

RFO Preliminary Exam : APTITUDE.

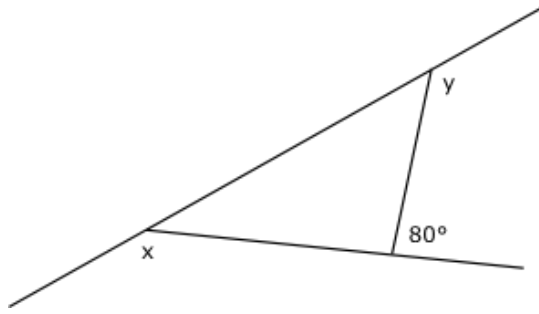
Intimation: Candidates may please note that the following is the set of questions, as in the order of one of the versions of the Question paper and shall not tally with the order of questions in the other versions of Question papers. Hence, you may kindly look at questions, irrespective of serial number of the questions, and find only the correct answer against that question. We are publishing only the most correct and most complete answer to each of these questions.

KEY

1. It is well known that 24 karat gold is the purest form of gold. 18 karat gold is-
(A) **An alloy that contains 3 parts gold mixed with 1 part some other metal.**
2. Which of the following is **LEAST LIKELY** to be a result of Global warming in the world?
(A) **Increase in frequency of cyclones and hurricanes.**
3. Which of the following statements describes “ecological footprint” most correctly and completely?
(A) **It is measure of the rate at which we consume resources and generate wastes.**
4. Which of the following substances, regarded as a gemstone in Astrology, is an element in Chemistry?
(A) **Diamond.**
5. Which Vitamin, because human body can synthesize it directly if adequate sunshine is available, is also called as the “Sunshine Vitamin”?
(A) **Vitamin D.**
6. In case of which of the following diseases multidrug resistant forms have been reported in India (actually all over the world too) causing serious concern about its cure in future?
(A) **Tuberculosis.**
7. Botanically speaking, the spines seen on the body of Cacti are -
(A) **Modified leaves.**
8. When walking on a polished slippery floor or ice, a person takes smaller steps than in case of walking on ordinary floors and surfaces. This phenomena is best explained by-
(A) **The force of friction being less in slippery surfaces than ordinary rough ones.**
9. A 160 cm tall lady wants to buy a dressing table mirror in which she can see herself head to feet when standing erect. The minimum height (length) of the mirror that would meet the need will be-
(A) **80 cms.**
10. Which of the following qualities will provide the best material for making cooking vessels?
(A) **High thermal conductivity and high specific heat.**
11. What is the main ingredient of dry ice?
(A) **Carbon dioxide.**

12. Which of the following acids is NOT FOUND in foods/drinks that we consume?
(A) **Triflic acid.**
13. Which of the following correctly names two pure allotropes of carbon?
(A) **Graphite and Diamond.**
14. How many legs does a spider have?
(A) **8**
15. Among the following statements about pancreas, namely-
I. It is a part of the endocrine system.
II. It is a part of the digestive system.
III. It is a part of the excretory system.
(A) **Only statements I and II are correct.**
16. Which of the following is **the least important function** of water in human body?
(A) **It maintains a healthy weight of body.**
17. Which of the following is the correct list of three fruits, defined as it is in botany?
(A) **Brinjal, Tomato and Lemon.**
18. Which of the following diseases in humans can be best prevented by using iodized salt in place of common salt in food?
(A) **Goitre.**
19. Which of the following correctly explains the cause of a solar eclipse?
(A) **Moon comes between Earth and Sun.**
20. Cloudy nights are generally warmer compared to clear cloudless nights, because clouds-
(A) **Reflect back most of the heat given out by the earth.**
21. If $x + y = 7$, $y + z = 11$ and $x + z = 8$, which of the following statements is true?
(A) **$x < y < z$.**
22. A machine is switched on at 11:49 AM and switched off at 08:03 PM the same day. How long was the machine in “switched on” position that day?
(A) **8 hours and 14 minutes.**
23. A rectangular park of length 20 mts. And width 12 mts. Is surrounded on all its sides by a road of 2 mts. width. The area of the road is-
(A) **144 square mts.**
24. The volume of metal used to make a hollow hemisphere of outer diameter 12 cms. and inner diameter 10 cms. is -
(A) **$182\pi/3$ cubic cms.**
25. If $(x - 1)^2 + (y - 2)^2 + (z - 5)^2 + (t - 7)^2 = 0$, then $(xyzt + 12)$ is equal to-
(A) **82.**

In the figure given below , the sum of angles “X” and “Y” will be equal to-

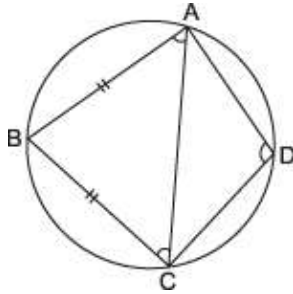


- (A) 280 degrees.
26. In a purse there are notes of denomination Rs 50, Rs 100 and Rs 500 only in the ratio of 1:2:3 respectively. If the total amount in the purse is Rs 10500, how many Rs 100 notes are there in it?
(A) 12.
27. Sweety can do a work in 4 days. Along with Mishthi the work is done in 3 days. If Mishthi alone would have done the work, how many days would it have taken to complete?
(A) 12 days.
28. If $(2/3)^{x+2} = (3/2)^{2-2x}$ then x is equal to-
(A) 4
29. A sum of Rs 15000 is kept in a fixed deposit in a bank that pays 4% annual interest compounded yearly. The amount of interest the deposit will earn in 2 years will be-
(A) Rs 1224.
30. The expression $[27 \div 3 (4 + 5) - 17 + 9 \times 2]$ is equal to-
(A) 82.
31. In a circle two chords AB and AC, each being in length equal to the radius of circle are drawn. O is the centre of the circle. Of the statements-
(P) The line connecting B and C will pass through O, and,
(Q) The angle OCA will be equal to 60 degrees,
(A) Only statement Q is correct.
32. If 20% of a = b, then b% of 20 is equal to-
(A) 4% of a.
33. From a point "B" on a level ground, the angle of elevation of the top of a tower is 30 degrees. If the tower is 100 meters high, the distance from point "B" to the foot of the tower is almost-
(A) 173 mts.
34. If $0 < \alpha < 90^\circ$, the value of the product $[\sin \alpha \cdot \cos \alpha \cdot \tan \alpha \cdot \operatorname{cosec} \alpha \cdot \sec \alpha \cdot \cot \alpha]$ is-
(A) Equal to 1.
35. The speeds of four metro trains are 1:2:3:4. The ratio of the times taken by them to cover a distance of 100 kms will be:
(A) 12:6:4:3.
36. If the total surface area of a sphere and cube are the same, the ratio of the square of their volumes will be -
(A) $6: \pi$ respectively.

37. 10 years ago the age of a father was 3 times that of his son. 10 years later father's age will be 2 times that of the son. The ages of father and son today are in the ratio of-
 (A) 7:3.
38. A sum of money kept in a bank at simple annual interest becomes Rs 896 (principal + interest) in three years and Rs 928 in four years. The sum of money kept in the bank is-
 (A) Rs 800.
39. A ladder is leaning against a vertical wall with its tip touching the wall being 8 mts. above ground. When the bottom of the ladder is moved 2 mts away from the wall, the top of the ladder touches the foot of the wall. The length of the ladder is-
 (B) 17 mts.
40. The sum of the series $1^2 - 2^2 + 3^2 - 4^2 + 5^2 - 6^2 + \dots$ up to 20 terms is-
 (A) - 210.
41. There are two buckets kept in a room. The first bucket contains 'N' liters of water and the second an equal quantity of orange juice. From the first bucket 'n' ml of water is taken and added to the second bucket. After mixing this water with the orange juice in the second bucket, 'n' ml of the mixture is added to the first bucket. Which of the following statements is correct with regards to the contents of the buckets now?
 (A) The percentage of orange juice in first bucket is the same as that of water in the second bucket.
42. Akbar keeps running on a circular track with a uniform speed such that he completes one round every 40 seconds. On the same circular track Basha keeps running, but in the direction opposite to Akbar, with such uniform speed, that Akbar meets him every 15 seconds. The time taken by Basha to complete each round of the circular track is-
 (A) 24 seconds.
43. The sides of a right angled triangle are equal to a cms., (a + d) cms. and (a + 2d) cms. If both 'a' and 'd' are positive numbers, the ratio of 'a' to 'd' is-
 (A) 3:1.
44. A starts business with Rs. 3500 in January 2013. After 5 months, B joins with A as his partner. In December 2013, the profit is divided in the ratio 2: 3. What is B's contribution in the capital?
 (A) Rs 9000.
45.
$$\frac{(469 + 174)^2 - (469 - 174)^2}{(469 \times 174)} = ?$$

 (A) 4.
46. Tangents are drawn at points A and B of a circle. These tangents intersect at a point C. The length of the segment AB is 6 cms. and $BC = AC = 5$ cms. What is the length of the radius of the circle?
 (A) $15/4$ cms.

47.



In the figure given above, ABCD is a quadrilateral with $AB = BC$ and angle $BAC = 65^\circ$. Angle ADC will be equal to-
 (A) 130° .

48. There are three integral non-zero numbers 'm', 'n' and 'r' which are in arithmetic series. If 'm' is increased by 1, or if r is increased by 2, the numbers form geometric series. The number 'n' can be-
 (A) 12.
49. Naga was born in the year 19n. 'n' is a two digit number. In the year 2014 he completed 'n' years of his age. The sum of the two digits of 'n' is-
 (A) 12.
50. For the data-
 16, 25, 9, 1 and 4,
 what will be the difference between the arithmetic mean and median?
 (A) 2
51. Which of the following statistical indicators measures asymmetry of data?
 (A) Skewness.
52. Four old but well maintained jeeps A, B, C and D are used in patrolling of a forest range. The only expenditures incurred on them, and distances run in December 2014, is given in the Table below.

Sno.	Jeep name	Distance run in kms.	Wages paid to driver in Rupees	Total expenditure in Rs (wages + diesel)
1	A	1000	6000	11000
2	B	1800	5000	12500
3	C	1500	4000	11500
4	D	1200	6000	16000

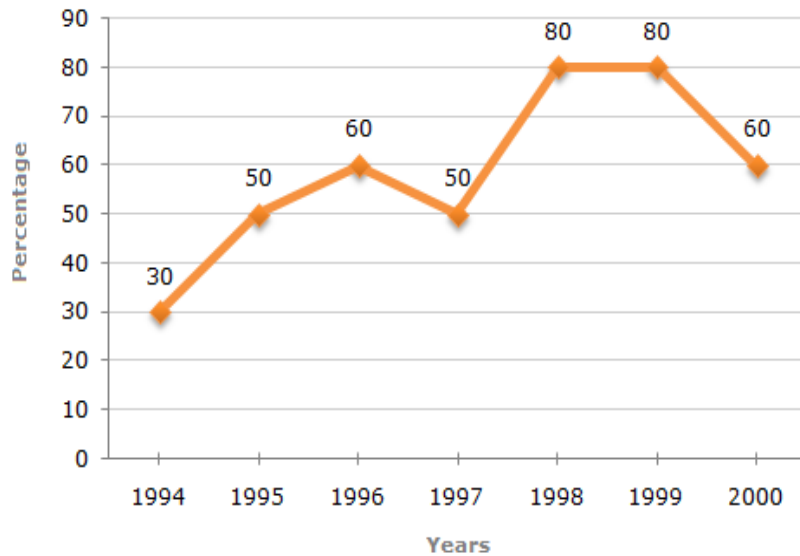
In case of which Jeep, the ratio of driver wage to distance run is the highest and in which case the lowest?
 (A) A and C respectively.

53. In the above question, if the cost of diesel is Rs 50 per litre, the Jeeps giving the best and the worst average (kms/litre) are-
 (A) B and D respectively.

54. The Finance Minister of a country claims that the income of every person in the country is more than the average per capita income of the country. Statistically, the claim of the Minister can be termed as-
- (A) **Wrong, no matter what be the population and average per capita income of the country.**

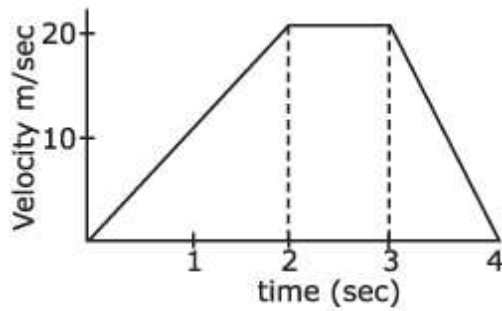
Question numbers 56 to 58 are to be answered on the basis of information given below.

The following graph gives the percentage of number of candidates who qualified against the total number of candidates who applied (along the Y axis) for the post of Range Forest Officers in the years 1994 to 2000 (along X axis).



Based upon these answer the following three questions.

55. The difference between the percentages of candidates qualified to appeared was maximum in which of the following pairs of years?
- (A) **1997 and 1998.**
56. The total number of candidates qualified in 1999 and 2000 together was 33500 and the number of candidates appeared in 1999 was 26500. What was the number of candidates in 2000?
- (A) **20500.**
57. The average of percentage of candidates qualified to appeared in the period 1994 to 2000 is nearest to-
- (A) **58%.**
58. The Geometric Mean of three numbers; 'm', 27 and 'n', was calculated to be 9. It was realized there was a mistake in the data. The number 27 was wrong. In its place 8 was the correct figure. The correct Geometric Mean will be-
- (A) **6**
59. The graph of the velocity (in mts. /sec) of a particle moving along a certain path is given below. What is the distance travelled by the particle in 4 seconds?



(A) 50 mts.

60. The arithmetic mean of a data is 10 and its variance 4. What is the Coefficient of Variation of the data?

(A) 20%

61. Which of the following statements is correct for statistical data?

(A) Arithmetic mean > Geometric mean > Harmonic mean.

62. The monthly income of Anil is Rs. 8000. He sends half of this to his parents. Of the remaining half, one tenth is used for paying house rent, Rs. 3400 in household expenses and the remaining is the saving. If this data is represented by a pie chart, the sectorial angle representing savings is-

(A) 9 degrees.

Data for answering questions 64 and 65.

The table below gives the yields of timber, billets and firewood from five plantations. The extent of plantations is in hectares and the produce data is in cubic mts. 2.0 cubic mts of timber is one tonne in weight, 2.50 cubic mts of billets is equal to one tonne in weight and 3.0 cubic mts of firewood weighs one tonne.

S. no	Plantation name	Extent in hec.	Timber (cubic mts)	Billets(cubic mts)	Firewood (cubic mts)
1	Afzalpur	25	128	80	960
2	Badalhalli	50	120	100	1980
3	Channapura	40	216	130	1596
4	Devanapura	75	398	250	3030
5	Entonbagh	80	420	275	3300

Based upon the above, please answer the following two questions.

63. The ratio by weight of timber, billets and firewood obtained from Afzalpur plantation is equal or nearest to-

(A) 2:1:10.

64. If billets and firewood obtained from all plantations was used as pulpwood, how much produce approximately would have been available for doing so?

(A) 4000 tonnes.

65. The following letter group series has been formed following a particular logical rule- ABC, ZYX, DEF, WVU,

The correct letter group that continue the series is-

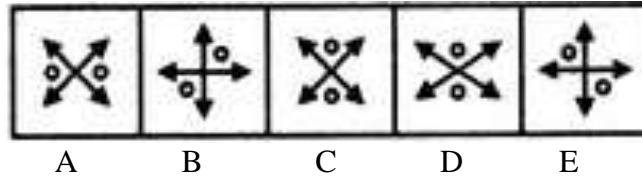
(A) GHI.

66. Manjunath has 6 pairs of black and 2 pairs of white socks which he keeps in a drawer. He

wears them without any preference for any color, but both socks have to be of the same color. What is the minimum number of socks he should take out from the drawer without looking at their color, so that he gets a pair of socks of one color that he can wear?

(A) 3.

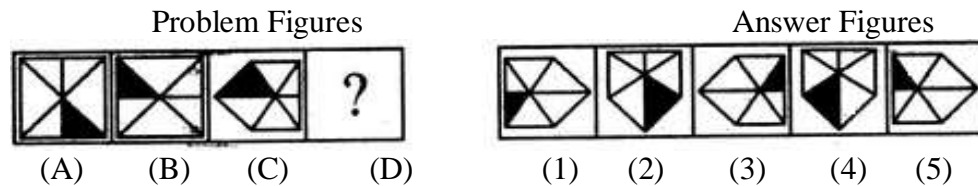
67. Of the five figures marked "A" to "E", which is different from the rest?



(A) D

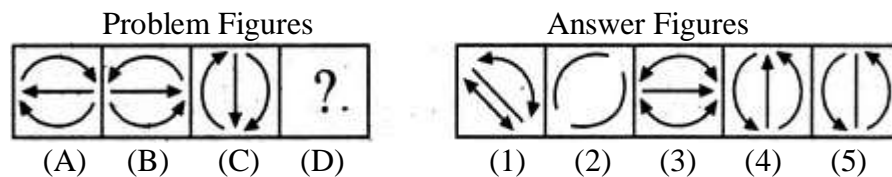
The following two questions consist of two sets of figures. Figures A, B, C and D constitute the Problem Set while figures 1, 2, 3, 4 and 5 constitute the Answer Set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from the Answer Set that would replace the question mark (?) in figure D.

69.



(A) 2

70.



(A) 4

71. How many 8's are there in the following sequence which are immediately preceded by 6 but not immediately followed by 5?

6, 8, 5, 7, 8, 5, 4, 3, 6, 8, 1, 9, 8, 5, 4, 6, 8, 2, 9, 6, 8, 1, 3, 6, 8, 5, 3, 6

(A) Three.

72. In the multiplication shown below, 'A' and 'B' are two different single digit numbers each being more than 0 but less than 9. The numerical difference between 'A' and 'B' is-

$$\begin{array}{r} A \ 3 \ B \\ \times \ B \\ \hline 2 \ 1 \ 7 \ B \end{array}$$

The numerical difference between 'A' and 'B' is-

(A) 1.

73. The series 11, 18, m, 41, 57, 76 follows a particular rule. The value of $(m^2 + 16)$ is-

(A) 800.

74. The series,

$$P_5QR, P_4QS, P_3QT, \text{ ______}, P_1QV$$

follows a particular rule in alphabets and numbers. The blank space

should be filled by-

(A) P_2QU .

75. An economist found that the price (P) of Beeswax followed the relation $P = \frac{at}{(b + ct)}$,

for the period year 1900 to year 2000, where a, b and c are constants and more than 1 in magnitude, P is the price in rupees per gram of beeswax, and t is the year (1900, 1901..... 2000)?As per this which of the following inferences is correct-

(A) **The price of beeswax decreased continuously from year 1900 to year 2000.**

76. A \$ B means A is the father of B; A # B means A is the sister of B; A * B means A is the daughter of B and A @ B means A is the brother of B. Which of the following indicates that M is the wife of Q?

(A) **Q \$ R @ T * M**

Question numbers 77 and 78 are to be answered on the basis of information given below.

An evaluator desires to have codes generated with the following conditions-

- The codes should be used only the digits 0,1,2,3 and 4, but no others.*
- Each digit should appear in the code, but only once.*
- The second digit in the code should be exactly double of the first digit.*
- The value of the third digit should be less than the value of the fifth digit.*

77. If the last digit of a valid code generated is 1, which of the following is correct?

(A) **The first digit of the code is 2.**

78. The following combination of third and fourth digits of a valid code is impossible-

(A) **Third digit 1 and fourth digit 0.**

79. One of the numbers amongst 11, 31, 41, 51 and 61 is odd and does not belong to the group. That number is-

(A) **51.**

80. Which number replaces the mark '?' in the matrix below correctly?

6	6	8
5	7	5
4	3	?
120	126	320

(A) **8**

81. On a particular day in your job, you receive three written unsigned complaints by mail alleging that your subordinate is collecting bribes from poachers allowing them to hunt animals in his jurisdiction. What is the course of action you will follow?

(A) **Investigate/get investigated the correctness of complaints and the role of subordinate in it and then take further action.**

In the two questions below there is a statement followed by two courses of action numbered I and II. You have to assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the suggested courses of action logically follow(s) for pursuing.

Give answer

(A) If only I follows

- (B) If only II follows
- (C) If either I or II follows
- (D) If neither I nor II follows
- (E) If both I and II follow

82. **Statement:** A large number of people in ward X of the Kochi are diagnosed to be suffering from Dengue spread through mosquitoes.

Courses of Action:

- I. The city municipal authority should take immediate steps to carry out extensive fumigation in ward X.
- II. The people in the area should be advised to take steps to avoid mosquito bites.

(A) **If both I and II follow**

83. **Statement:** Every year, at the beginning or at the end of the monsoons, we have some cases of hepatitis (water borne disease), but this year, it seems to be a major epidemic, witnessed after nearly four years.

Courses of Action:

- I. Precautionary measures should be taken after every four years to check this epidemic.
- II. People should be advised to drink boiled water during and after rainy season.

(B) **If only II follows**

Question numbers 84 and 85 are to be answered on the basis of information given below.

There are four houses in a row each owned by Amar, Bashir, Chetan and Dilip. Each of them has a car; all cars are of different colors, which are black, green, red and white.

- a. *The black car is owned by Dilip.*
- b. *Bashir does not have his house at either of the ends.*
- c. *The second house from left is of Amar.*
- d. *The red car is of Chetan.*

Based on this information answer the following three questions.

84. Which of the following statements cannot be true?

(A) **The owner of the left end house has the white car.**

85. Which of the following statements also cannot be true?

(A) **There is one house between the houses of Amar and Bashir.**

86. If A is the son of Q, Q and Y are sisters, Z is the mother of Y, P is the son of Z, then which of the following statements is correct?

(A) **P is the maternal uncle of A.**

87. Three ladies X, Y and Z are married to three men named A, B and C but not necessarily in that order. A is the husband of X, the husband of Y is not an engineer, Z is not married to a doctor. A is a lawyer but C is not a doctor. Given this information to be correct, which of the following statements is true?
(A) Y is married to B who is a doctor.

Question numbers 88 to 90 are to be answered on the basis of information given below.

Six persons named A, B, C, D, E and F live in an apartment in Mangalore and by profession they are Engineer, Housewife, Journalist, Lawyer, Photographer and Waiter but not necessarily in that order. The six people include two married couples. Further-

- I. A is married and his wife is a Housewife by profession.
- II. B is a Lawyer, who is married to the Photographer sister of A.
- III. D is the brother of C.
- IV. C is not a Housewife by profession.
- V. The Waiter is going to get married to his girlfriend in Puttur shortly.
- VI. E is a Journalist, is unmarried and has taken a vow to never get married.

88. Who is the wife of B?

- (A) C.

89. Who is the Engineer?

- (A) A.

90. Which of the following are the two couples?

- (A) A, B, C and F.

Directions for questions 91 to 93.

In each question below are given statements followed by two conclusions marked P and Q. You have to take the given statements to be totally true, even if they seem to be at variance from well known facts. Read the conclusions and decide as to which of them logically follow from the given statements, disregarding commonly and well known facts. Answer the questions about conclusions marking in the OMR sheet-

- (A) If only conclusion P follows.
(B) If only conclusion Q follows.
(C) If either conclusion P or conclusion Q follows.
(D) If neither conclusion P nor conclusion Q follows.
(E) If both conclusions P and Q follow.

Based on these directions, please answer questions 91 to 93.

91. Statements: (a) All holes are dots.
(b) All dots are mats.
Conclusions: (P) All holes are mats.
(Q) All mats are holes.

- (A) If only conclusion P follows.

92. Statements: (a) All fires are engines.
(b) All engines are pressures.
(c) No pressure is hand.
Conclusions: (P) All pressures are fires.
(Q) No hand is fire.

- (A) If only conclusion Q follows.

93. Statements: (a) No name is a cat.
(b) Some cats are maps.
(c) All parrots are names.
Conclusions: (P) No cat is parrot.
(Q) It is possible that all parrots are maps.

(A) If both conclusions P and Q follow.

94. Four class mates named A, B, C and D participated in a race. A did not come first, B did not come second, C did not come third and D did not come fourth. Also, neither A nor D were in the first two places. What is the correct order in which they finished the race?

(A) A-4, B-1, C-2 and D-3.

Question numbers 95 and 96 are to be answered on the basis of information given below.

Two places named A and F are connected by buses following three routes. Route-1 has two stops B and D and Route-2 has stops C and D between A and F. The shortest route is Route-3. It is 10kms in length with only one stop C, which falls exactly midway in the length of the route. The distance between C and D is 4 kms, between B and D is 3 kms and between D and F is 2 kms. The longest route is 3 kms longer than the shortest one.

Based on this information please answer the following two questions.

95. What is the distance between A and B?

(A) 8 kms.

96. What is the length of Route-2?

(A) 11.0 kms.

97. The relationship *College: Student* is equivalent to the which of the following-

(A) *Hospital: Patient*.

98. In a family Asha is two times older than Bina, Chhaya is half the age of Deepa and Bina older than Chhaya, which of the following conclusions is definitely true?

(A) Asha is older than Chhaya.

99. Five persons named A, B, C, D and E buy a newspaper and read it in turns. The first reader gives the newspaper to C. A is the person who gives the newspaper to the last reader. E is neither the first nor last to read the newspaper. There are two readers between B and A. The first and third readers of the newspaper are-

(D) B and D respectively.

100. In a certain code CONTRIBUTE is written as ETBUIRNTOC. Which letter will be sixth from left when POPULARISE is coded in this language?

(C) L.

-----END OF TEST QUESTIONS-----

Procedure to Challenge :

After checking all the questions and answers, if the Candidates have any challenge with regard to the correct answers published here, you may challenge the same through the Blog on www.aranya.gov.in or through Speed Post or in person, so as to reach us on or before 1200 P.M on 23/02/2015. Any letter or challenge received after the given time shall not be entertained.

The Speed post sealed cover should be sent at the following address :

The Additional P.C.C.F.,
Personnel and Recruitment,
4th Floor, Aranya Bhawan,
18th Cross, Malleswaram,
Bengaluru -560003.

“Challenge to Questions/Answers to RFO Exam 2015” should be boldly written on the Sealed Cover sent by Speed Post or handed over in person. While challenging the answers, the Candidate must write the full question and the answer and the justification behind the answer in the following format:

- 1) Name of the Candidate:
- 2) Register No.:
- 3) Subject:
- 4) Question Paper Booklet Serial No.:
- 5) Question No.:
- 6) Question:
- 7) Observation/Justification: