's Jonathan Freedland, the selfie is both: at once "the ultimate emblem of the age of narcissism" and a function of the "timeless human need to connect."

With a few exceptions, commentators tended to converge on one point: the selfie, and the unencumbered act of self-creation it represents, is unmistakably of our time, shorthand for a whole host of cultural tropes wedded to the era of the smartphone. As Jennifer O'Connell, writing for the Irish Times, puts it: "It's hard to think of a more appropriate-or more depressing-symbol of the kind of society we have become. We are living in an age of narcissism, an age in which only our best, most attractive, most carefully constructed selves are presented to the world."

But our obsession with the power of self-creation-and its symbiotic relationship with the technology that makes it possible-is hardly new. Even the "selfie artist" is hardly a creation of 2013. Its genesis isn't in the iPhone, but in the painted portrait: not among the Twitterati, but among the silk-waist coated dandies of nineteenth-century Paris.

It may seem like a stretch to mention selfie artists like Kim Kardashian or James Franco in the same breath as, for example, the French writer Jules-Amédée Barbey d'Aureville, but today's self-creators owe more to d'Aureville's view of the power of public image than you might think. For d'Aureville and his ilk-recently celebrated in coffee-table book *I Am Dandy*, which profiles "modern-day" dandies from across the globe, dandyism was about more than mere sartorial elegance. It was a way of consciously existing in the world.

And d'Aureville existed more consciously than most. His clothing was as legendary as his writing. He famously kept a collection of bejeweled walking sticks in his front parlor and informed journalists that his favorite was to be referred to as "ma femme." His 1844 hagiography of Beau Brummel, a dandy of another age, doubles as a manifesto: in his eyes, the true dandy evokes surprise, emotion, and passion in others, but remains entirely insensible himself, producing an effect to which he alone remains immune. D'Aureville's celebration of the dandy at times borders on idolatry: for d'Aureville, dandies are "those miniature Gods, who always try to create surprise by remaining impassive."

113. The word "dandyism" includes all except which one of the following?
- (a) Viduals (b) Walking sticks
 (c) Nicknames (d) Clothes
114. As far as the modern day 'selfies' go, the author is mainly concerned with:
- (a) The obsession with one's self.
 (b) The inclusion in the dictionary.
 (c) The fixation with the novelty.
 (d) The narcissistic overtones.
115. The usage of the word "apocalyptic" in the passage can be best substituted by which of the following?
- (a) Revelatory (b) Prophetic
 (c) Indifferent (d) Critical
116. Which of these is the best description of the author's tone in the passage?
- (a) Matter of fact (b) Derisive
 (c) Casual (d) Offensive

PASSAGE-5

Both political and academic efforts to get to grips with terrorism have repeatedly been hung up on the issue of definition, of distinguishing terrorism from criminal violence or military action. Most writers have no trouble compiling a list of legal or other definitions running into dozens, and then adding their own to it. One well-known survey opens with a whole chapter on the issue; another managed to amass over a hundred definitions before concluding that the search for an 'adequate' definition was still on. Why the difficulty? In a word, it is labeling, because 'terrorist' is a description that has almost never been voluntarily adopted by any individual or group. It is applied to them by others, first and foremost by the governments of the states they attack. States have not been slow to brand violent opponents with this title, with its clear implications of inhumanity, criminality, and - perhaps most crucially - lack of real political support. Equally, states find it quite easy to produce definitions of terrorism. The USA, for instance, defines it as 'the calculated use or threat of violence to inculcate fear, intended to coerce or intimidate governments or societies'; the UK as 'the use or threat, for the purpose of advancing a political, religious, or ideological course of action, of serious violence against any person or property'. Having done this, though, they tend to find it harder to specify the behaviour thus indicted; instead they label certain organizations as 'terrorist' and make membership of them an offence. So terrorism appears to be a state of mind rather than an activity.

The problem here for the detached observer is that state definitions simply assume that the use of violence by 'sub national groups' is automatically illegal. In the state's view, only the state has the right to use force - it has, as academics tend to say, a monopoly on the legitimate use of violence. But outsiders may wonder whether all use of violence by non-state actors is equally unjustifiable, even if it is formally illegal. The very first revolutionary terrorists in the modern age believed themselves justified in opposing with violence a repressive regime in which no freedom of political expression or organization was permitted. And, crucially, many foreign critics of Tsarist Russia - governments included - agreed with them. This has continued to be the case, as when Syria recently, publicly, and embarrassingly refused to endorse the British and American insistence that Arab

armed actions against Israel are part of a single global phenomenon of terrorism. Thus arose the notorious adage that 'one person's terrorist is another's freedom fighter'. This relativism is central to the impossibility of finding an uncontentious definition of terrorism. Some writers have suggested that instead of pursuing the will-o'- the-wisp of precise definition (one specialist has recently called terrorism 'a box with a false bottom') it would make more sense to construct a typology of the kinds of actions that are generally seen as 'terrorist'.

It is certainly the case that many kinds of action repeatedly used by terrorist groups - assassination, kidnapping, hijacking - are seldom if ever used in conventional military conflicts; they do seem to signal a special type of violence. But any such list soon peters out: too many terrorist actions duplicate either military or criminal acts. In any case, it is, in the end, not so much the actions themselves that are characteristic of terrorism, as their intended political function. To get to the real definition of terrorism we need to unpick its political logic. For the core of nearly all definitions of terrorism - the use of violence for political ends - is too similar to the definition of war to be of much use.

117. According to the author, which one of the following, best shows the result of lack of a clear definition of terrorism?
- Terrorists operate at will.
 - All Terrorist organizations have not been banned.
 - Actions against terrorists are not supported by all countries.
 - Inability of politicians and academicians to find a solution to counter terrorism.
118. Which of the following does the passage seem to suggest would be the best way to solve the problem of finding a definition of terrorism?
- If the definition is not applied to terrorists.
 - If countries come together and form a common definition of terrorism.
 - By differentiating terrorism from military action.
 - If a list of actions is identified as coming under the definition of terrorism.
119. What seems to be the central idea of the passage?
- To highlight the activities of terrorists.
 - To identify the reasons for a non-cohesive universal action plan to tackle terrorism.
 - To differentiate between military action and terrorism.
 - To give reasons for States justifying their use of force.
120. Which of the following statements is validated in the passage?
- 'terrorist' is a description that has been voluntarily adopted by an individual or a group.
 - Terrorism is a violent activity and is not related to the state of the mind.
 - Curb on freedom of political expression was the genesis of terrorism.
 - The core definition of terrorism is different from the definition of war.

SECTION-D Intelligence and Critical Reasoning

121. If every third letter from the following English alphabet is dropped, which letter will be seventh to the right of eleventh letter from your right?

ABCDEFGHIJKLMNOPQRSTUVWXYZ

- V
- U
- K
- I

122. If each of the alphabets of the word MIRACLE is arranged in alphabetical order from left to right and then each vowel in the new word thus formed is changed to the next letter in the English alphabetical series and each consonant is changed to the previous letter in the English alphabetical series which of the following will be fifth from the right?

- K
- S
- F
- E

123. If the first half of the English alphabet is reversed and so is the second half, then which letter is seventh to the right of twelfth letter from the left side?

ABCDEFGHIJKLMNOPQRSTUVWXYZ

- S
- V
- U
- T

DIRECTIONS (Qs.124-126): These questions are based on the following information. Study it carefully and answer the questions.

Seven members L, H, K, T, F, J and R represent different countries in Olympics viz, USA, China, Korea, France, Russia, Australia and Japan; each one competes for a different sport, viz. Volleyball, Archery, Rifle Shooting, Tennis, Boxing, Athletics and Football. The order of persons, countries and games is not necessarily the same.

K represents China for Archery. T represent USA but not for Volleyball or Rifle Shooting. The one who represents Japan competes for Boxing. F competes for Volleyball but not for Korea. L represent Australia for Athletics. The one who represents Russia competes for Tennis. J does not represent Korea or Japan. R competes for Rifle Shooting.

124. Which of the following combinations is correct?
- J - Tennis - France
 - R - Tennis - Russia
 - R - Tennis - France
 - J - Tennis - Russia
125. Who represents Japan?
- F
 - R
 - J
 - H
126. The one who competes for Rifle Shooting, represents which country?
- France
 - Korea
 - Japan
 - USA

DIRECTIONS (Qs. 127-129): Study the following information to answer the given questions:

- Six plays are to be organised from Monday to Sunday - one play each day with one day when there is no play. 'No play' day is not Monday or Sunday.
- The plays are held in sets of 3 plays each in such a way that 3 plays are held without any break, ie 3 plays are held in such a way that there is no 'No play' day between them but immediately before this set or immediately after this set it is 'No play' day.
- Play Z was held on 26th and play X was held on 31st of the same month.
- Play B was not held immediately after play A (but was held after A, not necessary immediately) and play M was held immediately before Q.
- All the six plays were held in the same month.

127. Which plays was organised on Monday?
 (a) A (b) M
 (c) Q (d) Cannot be determined
128. Which day was play Z organised ?
 (a) Tuesday
 (b) Monday
 (c) Wednesday
 (d) Cannot be determined
129. Which date was a 'No play' day?
 (a) 26th (b) 28th
 (c) 29th (d) Cannot be determined

DIRECTIONS (Q. 130-132) : Study the following information and answer the questions given below it.

Seven members H, I, J, K, L, M and N are working in different cities Ahmedabad, Bangalore, Chennai, Hyderabad, Kolkata, Delhi and Mumbai, not necessarily in the same order. Each one has a different mother tongue—Tamil, Kannada, Telugu, Hindi, Marathi, Punjabi and Bangla, not necessarily in the same order.

J works in Bangalore and his mother tongue is not Tamil or Marathi. K's mother tongue is Punjabi and he works in Ahmedabad. L and M do not work in Chennai and none of them has Marathi mother tongue. I works in Hyderabad and his mother tongue is Telugu. The one who works in Delhi had Bangla mother tongue. N works in Mumbai and his mother tongue is Hindi. L does not work in Kolkata.

130. What is J's mother tongue?
 (a) Telugu (b) Hindi
 (c) Bangla (d) Kannada
131. Who works in Chennai?
 (a) H (b) L
 (c) M (d) L or M
132. Which of the following combinations is correct?
 (a) Marathi-I-Hyderabad (b) Tamil-M-Kolkata
 (c) Marathi-I-Chennai (d) Punjabi-K-Delhi

DIRECTIONS (Qs. 133 & 134) : In each of these questions, various terms of a series are given with one term missing as shown by (?). Choose the missing term :

133. QPO, SRQ, UTS, WVU, (?)
 (a) XVZ (b) YXW
 (c) ZYA (d) VWX
134. 2Z5, 7Y7, 14X9, 23W11, 34V13, (?)
 (a) 27U24 (b) 45U15
 (c) 47U15 (d) 27V14

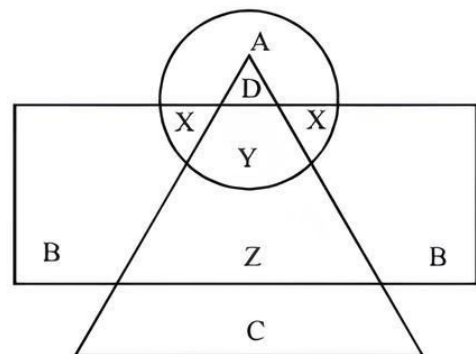
DIRECTIONS (Q. 135-137) : Read the information given below to answer the questions that follows :

Roma and Mohan are a married couple having two daughters named Smita and Devika. Devika is married to Aman who is the son of Madhu and Jeewan. Romila is the daughter of Aman. Krishna who is Aman's sister is married to Sunil and has two sons Anuj and Ankur. Ankur is the grandson of Madhu and Jeewan.

135. How is Krishna related to Devika ?
 (a) Sister-in-law (b) Sister
 (c) Aunt (d) None of these
136. What is the relationship between Anuj and Romila?
 (a) Uncle – Niece (b) Father – Daughter
 (c) Husband – Wife (d) Cousins

137. Which of the following is true ?
 (a) Anuj is the son of Smita.
 (b) Romila is the cousin of Krishna.
 (c) Madhu is Sunil's mother-in-law.
 (d) Jeewan is Devika's maternal uncle.
138. From her home, Prerna wishes to go to school. From home, she goes towards North and then turns left and then turns right, and finally she turns left and reaches school. In which direction her school is situated with respect to her home?
 (a) North - East (b) North - West
 (c) South - East (d) South - West
139. Kailash faces towards north. Turning to his right, he walks 25 metres. He then turns to his left and walks 30 metres. Next, he moves 25 metres to his right. He then turns to the right again and walks 55 metres. Finally, he turns to the right and moves 40 metres. In which direction is he now from his starting point ?
 (a) South-West (b) South
 (c) North-West (d) South-East
140. A rat runs 20' towards east and turns to right, runs 10' and turns to right, runs 9' and again turns to left, runs 5' and then to left, runs 12' and finally turns to left and runs 6'. Now, which direction is the rat facing?
 (a) East (b) West
 (c) North (d) South
141. 'Hygrometer' is related to 'Humidity' in the same way as 'Sphygmomanometer' is related to
 (a) Pressure (b) Blood Pressure
 (c) Precipitation (d) Heart Beat
142. In a group, 20% of the members own only two cars each, 40% of the remaining own three cars each and the remaining members own only one car each. Which of the following statements is definitely true from the given statements ?
 (a) Only 20% of the total members own three cars each.
 (b) 48% of the total members own only one car each.
 (c) 60% of the total members own at least two cars each.
 (d) 80% of the total members own at least one car.
143. Three friends had dinner at a restaurant. When the bill was received, Amita paid $\frac{2}{3}$ as much as Veena paid and Veena paid $\frac{1}{2}$ as much as Tanya paid. What fraction of the bill did Veena pay ?
 (a) $\frac{1}{3}$ (b) $\frac{3}{11}$ (c) $\frac{12}{13}$ (d) $\frac{5}{8}$

Directions (Qs. 144-147) : In the following diagram, the circle represents college Professors, the triangle stands for surgical Specialists, and medical Specialists are represented by the rectangle



144. College professors who are also surgical Specialists are represented by
 (a) A (b) B
 (c) C (d) D
145. Surgical Specialists who are also Medical Specialists but not Professors are represented by
 (a) B (b) C
 (c) X (d) Z
146. C represents
 (a) Medical Specialists
 (b) College Professors
 (c) Surgical Specialists
 (d) Medical and surgical Specialists
147. B represents
 (a) Professors who are neither Medical nor surgical Specialists
 (b) Professors who are not surgical Specialists
 (c) Medical Specialists who are neither Professors nor Surgical Specialists
 (d) Professors who are not Medical Specialists
148. It being given that $>$ denotes $+$, $<$ denotes $-$, \div denotes \div , $=$ denotes $=$, $<$ denotes 'less than' and $>$ denotes 'greater than', find which of the following is a correct statement:
 (a) $3 + 2 > 4 = 9 + 3 < 1$ (b) $3 > 2 > 4 = 18 + 3 < 2$
 (c) $3 > 2 < 4 \times 8 + 4 < 2$ (d) $3 + 2 < 4 \times 9 + 3 < 3$
153. Statement : He stressed the need to stop the present examination system and its replacement by other methods which would measure the real merit of the students.
 Conclusions:
 I Examinations should be abolished.
 II. The present examination system does not measure the real merit of the students.
154. Statement : To cultivate interest in reading, the school has made it compulsory from June this year for each student to read two books per week and submit a weekly report on the books.
 Conclusions :
 I Interest in reading can be created by force.
 II. Some students will eventually develop interest in reading.
155. Statement: Recent trends also indicate that the number of child migrants in large cities is increasing. These children leave their families to join the ranks of urban poor doing odd jobs in markets, workshops, hotels or in service sectors.
 Conclusions:
 I Migration to big cities should be checked.
 II. The plight of poor children should be thoroughly studied.
156. Statement: The eligibility for admission to the course is minimum second class Master's degree. However, the candidates who have appeared for the final year examination of Master's degree can also apply.
 Conclusions:
 I All candidates who have yet to get their Master's degree will be there in the list of selected candidates.
 II. All candidates having obtained second class Master's degree will be there in the list of selected candidates.

DIRECTIONS (Qs. 149-152) : Each of the following questions consists of two statements – one labelled as the Assertion (A) and other as Reason (R). You have to examine these two statements carefully and select the answer :

- (a) Both A and R are true and R is the correct explanation of A.
 (b) Both A and R are true but R is not the correct explanation of A.
 (c) A is true but R is false.
 (d) Both A and R are false.
149. Assertion (A) : Simla is colder than Delhi
 Reason (R) : Simla is at higher altitude as compared to Delhi.
150. Assertion (A) : Cotton is grown in alluvial soils.
 Reason (R) : Alluvial soils are very fertile.
151. Assertion (A) : Forest cutting is undesirable from the point of view of soil erosion.
 Reason (R) : Cutting of forests reduces the interception of rain water.
152. Assertion (A) : When a body is dipped in a liquid fully or partially, there is a decrease in its weight.
 Reasons (R) : The decrease in weight is due to the higher density of the displaced liquid.

DIRECTIONS (Qs. 153-156) : Each of the questions has a statement followed by two conclusions numbered I and II. Consider the statement and the following conclusions. Decide which of the conclusions follows from the statement. Mark answer as:

- (a) If only conclusion I follows
 (b) If only conclusion II follows
 (c) If neither I nor II follows and
 (d) If both I and II follow.

DIRECTIONS (Qs 157-160) : Below in each of the questions are given two statements I and II. These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statements. Read both the statements and decide which of the following answer choice correctly depicts the relationship between these two statements.

Mark answer

- (a) If statement I is the cause and statement II is its effect.
 (b) If statement II is the cause and statement I is its effect.
 (c) If both the statements I and II are effects of independent causes.
 (d) If both the statements I and II are effects of some common cause.
157. Statements:
 I The vegetable prices in the local market have increases manifold during the past few days.
 II. Incessant rains have created flood like situation in most rural parts of the State.
158. Statements:
 I Police authority has recently increased vigil during the evening hours in the locality.
 II. There has been considerable reduction in the incidents of petty crimes in the locality.

159. Statements:
 I. The car manufacturing companies have recently increased the prices of mid-sized cars.
 II. The Government recently increased the duty on mid-sized cars.
160. Statements:
 I. The employees of the biggest bank in the country have given an indefinite strike call starting from the third of the next month.
 II. The employees of the Central Government have withdrawn their week long demonstrations.

SECTION-E Indian & Global Environment

161. Which of the following articles of the Indian constitution deals with citizenship in India?
 (a) Article 333 to 337 (b) Article 17 to 20
 (c) Article 05 to 11 (d) Article 01 to 04
162. When was the planning commission established?
 (a) 10 March, 1950 (b) 15 March, 1950
 (c) 20 March, 1950 (d) 16 March, 1951
163. Which of the following companies has topped the fortune Global 500 list of the world's biggest companies?
 (a) Wal Mart (b) Sinopel Group
 (c) Indian Oil Corp (d) Exxonmobil
164. National Institute of Design which is sought to be recognized as an institution of national importance is located at?
 (a) Ahmedabad (b) Vadodara
 (c) Surat (d) Jamnagar
165. Vishal Sinha has been appointed as the new CEO of?
 (a) HCL (b) Infosys
 (c) Amazon (d) Microsoft
166. Who took over as the fourth Deputy Governor of the Reserve Bank of India (RBI) during July 2014?
 (a) Subhash Sheoratan Mundra
 (b) Dr. Subir Gokarn
 (c) Anand Sinha
 (d) Urjit R. Patel
167. Who is the speaker of the Lok Sabha?
 (a) Sumitra Mahajan (b) Meira Kumar
 (c) Ravishankar Prasad (d) Prakash Javdekar
168. Which article of the Indian constitution provides for the financial provisions?
 (a) Article 352 (b) Article 356
 (c) Article 360 (d) Article 361
169. Which sector of the Indian Economy contributes largest to the GNP?
 (a) Primary sector (b) Secondary sector
 (c) Tertiary sector (d) Public sector
170. According to the Telecom Consumers Complaint Redressal (Third Amendment) Regulations 2014, the minimum broadband speed is?
 (a) 256 kbps (b) 512 kbps
 (c) 1 mbps (d) 2 mbps
171. A new 24x7 channel called Arun Prabha is proposed to be started which would act as a platform?
 (a) for culture of tribal people all over India.
 (b) for cultural and linguistic identity of the North-East.
 (c) to showcase success of the Indians all over the world.
 (d) for all art forms related to Indian culture.
172. Who became the first chief minister of Telangana?
 (a) Chandrababu Naidu (b) Jagan Mohan Reddy
 (c) YS Vijayamala (d) Chandrasekhar Rao
173. The Reserve Bank of India is planning to launch a new category of banks called D-SIB. What does D-SIB stands for
 (a) Domestic Systematically Important Banks
 (b) Domestic Saving & Investment Banks
 (c) Domestic Synchronised Important Banks
 (d) Domestic Synchronised Improvised Banks
174. Ox-bow lake is a feature formed by
 (a) River erosion in youthful stage
 (b) Transportation action of the river
 (c) River erosion in mature stage
 (d) Deposition in old stage of a river
175. Who founded the IOC to organise the Olympic games in 1894?
 (a) J.H. Bacquerel (b) Baron de Coubertin
 (c) Khalid Ali Ansari (d) None of the above
176. Which of the following Indian companies have achieved market capitalization of ₹ 5 lakh crore?
 (a) ONGC (b) TCS
 (c) GAIL (d) Reliance industries
177. Luis Suarez, a soccer player was recently in news. He belongs to which of the following country?
 (a) Brazil (b) Spain
 (c) Paraguay (d) Uruguay
178. According to latest Economic Census released by National Statistical Association, which state has emerged top among states having more household
 (a) Haryana (b) Maharashtra
 (c) Tamil Nadu (d) Karnataka
179. According to a survey, which of the following cities is expected to become world's top tourist destination ?
 (a) London (b) Bangkok
 (c) Paris (d) Singapore
180. United States and India in 2014 launched a reading initiative named READ Alliance. What is the full form of READ?
 (a) Read-Engagement-Achievement-Dreamt
 (b) Read-Engage-Achieve-Dream
 (c) Reading-Engagement-Achievement-Dream
 (d) Read and Engage in Achievement of Dreams
181. Which one of the following is the busiest ocean route in the world?
 (a) Mediterranean Suez Route
 (b) South Atlantic Route
 (c) North Atlantic Route
 (d) Pacific Ocean Route
182. The Foreign Direct Investment (FDI) cap in defence sector has been increased to?
 (a) 26% (b) 33%
 (c) 49% (d) 51%
183. The first Indian to become the Chairperson of ICC is?
 (a) N. Srinivasan (b) Sunil Gavaskar
 (c) Kapil Dev (d) Lalit Modi

184. Recently, which bank became the first state-run lender to allow withdrawal of funds to individuals from ATM's without an account in the bank?
 (a) United Bank of India (b) State Bank of India
 (c) Bank of India (d) Corporation Bank
185. Which among the following has become the first new generation private sector bank to launch an electronic Kisan Card on the RuPay platform?
 (a) Axis Bank (b) HDFC Bank
 (c) ICICI (d) City Bank
186. Recently the Reserve Bank of India (RBI) on 2 April 2014 granted in-principle approvals to two companies to start new banks in India. Name the two firms?
 (a) LIC Housing Finance Ltd and L&T Finance Holdings
 (b) Reliance Capital and Religare Enterprises
 (c) Shriram Capital and Bandhan Financial Services Pvt. Ltd
 (d) IDFC Ltd and Bandhan Financial Services Pvt. Ltd
187. India has signed audio-visual cooperation treaty with which of the following countries?
 (a) USA (b) Canada
 (c) Russia (d) France
188. Saraswati Samman is given to which field?
 (a) Sanskrit Literature (b) Science
 (c) Literature (d) Social Harmony
189. Recently, President of India has cleared the ordinance of the SEBI law. The ordinance empowers the SEBI chairman to order searches and seizures on ____?
 (a) Illegal Trade
 (b) Ponzi Schemes
 (c) Inside Trading
 (d) Foreign Direct Investments
190. The government of India has announced to set up National Investment and Manufacturing Zones (NIMZs) in 16 cities. Which among the following is not one of them?
 (a) Nagpur (b) Kolar
 (c) Medak (d) Vijayawada
191. The bank to launch 'video branch' is?
 (a) HSBC (b) ICICI
 (c) IndusInd (d) Yes Bank
192. Micros Systems, a cloud firm has been taken over by?
 (a) SAP (b) Oracle
 (c) Microsoft (d) Apple
193. Which of the following commodities have been recently approved by Cabinet Committee on Economic Affairs (CCEA) to include under the purview of stock holding limits under the Essential Commodities Act, 1955?
 (a) Onion & Jute (b) Jute & Potato
 (c) Potato & Onion (d) Tomato & jute
194. Chung Hung Won is the Prime Minister of?
 (a) South Korea (b) Vietnam
 (c) Laos (d) Cambodia
195. Which of the following countries has topped the medal list in the Commonwealth-2014?
 (a) Australia (b) Canada
 (c) England (d) Scotland
196. According to latest economic census, which among the following states has highest maximum number of employees?
 (a) Uttar Pradesh (b) West Bengal
 (c) Maharashtra (d) Tamil Nadu
197. Who among the following has been appointed as Chairman of Central Board of Direct Tax (CBDT)?
 (a) Srishant Shukla
 (b) K V Chowdary
 (c) Krishna Nair
 (d) Chandrabhanu Singh
198. Recently, India and which one of the following countries agreed to update the Treaty of Peace and Friendship 1950?
 (a) China (b) Pakistan
 (c) Nepal (d) Bangladesh
199. Currently, which country holds the chair of the Group of Twenty (G-20) forum?
 (a) Russia (b) Canada
 (c) Brazil (d) Australia
200. Which of the following cities are the world's first and second populous cities in 2014 ?
 (a) Berlin, Tokyo (b) London, Delhi
 (c) Tokyo, Delhi (d) Tokyo, Mumbai

HINTS & EXPLANATIONS

1. (b) A 's one day's work = $\frac{1}{15}$ th work.
 B 's one day's work = $\frac{1}{10}$ th work.
 $(A + B)$'s one day's work = $\frac{1}{15} + \frac{1}{10} = \frac{1}{6}$ th work.
 Let A left after x days.
 $\therefore (A + B)$'s x days' work = $\frac{x}{6}$ th work.
 Remaining work = $1 - \frac{x}{6} = \frac{6-x}{6}$ th work.
 Now, in 5 days, work done by $B = \frac{6-x}{6}$ th work.
 \therefore In 1 day work done by $B = \frac{6-x}{30}$ th work
 and $\frac{6-x}{30} = \frac{1}{10}$
 $\therefore x = 3$ days
2. (d) Let required number of binders be ' x '
 Less books, less binders (direct)
 More days, less binders (indirect)
- | | | | |
|-------|-----|-------|---------------|
| Books | 900 | : 660 | } :: 18 : x |
| Days | 12 | : 10 | |
- $900 \times 12 \times x = 660 \times 10 \times 18$
 $x = \frac{660 \times 10 \times 18}{900 \times 12} = 11$
3. (b) The 32 minutes extra represents the extra time taken by the pipes due to the leak.
 Normal time for the pipes $\rightarrow n \times (1/14 + 1/16)$
 $= 1 \rightarrow n = 112/15 = 7$ hrs 28 minutes.
 Thus, with 32 minutes extra, the pipes would take 8 hours to fill the tank.
 Thus, $8(1/14 + 1/16) - 8 \times (1/L) = 1 \rightarrow 8/L$
 $= 8(15/112) - 1$
 $1/L = 15/112 - 1/8$
 $= 1/112.$
 Thus, $L = 112$ hours.
4. (a) Let the filling capacity of pump be x m³/min.
 Then, emptying capacity of pump = $(x + 10)$ m³/min.
 $\therefore \frac{2400}{x} - \frac{2400}{x+10} = 8$
 $\Rightarrow x^2 + 10x - 3000 = 0$
 $\Rightarrow (x - 50)(x + 60) = 0 \Rightarrow x = 50$ m³/min.
5. (c) The statements in the question can be reformulated as follows:
 If A covers 400 m, B covers 395 m.
 If B covers 400 m, C covers 396 m.
 If D covers 400 m, C covers 384 m.

Therefore, if B covers 395 m, then C will cover,

$$\frac{396}{400} \times 395 = 391.05 \text{ m}$$

Again, If C covers 391.05 m, then D will cover

$$\frac{400}{384} \times 391.05 = 407.34 \text{ m.}$$

Thus, if A and D run over 400 m, then D wins by 7.3 m.

6. (c) Let the speed of the train be x km/hr and that of the car be y km/hr.

$$\text{Then, } \frac{120}{x} + \frac{480}{y} = 8 \text{ or } \frac{1}{x} + \frac{4}{y} = \frac{1}{15} \quad \dots(1)$$

$$\text{And, } \frac{200}{x} + \frac{400}{y} = \frac{25}{3} \text{ or } \frac{1}{x} + \frac{2}{y} = \frac{1}{24} \quad \dots(2)$$

Solving (1) and (2), we get $x = 60$ and $y = 80$.

\therefore Ratio of speeds = $60 : 80 = 3 : 4$.

7. (a) If the rowing speed in still water be x kmph, and the distance be y km, then

$$\frac{y}{x-2} = 6$$

$$\Rightarrow y = 6(x-2) \quad \dots(1)$$

$$\text{and, } \frac{y}{x+2} = 4$$

$$\Rightarrow y = 4(x+2) \quad \dots(2)$$

$$\Rightarrow 6(x-2) = 4(x+2)$$

$$\Rightarrow x = 10 \text{ kmph}$$

8. (d) $a + b + c + d + e = 5 \times 92 = 460$

$$a + b + c = 3 \times 83 = 249$$

$$c + d + e = 3 \times 97 = 291$$

$$\therefore c = (a + b + c) + (c + d + e) - (a + b + c + d + e)$$

$$\text{or } c = 540 - 460 \text{ or } c = 80$$

9. (a)

	No. of family members	Average	Total
Eleven years earlier	4	28	112
Presently	if 4	39	156
	6	28	168

Since it is obvious that just after the birth of the youngest member (*i.e.*, child) was 6 family members in the family. Therefore at the time of the birth of the youngest child the elder child's age was 6 years.

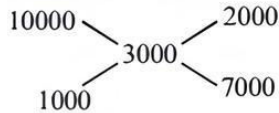
Now the sum of their ages

$$= x + (x + 6) = 12 = (168 - 156)$$

$$\Rightarrow x = 3$$

10. (b) Let the number of officers be x .
 Number of workers = $400 - x$
 $\Rightarrow 10000x + 2000(400 - x) = 3000(400)$
 $\Rightarrow 10000x + 800000 - 2000x = 12,00,000$
 $\Rightarrow 4x = 600 - 400 = 200 \Rightarrow x = 50$
 \therefore Number of officers = 50

Shortcut Method:

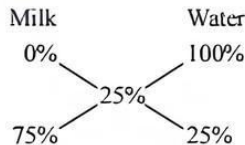


1 : 7

Ratio of officers to workers = 1 : 7

$$\text{Number of officers} = \frac{1}{8} \times 400 = 50$$

11. (d) We will apply alligation on % profit. If he sells the milk at CP, he gains 0%. But if he sells water at CP, he gains 100%.



Ratio of milk to water in the mixture should be 3 : 1

$$\therefore \% \text{ of water in mixture} = \frac{1}{3+1} \times 100 = 25\%$$

12. (c) Suppose the can initially contains $7x$ and $5x$ litres of mixtures A and B respectively.

$$\text{Quantity of } A \text{ mixture left} = \left(7x - \frac{7}{12} \times 9\right) \text{ litres}$$

$$= \left(7x - \frac{21}{4}\right) \text{ litres.}$$

$$\text{Quantity of } B \text{ in mixture left} = \left(5x - \frac{5}{12} \times 9\right) \text{ litres}$$

$$= \left(5x - \frac{15}{4}\right) \text{ litres.}$$

$$\therefore \frac{\left(7x - \frac{21}{4}\right)}{\left(5x - \frac{15}{4}\right) + 9} = \frac{7}{9} \Rightarrow \frac{28x - 21}{20x + 21} = \frac{7}{9}$$

$$\Rightarrow 252x - 189 = 140x + 147$$

$$\Rightarrow 112x = 336 \Rightarrow x = 3.$$

So, the can contained 21 litre.

13. (b) Let Ram replaces x litres of 12% sol. with 39% solution.

$$\text{Now, quantity of 12\% sol. in 27 litre} = \frac{27 \times 12}{100}$$

\therefore After replacing we have volume of 12% sol.

$$= \left(\frac{27 \times 12}{100} - \frac{12x}{100} + \frac{39x}{100}\right) = \frac{324 + 27x}{100}$$

This will be equal to 27 litre of 21% sol.

$$\therefore \frac{324 + 27x}{100} = \frac{21 \times 27}{100}$$

$$\therefore x = \frac{567 - 324}{27} = \frac{243}{27} = 9$$

14. (c) Let capacity of each cup be 100 ml
 After first operation, first container will have 200 ml of alcohol and second container will have 300 l alcohol and 500 ml water.

Ratio of water to alcohol in the second container = 5 : 3.

After second operation, the quantity of water and

alcohol left would be $\left(300 \times \frac{5}{8}\right) = 187.5$ ml and

$\left(300 \times \frac{3}{8}\right) = 112.5$ ml respectively in the first

container.

and the quantity of water and alcohol in the first container is 187.5 ml and $(200 + 112.5)$ ml = 312.5 ml hence, ratio of water and alcohol = 187.5 : 312.5 = 3 : 5 and the ratio of alcohol to water = 5 : 3.

Hence, on comparing ratio of water and alcohol in both the containers we find that $A = B$.

15. (d) The total age of the family at the birth of first child = $18 \times 3 = 54$

While the total age of the couple at marriage

$$= 25 \times 2 = 50.$$

\Rightarrow The years from marriage till the first child's birth

$$= \frac{54 - 50}{2} = 2 \text{ years.}$$

The total age of family at the birth of the second child. = $15 \times 4 = 60$ years.

\Rightarrow Second child was born = $\frac{60 - 54}{3} = 2$ years after the first.

Similarly the twins were born = $\frac{(12 \times 6) - 60}{4} = 3$ years.

After the second child and today the twins are 4 years old.

(\therefore average age of the family became 16 years from 12 years)

\therefore Age of eldest son = $4 + 3 + 2 = 9$ years.

16. (d) $(m - n)^2 = \frac{4mn}{(m + n - 1)}$

$$\Rightarrow (m - n)^2 (m + n - 1) = 4mn$$

$$\Rightarrow (m - n)^2 (m + n - 1) = (m + n)^2 - (m - n)^2$$

$$\Rightarrow (m - n)^2 (m + n) = (m + n)^2$$

$$\Rightarrow (m - n)^2 = (m + n)$$

(Since, $m + n \neq 0$)

The above equation has infinitely many solutions where m and n are positive integers.

We can put $m + n = v$ and $m - n = u$, and re-write the equation as $u^2 = v$ and then plug in different values of u and v to get different pairs of (m, n) .

17. (d) Let the roots be α and β .

$$\therefore \alpha + \beta = \frac{1}{\alpha^2} + \frac{1}{\beta^2}$$

$$\Rightarrow \frac{-b}{a} = \frac{\alpha^2 + \beta^2}{\alpha^2 \beta^2} \Rightarrow \frac{-b}{a} = \frac{(\alpha + \beta)^2 - 2\alpha\beta}{\alpha^2 \beta^2}$$

$$\Rightarrow \frac{-b}{a} = \frac{(-b/a)^2 - \frac{2c}{a}}{c^2/a^2}$$

$$\Rightarrow \frac{-b}{a} = \frac{b^2 - 2ca}{c^2} \Rightarrow b^2 a + bc^2 = 2ca^2$$

$$\Rightarrow \frac{b^2}{ac} + \frac{bc}{a^2} = 2$$

18. (d) Let a , b and c be the digits at the hundredth, tens and units places, respectively.

$$\text{Now, } a + b + c = 16, \quad \dots(1)$$

$$b = 3c \quad \dots(2)$$

$$\text{and } c = \frac{1}{4}a \quad \dots(3)$$

From (2) and (3),

$$b = \frac{3}{4}a \quad \dots(4)$$

From (1), (3) and (4), we have

$$a + \frac{3}{4}a + \frac{1}{4}a = 16$$

or $a = 8, b = 6$ and $c = 2$

Hence, the three digit number is 862.

19. (c) Let the three containers contain $3x$, $4x$ and $5x$ litres of mixtures, respectively.

$$\text{Milk in 1st mix.} = \left(3x \times \frac{4}{5}\right) \text{ litres} = \frac{12x}{5} \text{ litres.}$$

$$\text{Water in 1st mix.} = \left(3x - \frac{12x}{5}\right) \text{ litres} = \frac{3x}{5} \text{ litres.}$$

$$\text{Milk in 2nd mix.} = \left(4x \times \frac{3}{4}\right) \text{ litres} = 3x \text{ litres.}$$

$$\text{Water in 2nd mix.} = (4x - 3x) \text{ litres} = x \text{ litres.}$$

$$\text{Milk in 3rd mix.} = \left(5x \times \frac{5}{7}\right) \text{ litres} = \frac{25x}{7} \text{ litres.}$$

$$\text{Water in 3rd mix.} = \left(5x - \frac{25x}{7}\right) \text{ litres} = \frac{10x}{7} \text{ litres.}$$

Total milk in final mix.

$$= \left(\frac{12x}{5} + 3x + \frac{25x}{7}\right) \text{ litres} = \frac{314x}{35} \text{ litres.}$$

Total water in final mix.

$$= \left(\frac{3x}{5} + x + \frac{10x}{7}\right) \text{ litres} = \frac{106x}{35} \text{ litres.}$$

Required ratio of milk and water

$$= \frac{314x}{35} : \frac{106x}{35} = 157 : 53.$$

20. (c) Let the original price per egg be ₹ x . Then, increased

$$\text{price} = ₹ \left(\frac{130}{100}x\right)$$

$$\therefore \frac{7.80}{x} - \frac{7.80}{\frac{130}{100}x} = 3 \Rightarrow \frac{7.80}{x} - \frac{780}{130x} = 3$$

$$\Rightarrow 1014 - 780 = 3 \times 130x \Leftrightarrow 390x = 234$$

$$\Rightarrow x = 0.6$$

$$\text{So, present price per dozen} = ₹ \left(12 \times \frac{130}{100} \times 0.6\right)$$

$$= ₹ 9.36.$$

21. (c) I. Let the first number be x .

Then the second number = $1.25x$

$$\text{Sum} = x + 1.25x = 2.25x$$

$$\text{Difference} = 1.25x - x = 0.25x$$

$$\text{Also } 9 \times 0.25x = 2.25x.$$

Thus, [I] is true.

$$\text{II. } \frac{56}{100} \times A = \frac{24}{100} \times B$$

Multiplying by $\frac{49}{56}$ on both the sides.

$$\therefore \frac{49}{56} \times \frac{56}{100} \times A = \frac{49}{56} \times \frac{24}{100} \times B$$

$$\frac{49}{100} A = \frac{21}{100} B \Rightarrow 49\% \text{ of } A = 21\% \text{ of } B.$$

Thus, [II] is true.

$$\text{III. } \frac{7}{11}x = \frac{2}{9}y \quad \therefore 63x = 22y \Rightarrow \frac{63}{100} \times x = \frac{22}{100}y$$

Multiplying by $\frac{81}{63}$ on both sides.

$$\frac{81}{63} \times \frac{63x}{100} = \frac{22}{100} \times \frac{81}{63} \times y$$

$$\therefore \frac{81}{100} \times x = \frac{198}{700} \times y = 28 \frac{2}{7}\% \text{ of } y.$$

Thus, [III] is false.

22. (b) Let the quantity of milk purchased be x litres and quantity of water added to it be y litres. Then ratio of water to milk will be $y : x$.

Now, CP = $6.4x$ and SP = $8(x + y)$

and profit % = 37.5%

$$\Rightarrow 8(x + y) = 6.4x \times 1.375$$

$$\Rightarrow 8x + 8y = 8.8x$$

$$\Rightarrow 8y = 0.8x \text{ or } \frac{x}{y} = \frac{80}{8} = \frac{10}{1}$$

$$\Rightarrow y : x = 1 : 10$$

23. (c) Let cost price = x

$$\text{Then we have, } x \left(\frac{95}{100} \right) \left(\frac{110}{100} \right) = x \left(\frac{105}{100} \right) - 1$$

$$\text{or, } x = \frac{100 \times 100}{105 \times 100 - 95 \times 100} \times 200$$

$$\therefore \text{Cost price} = ₹ 200$$

24. (a) Let the cost of cloth per cm be ₹ x
As he uses 120 cm scale, so, he has 120 cm cloth cost incurred = $100x$. While selling he uses 80 cm scale, so

$$\text{actually he charges for } \frac{100}{80} \times 120 = 150 \text{ cm of cloth}$$

$$\text{Amount obtained after 20\% discount} \\ = 0.8x \times 150 = 120x$$

$$\therefore \text{Profit} = \frac{20x}{100x} \times 100 = 20\%$$

25. (b) Let the total profit be ₹ 100.
Then, ₹ 5 goes to charity.
Now, ₹ 95 is divided in the ratio 3 : 2.

$$\therefore \text{A's share} = \frac{95}{3+2} \times 3 = ₹ 57$$

$$\text{But A's actual share is ₹ 855.}$$

$$\therefore \text{Actual total profit} = 855 \left(\frac{100}{57} \right) = ₹ 1500$$

26. (a) B's profit = $\frac{528 - 48}{2} = ₹ 240$

$$\text{A's profit} = 528 - 240 = ₹ 288$$

$$\frac{\text{A's capital} \times 4}{\text{B's capital} \times 5} = \frac{288}{240} = \frac{6}{5}$$

$$\therefore \frac{\text{A's capital}}{\text{B's capital}} = \frac{6}{5} \times \frac{5}{4} = \frac{3}{2}$$

$$\Rightarrow \frac{\text{B's capital} + 600}{\text{B's capital}} = \frac{3}{2}$$

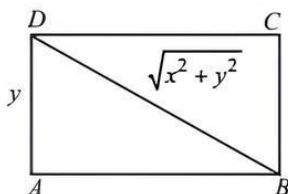
$$\Rightarrow \text{B's capital} = ₹ 1200 \text{ and A's capital} = ₹ 1800$$

27. (a) For first year, ratio of profit = 3 : 4

$$\text{X's profit of first year} = \frac{3}{7} \times 2100 = ₹ 900$$

$$\text{Now, for second year,} \\ \text{ratio of profit} = 3000 \times 12 + 900 \times 12 : 4000 \times 12 \\ = 46800 : 48000 = 39 : 40$$

28. (d)



According to question,

$$(x+y) - \sqrt{x^2 + y^2} = \frac{x}{2}$$

$$(x+y) - \frac{x}{2} = \sqrt{x^2 + y^2}$$

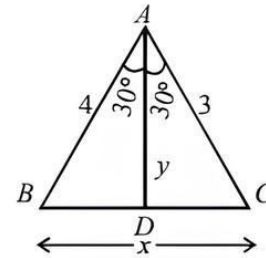
$$\left(\frac{x}{2} + y \right)^2 = x^2 + y^2$$

$$\frac{x^2}{4} + y^2 + xy = x^2 + y^2$$

$$x^2 + 4xy = 4x^2$$

$$4xy = 3x^2 \Rightarrow 4y = 3x \Rightarrow \frac{y}{x} = \frac{3}{4}$$

29. (b)



Let $BC = x$ and $AD = y$

Using the theorem of angle of bisector,

$$\frac{BD}{DC} = \frac{AB}{AC} = \frac{4}{3} \Rightarrow BD = \frac{4}{7}x \text{ and } DC = \frac{3}{7}x$$

$$\text{In } \triangle ABD, \text{ by sine rule, } \frac{\sin 30^\circ}{4/7x} = \frac{\sin B}{y} \quad \dots(1)$$

$$\text{In } \triangle ABC, \text{ by sine rule; } \frac{\sin 60^\circ}{x} = \frac{\sin B}{3}$$

$$\Rightarrow \frac{\sqrt{3}}{2x} = \frac{\sin 30^\circ y}{4/7x \times 3}$$

[Putting value of $\sin B$ from (1)]

$$\Rightarrow y = \frac{\sqrt{3}}{2x} \times \frac{4}{7}x \times 3 \times \frac{2}{1} = \frac{12\sqrt{3}}{7}$$

30. (d) $c = c_1$ (Vert. opp. \angle s). $b = c + s$ (Ext. \angle).

$$d = c_1 + r \text{ (Ext. } \angle)$$

But $b + d = 180^\circ$ (Opp. \angle s, cyclic quad.)

$$\Rightarrow c + s + c_1 + r = 180^\circ$$

$$\Rightarrow r + s + 2c = 180^\circ \Rightarrow r + s = 180^\circ - 2c.$$

31. (d) $\pi r_1^2 + \pi r_2^2 = 180\pi \quad \dots(1)$

$$\Rightarrow r_1^2 + r_2^2 = 180 \text{ and distance between centers i.e.}$$

$$= r_1 + r_2 = 6 \Rightarrow r_2 = r_1 - 6$$

$$\text{From the eq. (1), } r_1^2 + (r_1 - 6)^2 = 180$$

$$\Rightarrow r_1^2 + (r_1^2 - 12r_1 + 36) = 180$$

$$\Rightarrow 2r_1^2 - 12r_1 + 36 = 180$$

$$\Rightarrow 2r_1^2 - 12r_1 - 144 = 0$$

$$\Rightarrow (r_1 - 12)(r_1 + 6) = 0.$$

Hence, $r_1 = 12$ cm and $d_1 = 24$ cm.

32. (d) Let the sum be ₹ x , rate be $R\%$ p.a. and time be T years.

$$\text{Then, } \left[\frac{x \times (R+2) \times T}{100} \right] - \left(\frac{x \times R \times T}{100} \right) = 108$$

$$\Rightarrow 2xT = 10800 \quad \dots(i)$$

$$\left[\frac{x \times R \times (T+2)}{100} \right] - \left(\frac{x \times R \times T}{100} \right) = 180$$

$$\Rightarrow 2xR = 18000 \quad \dots(ii)$$

Clearly, from (i) and (ii), we cannot find the value of x .

So, the data is inadequate.

33. (c) Cash down payment = ₹ 1500

Let ₹ x becomes ₹ 1020 at the end of first year.

$$\text{Then, } 1020 = x \left(1 + \frac{10}{100} \right)$$

$$\text{or } x = \frac{1020 \times 100}{110} = ₹ 927.27$$

$$\text{Similarly, } 1003 = y \left(1 + \frac{10}{100} \right)^2$$

$$\text{or } y = \frac{1003 \times 10 \times 10}{11 \times 11} = ₹ 828.92$$

$$\text{and } z = \frac{990 \times 10 \times 10 \times 10}{11 \times 11 \times 11} = ₹ 743.80$$

$$\text{Hence, CP} = 1500 + 927.27 + 828.92 + 743.80 = 3999.99 \text{ or } ₹ 4000.$$

34. (d) Let the parts be x, y and $[2600 - (x+y)]$. Then,

$$\frac{x \times 4 \times 1}{100} = \frac{y \times 6 \times 1}{100} = \frac{[2600 - (x+y)] \times 8 \times 1}{100}$$

$$\therefore \frac{y}{x} = \frac{4}{6} = \frac{2}{3} \text{ or } y = \frac{2}{3}x.$$

$$\text{So, } \frac{x \times 4 \times 1}{100} = \frac{\left(2600 - \frac{5}{3}x \right) \times 8}{100}$$

$$\Rightarrow 4x = \frac{(7800 - 5x) \times 8}{3} \Rightarrow 52x = (7800 \times 8)$$

$$\Rightarrow x = \left(\frac{7800 \times 8}{52} \right) = 1200.$$

\therefore Money invested at $4\% = ₹ 1200$.

35. (b) Let total no. of team participated in a championship be n . Since, every team played one match with each other team.

$$\therefore {}^n C_2 = 153 \Rightarrow \frac{n!}{2!(n-2)!} = 153$$

$$\Rightarrow \frac{n(n-1)(n-2)!}{2!(n-2)!} = 153 \Rightarrow \frac{n(n-1)}{2} = 153$$

$$\Rightarrow n(n-1) = 306$$

$$\Rightarrow n^2 - n - 306 = 0$$

$$\Rightarrow n^2 - 18n + 17n - 306 = 0$$

$$\Rightarrow n(n-18) + 17(n-18) = 0$$

$$\Rightarrow n = 18, -17$$

n cannot be negative

$$\therefore n \neq -17$$

$$\Rightarrow n = 18$$

36. (d) ${}^{18}C_4 + {}^{18}C_5 + {}^{18}C_6 + \dots + {}^{18}C_{17} + {}^{18}C_{18}$
 $= [{}^{18}C_0 + {}^{18}C_4 + \dots + {}^{18}C_{18}] - [{}^{18}C_0 + {}^{18}C_1 + {}^{18}C_2 + {}^{18}C_3]$
 $= 2^{18} - [1 + 18 + 153 + 816]$
 $= 261156$

37. (c)

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Last place can be filled by 0, 2, 4

$$\text{So total sum} = 5 \times 6 \times 6 (0+2+4) + 5 \times 6 \times 3 \times 10 (0+1+2+3+4+5) + 6 \times 6 \times 3 \times 1000 (0+1+2+3+4+5) = 180 \times 6 + 900 \times 15 + 9000 \times 15 + 10800 \times 15 = 1080 + 13500 + 135000 + 1620000 = 1769580$$

38. (d) Now, $P(A' \cap B') = P(A' \cup B')$
 $= 1 - P(A \cup B) = 1 - 0.8 = 0.2$
 and $P(A' \cup B') = 1 - P(A \cap B) = 1 - 0.3 = 0.7$
 But $P(A' \cup B') = P(A') + P(B') - P(A' \cap B')$
 $\Rightarrow 0.7 = P(A') + P(B') - 0.2$
 $\Rightarrow P(A') + P(B') = 0.9.$

39. (c) Let A, B, C be the respective events of solving the problem and $\bar{A}, \bar{B}, \bar{C}$ be the respective events of not solving the problem. Then A, B, C are independent events

$\therefore \bar{A}, \bar{B}, \bar{C}$ are independent events

$$P(A) = \frac{1}{2}, P(B) = \frac{1}{3} \text{ and } P(C) = \frac{1}{4}$$

$$P(\bar{A}) = \frac{1}{2}, P(\bar{B}) = \frac{2}{3} \text{ and } P(\bar{C}) = \frac{3}{4}$$

$$\therefore P(\text{none solves the problem}) = P(\text{not } A) \text{ and } (\text{not } B) \text{ and } (\text{not } C)$$

$$= P(\bar{A} \cap \bar{B} \cap \bar{C})$$

$$= P(\bar{A}) P(\bar{B}) P(\bar{C}) \quad (\because \bar{A}, \bar{B} \text{ and } \bar{C} \text{ are independent})$$

$$= \frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} = \frac{1}{4}$$

Hence, $P(\text{the problem will be solved})$

$$= 1 - P(\text{none solves the problem})$$

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

40. (b) Total no. of pages = 1000
 No. of one digit nos. summing 9 = 1
 No. of two digit nos. summing 9
 (1 & 8, 2 & 7, 3 & 6, 4 & 5, 90) = $2! \times 4 + 1 = 9$
 No. of three digit nos. summing 9 = nos. in which last digit is 0 (180, 270, 360, 450, 900)
 + nos. with all 3 different digits (126, 135, 234)
 + nos. with 2 same digit (144, 171, 252)
 + nos. with all 3 digits (333)

$$= 17 + 3 \times 3! + \frac{3!}{2!} \times 3 + 1 = 45$$

[∵ each number out of Nos. 180, 270, 360 and 450 can be arranged in 4 ways.

∴ no. of ways = $4(4) = 16$

Total favourable cases = $1 + 9 + 45 = 55$

Therefore, required probability

$$= \frac{\text{Total favourable cases}}{\text{Total outcomes}} = \frac{55}{1000}$$

41. (a) Increase in operating profit

$$= \frac{160 - 130}{130} \times 100 = \frac{300}{13} = 23\%$$

42. (b) Interest burden increase

$$= 0.4 \times 160 - 0.3 \times 130 = 64 - 39 = 25 \text{ lakh}$$

43. (d) Borrowed funds in 2011-12 = $\frac{0.3 \times 130}{0.2} = 195$ lakhs

$$\text{Borrowed funds in 2012-13} = \frac{0.4 \times 160}{0.2} = 320 \text{ lakhs}$$

$$\text{Total} = 320 + 195 = 515.$$

44. (d) Retained Profit in 2011-12 = $0.25 \times 130 = 32.5$

$$\text{Retained Profit in 2012-13} = 2 \times 160 = 32$$

$$\text{Reduction} = \frac{0.5}{32.5} \times 100 = \frac{100}{65} = 1.5\%$$

45. (c) Dividend earning in 2012-13 = $0.08 \times 160 = 12.8$

Sol. (46-50):

As the formula is given in the question, we should follow it to find the solution.

46. (d) The percentage profit of company 'A' in 2010 = 50%
 Income, = 142500 (given)

$$\text{Expenditure} = 142500 \left(\frac{100}{100 + 50} \right) = 95000$$

47. (d) $E_{B11} = \frac{90}{100} E_{B10}$ (given)

$$I_{B11} = \frac{90}{100} \times \frac{140}{100} \times \frac{100}{135} (I_{B10})$$

$$I_{B11} = \frac{280}{300} I_{B10}$$

$$= \frac{280}{3} \% \text{ of } I_{B10} = 93\frac{1}{3} \% \text{ of } I_{B10}$$

48. (c) $E_{A09} = ₹ 70$ lakh

$$\Rightarrow I_{A09} = 70 \left(\frac{125}{100} \right) = ₹ 87.5 \text{ lakh}$$

$$I_{A09} = E_{A10} = ₹ 87.5 \text{ lakh}$$

$$\therefore I_{A10} = 87.5 \left(\frac{150}{100} \right) = ₹ 131.25 \text{ lakh}$$

$$\therefore \text{reqd value} = I_{A09} + I_{A10} = 87.5 + 131.25 = ₹ 218.75 \text{ lakh}$$

49. (a) We have to find $I_{B08} : I_{B09}$

$$\text{Given } E_{B08} = 5x \text{ and } F_{B09} = 7x$$

$$I_{B08} = 5x \left(\frac{140}{100} \right) \text{ and } I_{B09} = 7x \left(\frac{130}{100} \right)$$

$$\therefore I_{B08} : I_{B09} = \frac{5x}{7x} \left(\frac{140}{130} \right) = 10 : 13$$

50. (d)

51. (a) Total no. of students studying in all schools in 2010

$$= (1025 + 230 + 190 + 950 + 350 + 225 + 1100 + 320 + 300 + 1500 + 340 + 300 + 1450 + 250 + 280) - (120 + 110 + 150 + 115 + 130 + 150 + 150 + 160 + 125 + 130)$$

$$= 8810 - 1340 = 7470$$

$$\therefore \text{Average} = \frac{7470}{5} = 1494$$

52. (c) Number of students studying in school B in 2012

$$= 950 + (350 - 150) + (225 - 115) + (185 - 110) + (200 - 90)$$

$$= 950 + 200 + 110 + 75 + 110 = 1445$$

53. (d) Number of students leaving school 'C'

$$\text{from 2008 to 2013} = 130 + 150 + 125 + 140 + 180 = 725$$

$$\text{Number of students admitted during the period} = 1100 + 320 + 300 + 260 + 240 + 310 = 2530$$

$$\therefore \text{Required percentage} = \frac{725}{2530} \times 100 \approx 29\%$$

54. (d) Required difference = $(340 + 300 + 295 + 320 + 360)$

$$- (350 + 225 + 185 + 200 + 240) = 1615 - 1200 = 415$$

55. (b) Increase in no. of students in school A

$$= (230 - 120) + (190 - 110) + (245 - 100) + (280 - 150) + (250 - 130) = 585$$

$$\therefore \% \text{ increase from 2008 to 2013}$$

$$= \frac{585}{1025} \times 100 = 57.07\%$$

Similarly, we can calculate for other schools.

Percentage increases in all schools are given in the following

A	B	C	D	E
57.07%	64.73%	64.09%	61.33%	62.41%

56. (c) Area of customer transaction room = $23\text{m} \times 29\text{m} = 667\text{ sq.m}$
 Area of branch manager room = $13\text{m} \times 17\text{m} = 221\text{ sq. m}$
 Area of Pantry room = $14\text{m} \times 13\text{m} = 182\text{ sq. m}$
 Area of Server room = $21\text{m} \times 13\text{m} = 273\text{ sq. m}$
 Area of locker room = $29\text{m} \times 21\text{m} = 609\text{ sq. m}$
 Total cost of wooden flooring = ₹ $[(170 \times (667 + 221))$
 = ₹ (888×170)

Total cost of marble flooring

$$= ₹ [(190 \times (182 + 273 + 609))] = ₹ (190 \times 1064)$$

$$\text{Required Ratio} = 888 \times 170 : 1064 \times 190 = 1887 : 2527$$

57. (c) Area of 4 walls and ceiling of branch managers room
 = $2(lh + bh) + lb = 2[17 \times 12 + 13 \times 12] + 13 \times 17$
 = 941 sq. m

$$\text{Total cost of renovating} = ₹ 190 \times 941 = ₹ 178790$$

58. (a) Total area of bank is 2000 sq. m
 Total area of bank to be renovated = 1952 sq. m
 Remaining Area = $2000 - 1952 = 48\text{ sq. m}$
 Total cost Remaining Area to be carpeted at the rate of ₹ $110/\text{sq. meter} = ₹(48 \times 110) = ₹ 5,280$

59. (b) percentage area of bank not to be renovated

$$\Rightarrow \frac{\text{Area bank not be renovated}}{\text{Total area of bank}} \Rightarrow \frac{48}{2000} \times 100 = 2.4\%$$

60. (a) Total cost of hall of customer transaction
 = ₹ $(170 \times 667) = ₹ 113,390$

$$\text{Total cost of Locker area} = ₹(190 \times 609) = ₹ 115710$$

$$\text{Total cost of customer transaction hall + locker area} = ₹(113390 + 115710) = ₹ 229100$$

61. (b) Root vegetables produce per hectare

$$= \frac{18560}{800} = 23.20$$

62. (c) Tomato, cabbage, root vegetables

63. (a) Req'd. ratio = $72 : 15 = 24 : 5$

64. (d) Total area = 19800 hectares

10% of the total area = $1980\text{ hectares} \dots(i)$

Comparing equation (i) and table, we see that in four types of vegetables, area used for production is more than 10% of the total area.

65. (b) Req'd. number = $\frac{42670}{1700} - \frac{13790}{700}$

$$= 25.1 - 19.7 = 5.4$$

66. (a) Required number of all products
 = $(10 + 5 + 15 + 25 + 30 + 20)\text{ thousand}$
 = 10500

67. (c) Average number of produced pen-drives

$$= \left(\frac{15 + 5 + 15 + 30 + 17.5}{5} \right) \text{ thousand} = 17000$$

68. (a) Required difference

$$= (30 + 25 - 15)\text{ thousand} = 40000$$

69. (d) Required ratio = $15 : 30 : 15 = 1 : 2 : 1$

70. (a) Required ratio = $22.5 : 25 = 225 : 250 = 9 : 10$

71. (a) **From statement I,**

Ratio of the costs of first, second and third necklace is $6 : 5 : 7$. Hence, the price of second necklace can be calculated.

72. (c) **From statement I,**
 $32\% + 1 = 36\% - 1 = \text{Minimum pass marks}$
 $\therefore \text{Minimum pass marks} = 17$

From statement II,

Minimum pass marks = $30\% + 2$ and

$$(40 - 30)\% = 5 \quad \therefore 30\% = 15$$

$$\therefore \text{Minimum pass marks} = 15 + 2 = 17$$

Hence, either *A* or *B* alone is sufficient.

73. (c) In the question part we have been given: Age of Aparna = $2 \times$ age of Savita, i.e the present ratio of Aparna and Savita = $2 : 1$

From I : Aparna Savita

$$\begin{array}{ccc} 2 & : & 1 \\ +5 & 9 & : & 5 \end{array}$$

Difference of Aparna's and Savita's ages

$$= \frac{5 \times (9 - 5)}{5 \times 2 - 9 \times 1} \times (2 - 1)$$

$$= \frac{5 \times 4 \times 1}{1}$$

$$= 20\text{ years}$$

From II : Aparna Savita

$$\begin{array}{ccc} 2 & : & 1 \\ -10 & 3 & : & 1 \end{array}$$

Difference of Aparna's and Savita's ages

$$= \frac{10 \times (3 - 1)}{3 \times 1 - 2 \times 1} \times (2 - 1)$$

$$= \frac{10 \times 2 \times 1}{3 - 2} = 20\text{ years}$$

74. (b) Only II alone is sufficient.

75. (a) Only I alone is sufficient.

76. (b) The total number of sweets = $20 + 25 + 27 = 72$

$$\text{Equal number of sweets in three boxes} = \frac{72}{3} = 24$$

To make the number of sweets equal we will need to remove one from the second box, and three from the third (and put them in the first). This means we must move 4 sweets.

77. (a) $A \text{---} B \quad C \quad D \text{---} E$

$$BC = AC - AB \quad \dots(1)$$

$$CD = CE - DE \quad \dots(2)$$

Subtracting (2) from (1)

$$BC - CD = DE - AB \quad (AC = CE)$$

$$BC = CD + (DE - AB)$$

Since $DE > AB$

BC must be greater than CD .

78. (c) Since p has $8 \times 9 = 72$, which is divisible by 6.

Since p has $11 \times 9 = 99$, which is divisible by 33. There will be no remainder in either case.

79. (b) Probability of drawing a red ball, $P(R) = \frac{1}{3}$

$$\text{Probability of drawing a white ball, } P(W) = \frac{1}{5}$$

Probability of drawing a blue ball, P(B)

$$= 1 - \left(\frac{1}{3} + \frac{1}{5} \right) = \frac{7}{15}$$

$$P(B) > P(W) \quad \left\{ \frac{7}{15} > \frac{1}{5} \right\}$$

80. (d) Since $n > 0$ it could be fraction, 1 or a larger number. If $n = 1$, then both columns are equal (1 raised to any power is still 1). If $n > 1$ the right column will be greater. These two different possibilities mean relationship cannot be determined.
81. (a) Repudiate means to reject /deny. Its opposite to 'sanction' which means to grant.
82. (c) The word 'dispense' means 'to distribute; deal out; forgo' which shows that it is similar to all the 3 options a, b and d but is dissimilar to option (c) therefore it is the right answer. The word 'disregard' means 'to treat without due regard or respect'.
83. (c) 'Prosaic' means dull, unimaginative. 'Interesting' is its correct antonym.
84. (c) Tulip, rose and daisy are all types of flowers. A bud is not.
85. (b) The guitar, violin, and cello are stringed instruments, the flute is wind instrument.
86. (b) A branch, leaf and root are all parts of a tree. The dirt underneath is not a part of the tree.
87. (d) His listeners enjoyed his trenchant wit (sharp brain/mind) but his victims often winced (pull a face/flinch) at its satire.
88. (c) Virulence is a word with negative connotation meaning maligning/extremely harmful/showing bitter feelings, so 'impudent' meaning 'disrespectful' goes well with it. Also, the word 'difficult' in this option goes well with 'circumvent' implying difficulty in circumventing (avoiding).
89. (b) Stuttering to the point of suffocation voices negative connotation, given only by brusque meaning abrupt, curt. Also, horribly goes fittingly with the sentence.
90. (b) 91. (c) 92. (b) 93. (a) 94. (d) 95. (b)
96. (a)
97. (b) (b) is the only option as the passage clearly means to say that one should experience the consequences before choosing an alternative as then they become more meaningful. Also one can discover aspects one may not have ever thought of. Other options are more specifically about the van, whereas the point of the passage is to make a general statement about trying alternatives with van as an example.
98. (b) It is the correct choice. It best summarises the points made in the passage and the advice given. The other options state one or the other thing incorrectly. In (a) the second statement is clearly wrong. In (c) & (d) statement 1 covers only one aspect of the passage. In second statement, 'learn to not make enemies' is not talked about in the passage.
99. (c) Last sentence talks about cause and result. (a) is ruled out at Microsoft's beginning in India is just an example to help correlate the start of economic reforms. (b) talks about one of the causes. (d) doesn't talk about middle class.
100. (d) The given passage has described what inertia means in the physical and the mental terms. In physical terms, inertia would mean that you just aren't able to move or act in response to a certain situation; whereas, in mental terms, having inertia would mean that your mind becomes sluggish and you just don't feel anything intensely no matter what you see in front of your eyes so you lose these capacities to act/move or feel meaningfully according to the situation. Option (d) has captured the meaning and essence of the passage nicely. Option (a) is wrong as it says that your body also becomes sluggish and cannot respond to tragedies. Option (b) is wrong because it says that mentally, it just disables you from getting angry, but the passage has generalized it by saying that you aren't able to feel anything intensely. Option (c) hasn't captured the essence of the passage fully as it didn't mention that you are not able to act or feel 'meaningfully'.
101. (c) paragraph 1 says (in line 13-14) that it is a myth... hence answer is (c)
102. (a) paragraph 2, the 4th and 5th line explains this point.
103. (b)
104. (a) the passage does not talk of point B, hence A and C are correct (a)
105. (d) According to the passage Derrida is a champion of the written word making option 4 correct.
106. (c) Saussure was antithetical to Derrida's school of thought and felt that language was independent of writing.
107. (c) The main point of discussion in the passage is that language existed to translate speech into words.
108. (b) The author is methodical in his/ her approach as s/he analyses the various points of view available on the subject.
109. (c) Option a is not correct because there is nothing in the passage to suggest that probability depends on the size of the sample. Option b is incorrect because again the author does not refer to inadequate computers as being the reason for not arriving at the correct probability. Option d is not the correct option because there is no connection between the degree of belief and probability in the passage. Option c is the correct option because the following lines in the passage support this view, " When evidence is essentially sharp, it warrants a sharp or exact attitude; when evidence is essentially fuzzy-as it is most of the time-it warrants at best a fuzzy attitude. "
110. (b) Option a is incorrect because this statement is supported in the passage as the author believes that when one's evidence for a proposition is sparse and unspecific the answer is not clear as to the probability

of that event happening. Option c is not correct because this statement is supported in the passage by the example in the passage of contents of a bag and difficulty at arriving at the probability because the contents of the bag are not known thereby reinforcing the logic that contents of a sample increases our belief in the probability of any happening. Option d is not the correct option because the following lines in the passage, the situation doesn't have any obvious symmetries, so principles of indifference seem to be of no help. Should your probability be 54%? 91%? 18%? support the logic of the given statement. Option b is the correct option because according to the author the following lines in the passage, "Give her all the computers, representational tools, brain upgrades, etc. that you like. Still it seems as though the agent would go wrong to have any very precise degree of belief in the relevant claim" do not support the statement that reliance on machines increases our belief in the probability of any happening.

111. (d) Option a is incorrect because nowhere in the passage has the author linked real life examples with ways to arrive at the correct probability. Option b is not the correct option because there is only a passing reference to Keynes theory and the author does not seem to focus the entire passage on it. Option c is not correct because there is nothing in the passage to suggest that the author's prime concern is to show the importance of computers in arriving at the correct probability. Option d is the correct option because throughout the passage the author tries to convey through examples and otherwise that nature of evidence is the most crucial basis on which the correct result of probability depends.

112. (a) Option b is not correct because according to the passage there is no symmetry in the available evidence as is evident from the following lines in the passage, "The situation doesn't have any obvious symmetry, so principles of indifference seem to be of no help". Hence the given statement is contrary to what is stated in the passage. Option c is incorrect because according to the passage there is no scientific data available to show patterns of probability as is evidenced by the following lines, "nor have you encountered any particularly relevant statistics about this." Hence this cannot be reason enough to justify that range is a better measure of probability. Option d is not correct because there is nothing in the passage to suggest that advanced computers and techniques can help in calculating range better than specific numbers. The following lines support this view, "give her all the computers, representational tools, brain upgrades, etc. that you like. Still it seems as though the agent would go wrong to have any very precise degree of belief in the relevant claim." Option a is the correct option because the author feels that because of numerous factors the degree of belief of the next happening can

never be precise, hence a range of numbers is a better technique as supported by the following argument, "an appropriate response to this evidence would be a degree of confidence represented not by a single number, but rather by a range of numbers."

113. (a) Victuals means food and Dandyism is associated with fashion, thus, option 1 is correct.

114. (c) The author feels that it is not a novelty, hence is quite disturbed by it being treated as one.

115. (d) The best word would be option 4, as the others are not in line with the chain of thought.

116. (b) The author is quite contemptuous of the entire excitement hence option 2 is correct.

117. (d) Option a is not correct because there is no connection between the definition of terrorists and their functioning randomly. Option b is incorrect because there is no reference to banning of terrorists in the passage. Option c is not the correct option because all countries not supporting action against terrorism results in further difficulty to find a definition of terrorism. Option d is the correct option because the inability to counter terrorism essentially arises from the lack of a clear definition of terrorism as is substantiated by the following lines in the passage, "Both political and academic efforts to get to grips with terrorism have repeatedly been hung up on the issue of definition,"

118. (d) Option a is incorrect because this is not a solution advocated by the author anywhere in the passage. Option b is not the correct option because again this solution is not given anywhere in the passage. Option c is incorrect because according to the author there is a lot of overlapping in actions of terrorists and the military. Option d is the correct option because the following line in the passage supports this view, "it would make more sense to construct a typology of the kinds of actions that are generally seen as 'terrorist'.

119. (b) Option a is incorrect because this is not the central idea of the passage. There are only references to types of terrorist activities. Option c is not correct because again there is only a reference to terrorism and military action. Option d is incorrect because it is only the view of the state that only it can use force and does not form the central idea. Option b is the correct option because the entire passage revolves around the inability of governments to form a consensus on definition of terrorism and thereby not being able to support each other to counter terrorism.

120. (c) Option a is not correct because according to the passage, "terrorist" is a description that has almost never been voluntarily adopted by any individual or group. It is applied to them by others." This is clearly contradictory to the given statement. Option b is incorrect because the following line in the passage negates the given statement, "So terrorism appears to be a state of mind rather than an activity". Option d is not the correct option because according to the

passage the definitions of terrorism and war are similar as shown by the following line in the passage, "For the core of nearly all definitions of terrorism - the use of violence for political ends - is too similar to the definition of war." Option c is the correct option because the following line in the passage supports the given statement, "The very first revolutionary terrorists in the modern age believed themselves justified in opposing with violence a repressive regime in which no freedom of political expression or organization was permitted."

121. (a) After dropping every third letter, we get
 ABDEGHJKMNPQRSTVWYZ
 $(11-7) = 4$ th from the right

122. (c)

	M	I	R	A	C	L	E
	A	C	E	I	L	M	R
+1↓	-1↓	+1↓	+1↓	-1↓	-1↓	-1↓	-1↓
	B	B	F	J	K	L	Q

5th from the right

123. (c)

MLKJIHGFEDCBAZYXWVUTSRQPON

12th letter from the left → B
 Seventh to the right of B → U

Sol. (124-126):

Member	Country	Sport
K	China	Archery
T	USA	Football
F	France	Volleyball
L	Australia	Athletics
J	Russia	Tennis
R	Korea	Rifle Shooting
H	Japan	Boxing

124. (d) 125. (d) 126. (b)

Sol. (127-129):

Date	Day	Play
25	Monday	A
26	Tuesday	Z
27	Wednesday	B
28	Thursday	No play
29	Friday	M
30	Saturday	Q
31	Sunday	X

127. (a) 128. (a) 129. (b)

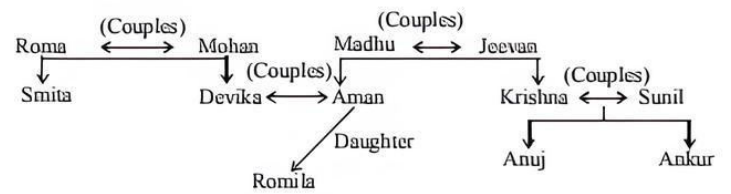
Sol. (130-132):

Member	City	Mother tongue
H	Chennai	Marathi
I	Hyderabad	Telugu
J	Bangalore	Kannada
K	Ahmedabad	Punjabi
L	Delhi	Bangla
M	Kolkata	Tamil
N	Mumbai	Hindi

133. (b) Each letter moves +2 steps.

134. (c) 1st number moves +5, +7, +9, +11, +13 steps respectively.
 3rd number moves +2 steps each time.

Sol. (135-137):



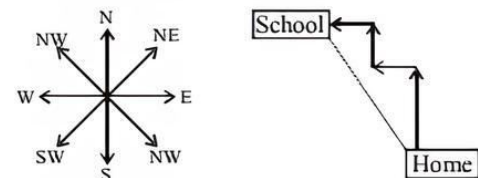
There are in all four married couples.

135. (a) Since, Devika is wife of Aman and Krishna is sister of Aman, therefore, Krishna is the sister-in-law of Devika.

136. (d) Since, Anuj is son of Krishna and Romila is daughter of Aman and Aman is brother of Krishna, therefore Anuj and Romila are cousins.

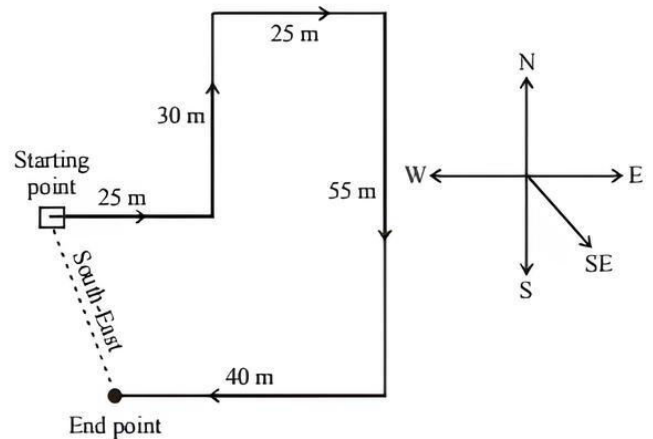
137. (c) Since, Madhu is mother of Sunil's Krishna who is wife of Sunil. Therefore, Madhu is Sunil's mother-in-law.

138. (b)

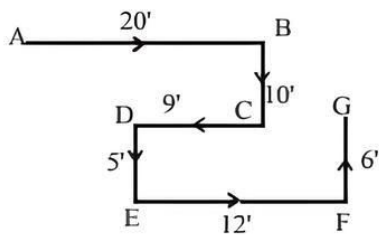


It is clear from the diagram that school is in North-west direction with respect to home.

139. (d)



140. (c) The movements of rat are as shown in figure. Clearly, it is finally walking in the direction FG i.e. North.



141. (b) First is an instrument to measure the second.

142. (b) Let total number of members be 100,
Then, number of members owning 2 cars = 20.
Number of members owning 3 cars = 40% of 80 = 32.
Number of members owning only 1 car = 100 - (20 + 32) = 48.
Thus, 48% of the total members own one car each.

143. (b) Let Tanya's share = ₹ x . Then, Veena's share = ₹ $\left(\frac{x}{2}\right)$.

$$\text{Total bill} = ₹ \left(x + \frac{x}{2} + \frac{x}{3} \right) = ₹ \left(\frac{11x}{6} \right)$$

$$\text{Amita's share} = ₹ \left(\frac{2}{3} \times \frac{x}{2} \right) = ₹ \left(\frac{x}{3} \right)$$

$$\therefore \text{Required fraction} = \left(\frac{x}{2} \times \frac{6}{11x} \right) = \frac{3}{11}$$

144. (d) The required region is the one which is common to the circle and the triangle only i.e., D

145. (d) The required region is the one which is common to the triangle and the rectangle but lies outside the circle i.e., Z

146. (c) C lies inside the triangle only. So, C represents surgical Specialists.

147. (c) B lies inside the rectangle only. So, B represents Medical Specialists who are neither Professors nor surgical Specialists.

148. (c) Using proper notations, we have:

(1) given statement is $3 \div 2 + 4 < 9 \div 3 - 1$ or $\frac{11}{2} < 2$, which is not true.

(2) given statement is $3 + 2 + 4 < 18 \div 3 - 2$ or $9 < 4$, which is not true.

(3) given statement is $3 + 2 - 4 > 8 \div 4 - 2$ or $1 > 0$, which is true.

(4) given statement is $3 \div 2 - 4 > 9 \div 3 - 3$ or $-\frac{5}{2} > 0$, which is not true. So, the statement (c) is true.

149. (a) The temperature decreases with the altitude and Simla is situated in lesser Himalaya.

150. (d) Cotton is grown in Black soils.

151. (a) Cutting down trees causes increased run-off (water flowing over the surface of the earth). Rain water reaches rivers faster (due to reduction of interception). Soil particles are transported down-hill by water flow which leads to the degradation of soil.

152. (c) 'A' is true but 'R' is false. The decrease in weight is due to the upward thrust (or buoyant force) which is equal to the rate of the liquid displaced by the body.

153. (b) The statement stresses the need to adopt a new method of examination. So, I does not follow. However, II directly follows from the given statement.

154. (b) Clearly, the new scheme intends to develop interest in reading by incorporating the habit in their routine. So, only II follows while I does not.

155. (d) The statement mentions the problem of increased migration of children to cities. But the ways to deal with the problem cannot be deduced from it. So, neither I nor II follows.

156. (d) Both conclusion I and II does not follow the given statement

157. (b) The transportation gets effect due to the flood created by incessant rains in the most rural parts of State. Therefore, on account of this, it is possible to increase the vegetable prices in the local market.

158. (a) Since police authority has recently increased vigil during the evening hours in the locality therefore, the petty crimes have reduced considerably.

159. (b) Since the government has recently increased the duty on mid-sized cars, therefore, the car manufacturing companies have recently increased the prices of mid-sized cars.

160. (c) Both the statements I and II are effect of some common cause.

161. (c) Article 05 to 11 of the Indian constitution deals with citizenship in India. The legislation related to this matter is the Citizenship Act 1955, which has been amended by the Citizenship (Amendment) Act 1986, the Citizenship (Amendment) Act 1992, the Citizenship (Amendment) Act 2003, and the Citizenship (Amendment) Act, 2005. Article 9 of Indian Constitution says that a person who voluntarily acquires citizenship of any other country is no longer an Indian citizen. Also, according to The Passports Act, a person has to surrender his Indian passport, it is a punishable offense under the act if he fails to surrender the passport.

162. (b) After India gained independence, a formal model of planning was adopted, and the Planning Commission, was established on 15 March 1950, with prime minister Jawaharlal Nehru as the chairman.

164. (a) National Institute of Design Bill has been passed by the parliament which would recognize the institute as an institution of national importance.

165. (b) Vishal Sikka has replaced N.R Narayana Murthy as the CEO of Infosys.

167. (a) Sumitra Mahajan has been elected as the speaker of the new Lok Sabha.

168. (c) Article 360 of the Indian constitution provides for provision as the financial emergency. If the President is satisfied that a situation has arisen whereby the financial stability or credit of India or of any part of the territory thereof is threatened, he may by a Proclamation make a declaration to that effect.

169. (c) Tertiary sector of the Indian Economy contributes largest to the GNP. During last decade tertiary sector has shown remarkable expansion. The economy is divided into three sectors on the basis of activities-Primary, Secondary and tertiary. Primary sector is involved into agriculture, Secondary sector is involved into manufacturing, mining, construction while tertiary sector is involved into trade, transport, communication, banking & other services. In the last decade, India has expanded maximum in providing services like IT, Telecommunication, Healthcare, Tourism which is contributing around 60% to GDP.
170. (b) TRAI notified that according to The Telecom Consumers Complaint Redressal (Third Amendment) Regulations 2014, the minimum broadband speed has been raised to 512 kbps from 256 kbps
171. (b) Arun Prabha, which would be a 24x7 channel, will act as a platform for cultural and linguistic identity of the North-East
172. (d) 173. (a) 174. (c)
174. (c) Ox-bow lake is a feature formed by River erosion in mature stage. An ox-bow is a crescent-shaped lake lying alongside a winding river. The ox-bow lake is created over time as erosion and deposits of soil change the river's course.
175. (b) The International Olympic Committee (IOC) is a Swiss non-profit, non-governmental organisation based in Lausanne, Switzerland, created by Pierre, Baron de Coubertin, on 23 June 1894 with Demetrios Vikelas as its first president.
176. (b) TCS has become the first Indian company to achieve market capitalization of ₹ 5 lakh crore followed by ONGC at 3.5 lakh crore.
177. (d) Uruguay striker Luis Suarez has been suspended from all football-related activity for four months for biting Italian defender Giorgio Chillan.
178. (c) Tamil Nadu has emerged top among states having more house-hold enterprises. The state has 4&.36% of the establishments within households out of the total establishments in the state. The national average is 38.39%.
179. (a) 180. (b) 181. (c)
182. (c) The union government in its budget proposed to hike the FDI cap in defence and insurance to 49% from 26%.
183. (a) N. Srinivasan has been appointed as the first Chairman of ICC.
184. (c) 185. (a) 186. (d)
187. (b) India has signed audio-visual cooperation treaty with Canada with an aim to create jobs in both the countries and to boost tourism.
188. (c) The Saraswati Samman is an annual award for outstanding prose or poetry literary works in any Indian language. It was instituted in 1991 by the K. K. Birla Foundation. The award contains Rs 10 lakh, a citation and a plaque. Candidates are selected from literary works published in the previous ten years by a panel that includes scholars and former award winners.
189. (b)
190. (d) NIMZ has not been proposed to be set up in Vijayawada.
191. (c) IndusInd Bank launched a customer-centric service 'video Branch'. This enables a customer to do a video conference with the bank staff.
192. (b) Oracle is buying cloud firm Micros Systems for \$5.3 Billion.
193. (c) The CCEA has recently announced inclusion of Onion and Potato under the Essential Commodities to empower the State governments to carry out dehoarding operations.
194. (a) Chung Hung Won was retained as Prime Minister of South Korea on 25 June 2014. The President of South Korea, Park Geun-Hye announced the decision to retain the Chung Hung Won who had resigned over ferry disaster in April 2014. Chung Hong-Won resigned as Prime Minister on 27 April 2014 taking the responsibility of government's inability and untimely response to the ferry disaster. President Park accepted the resignation and asked him to remain in the job until new Prime Minister was found.
195. (c) 196. (c) 197. (b) 198. (c) 199. (d)
200. (c)