

Section A – Reasoning

Choose the most appropriate option.

(Q.No. 1 to 30)

Directions for question numbers 1 to 3 :

Study the following series I and II comprising letters/digits/symbols and answer the questions given below.

Series I : NPQ*54BZ\$#37D9A?F8G
H1+DK6

Series II : 74€J M1©YP8QR5TN62?U
A39@IS

1. If the letters, the digits and the symbols from each series are counted separately, which of the following is lowest in count?
(A) Symbols in series I
(B) Letters in series I
(C) Digits in series II
(D) Symbols in series II
2. What is the total number of symbols in series I each of which is immediately followed by a digit and immediately preceded by a letter together with the number of letters in series II which are immediately preceded by a symbol and immediately followed by a letter?
(A) 5
(B) 4
(C) 1
(D) 3

3. If the first 10 elements of series I are picked up and written in reverse order followed by last 10 elements of series II without changing the order, which of the following pairs of elements will indicate 16th element from the left and the 8th element to its left respectively?
(A) A, Q
(B) 3, Q
(C) 3, Z
(D) A, Z
4. Which of the following will come in place of the question mark in the following letter series?
CYD FTH IOL LJP _?
(A) OFT
(B) LET
(C) OEK
(D) OET
5. How many 9's are there in the following number sequence which are immediately preceded by 3 but not immediately followed by 4?
2395139673948934932398393
(A) 3
(B) 2
(C) 1
(D) 4
6. Which of the following letters will be sixth to the right of the eighteenth letter from the left after reversing the second half of the following English alphabets?
A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z
(A) X
(B) P
(C) O
(D) N

Directions for question numbers 7 to 8 :

In a certain code language,

- (a) '1 3 4' means 'you are well',
(b) '7 5 8' means 'they go home',
(c) '8 3 9' means 'we are home'
7. Which of the statement can be dispensed with while answering the above question ?
- (A) (a) only
(B) (b) only
(C) (a) or (c) only
(D) (b) and (c) only
8. Which of the following represents 'they' in that code language ?
- (A) 5
(B) 7
(C) 3
(D) Data inadequate

Directions for question numbers 9 to 11 :

Read the following information to answer the questions.

Six persons were playing a game sitting in a circle facing the centre. Vijay was to the left of Sudhir. Amar was between Rakesh and Sarv. Neerav was second to the left of Amar.

9. Who is/are between Amar and Vijay ?
- (A) Sarv or Sudhir
(B) Rakesh and Sarv
(C) Sudhir or Rakesh
(D) None of these
10. Who is second to the right of Vijay ?
- (A) Neerav
(B) Rakesh
(C) Sarv
(D) Cannot be determined
11. Which of the following is the position of Amar from Neerav ?
- (A) Second to the left
(B) Third from left
(C) Third from right
(D) None of these

Directions for question numbers 12 to 14 :

Read the following information to answer the questions.

A + B means A is daughter of B; A * B means A is son of B and A - B means A is wife of B.

12. If $T - S * B - M$, which of the following is not true ?

- (A) B is mother of S
- (B) M is husband of B
- (C) S is daughter of B
- (D) T is wife of S

13. If $Z * T - S * U + P$, what is U to Z ?

- (A) Mother
- (B) Grandmother
- (C) Father
- (D) Cannot be determined

14. If $P * Q - S$, which of the following is true ?

- (A) S is wife of Q
- (B) S is father of P
- (C) P is daughter of Q
- (D) Q is father of P

Directions for question numbers 15 to 18 :

Read the following information carefully to answer the following questions.

- (i) In a family of six members A, B, C, D, E and F each one plays one game out of the six games namely Chess, Carrom, Table Tennis, Badminton, Bridge and Cricket.
- (ii) Two are married couples.
- (iii) B, who plays Carrom, is daughter-in-law of E.
- (iv) A is father of D, the Table Tennis player, and D is the father of C, who plays Cricket.
- (v) F is brother of C.
- (vi) Chess is not played by a female member.
- (vii) E's husband plays Badminton.

15. How many male members are there in the family ?

- (A) Two only
- (B) Three only
- (C) Four Only
- (D) Data inadequate

16. How is F related to A ?

- (A) Granddaughter
- (B) Grandson
- (C) Son
- (D) Daughter

17. Who among them plays Bridge ?

- (A) E
- (B) F
- (C) A
- (D) Data inadequate

18. Who is the husband of B ?

- (A) Data inadequate
- (B) A
- (C) C
- (D) D

19. In a row of girls, if Seeta who is 7th from the left and Leena who is 9th from the right interchange their seats, Seeta becomes 11th from the left. How many girls are there in the row ?

- (A) 16
- (B) 20
- (C) 22
- (D) None of these

20. A supplement of Vitamin A and Zinc may boost children's resistance to Malaria (observation from one experiment conducted in a village 'X'). Which of the following, if true, would weaken the statement ?

- (A) No adult in village 'X' has fallen sick because of Malaria.
- (B) For the last three years there is hardly any case of child affected by Malaria from village 'X'.
- (C) The experiment with Vitamin A and Zinc is being duplicated in other nearby cities adjacent to village 'X'.
- (D) Villages adjacent to 'X' have reported substantial cases of Malaria affecting mostly children.

21. Radha's school bus is facing North when it reaches her school. After starting from Radha's house, it turns right twice and then left before reaching the school. What direction was the bus facing when it left the bus stop in front of Radha's house ?

- (A) South
- (B) North
- (C) East
- (D) Cannot be determined

22. A said to B that B's mother was mother-in-law of A's mother. How is A's mother related to B's mother ?

- (A) Daughter-in-law
- (B) Mother-in-law
- (C) Sister
- (D) Aunt

23. In a certain code UPGRADE is written as WNIPCBG. How is DROWN written in that code ?

- (A) BTMYL
- (B) BPMYL
- (C) BTQYL
- (D) FPQUP

Directions for question numbers 24 to 28 :

Read the following information to answer the questions given below.

- (i) Five friends A, B, C, D and E wore shirts of green, yellow, pink, red and blue colours and shorts of black, white, grey, blue and green colours.
- (ii) Nobody wore shirt and short of same colour.
- (iii) D wore blue shirt and C wore green short.
- (iv) The one, who wore green shirt, wore black short and the one who wore blue short, wore red shirt.
- (v) E did not wear red shirt.

24. Who wore white short ?

- (A) E
- (B) Data inadequate
- (C) B
- (D) A

25. Who wore black short ?

- (A) C
- (B) E
- (C) B
- (D) D

26. Which colour shirt did C wear ?

- (A) Yellow
- (B) Blue
- (C) Green
- (D) Pink

27. Which colour short did B wear ?

- (A) Grey
- (B) Blue
- (C) White
- (D) Black

28. What was the colour combination of D's shirt and short ?

- (A) Green and Black
- (B) Red and Blue
- (C) Blue and Grey
- (D) Blue and White

29. In a certain code STABILISE is written as UVCDKNKUG. How is ORGANISE written in that code ?

- (A) QTICPKUG
- (B) QTICPKUH
- (C) QTIBPKUG
- (D) QTICPKUJ

30. Shoe is related to Shining in the same way as Pant is related to?

- (A) Stitching
- (B) Wearing
- (C) Keeping
- (D) Buying

Section B – English

Choose the most appropriate option.

(Q.No. 31 to 60)

Directions for question numbers 31 to 35 :

Some of the sentences have errors and some have none. Find out which part of a sentence has an error, and the appropriate letter (A), (B), (C) is your answer. If there is no error, (D) is the answer.

31. The accelerating pace of life in our metropolitan city /

(A)

has had the tremendous effect /

(B)

on the culture and life-style of the people /

(C)

No error

(D)

32. Frozen foods are so popular today /

(A)

that many people wonder /

(B)

how they ever lived without them. /

(C)

No error

(D)

33. I've been to a few of his lectures, /
(A)

but understood little of /
(B)

what he has said. / No error
(C) (D)

34. The old woman has had the best medical facilities available /
(A)

but she will not be cured /
(B)

unless she does not have a strong desire to live. / (C)

No error
(D)

35. Not only the bandits robbed /
(A)

the traveller of his purse /
(B)

but also wounded him grievously. /
(C)

No error
(D)

Directions for question numbers 36 to 40 :

Read the passage carefully and choose the best answer to each question out of the four alternatives.

Passage

Some years ago I had the privilege of meeting the world's oldest man. At least he said he was. And he was so dogmatic about it that the promoters of a cartoon strip that specialised in unbelievable oddities brought the old man up to New York from his native Columbia, to have him examined by a team of doctors at the Cornell Medical Centre. He was an Indian, he was four feet four inches high, he had an alligator-hide complexion and a tendency to swing with his right whenever he was passed from one medico to another. He said he was 167, born the same year as the American Constitution. When the name of George Washington was suggested to him, to help him fix his generation, he said he remembered the man well. But he resented coming all the way to New York. He wanted to be left alone to go about his business, which at that time was the business of looking for a sixth wife to comfort him in his approaching old age.

36. The old man did not like being brought to New York because :

- (A) At that time he was busy looking for a sixth wife
- (B) He didn't like travelling much
- (C) He didn't like New York as a city
- (D) He preferred to be left alone in his native village

37. George Washington's name was mentioned to the old man :

- (A) To teach him a bit of history
- (B) To know whether he had any personal equation with Washington
- (C) To make fun of his advanced age
- (D) To determine his age

38. The old man claimed that the Americans gave themselves a Constitution :

- (A) Before he was born
- (B) In the year of George Washington's birth
- (C) Two centuries ago
- (D) One hundred and sixty seven years ago

39. The cartoon-strip people got interested in him because :

- (A) He was a comical creature
- (B) They wanted to feature him in a cartoon strip
- (C) A person surviving at that age was odd and unbelievable
- (D) He had the tendency of swinging with his right.

40. The old man was 'dogmatic' about the fact that :

- (A) He was four feet four inches tall
- (B) He was the world's oldest living man
- (C) He belonged to Columbia
- (D) He had an alligator-hide complexion

Directions for question numbers 41 to 45 :

Out of the four alternatives choose the one which can be substituted for the given words/sentence.

41. One who cannot be corrected :

- (A) Incurable
- (B) Incorrigible
- (C) Hardened
- (D) Invulnerable

42. A small shop that sells fashionable clothes, cosmetics etc. :

- (A) Store
- (B) Stall
- (C) Boutique
- (D) Booth

43. The study of ancient societies :

- (A) Anthropology
- (B) Archaeology
- (C) History
- (D) Ethnology

44. One who is honourably discharged from service :

- (A) Retired
- (B) Emeritus
- (C) Relieved
- (D) Emancipated

45. One who is in charge of a museum :

- (A) Curator
- (B) Supervisor
- (C) Caretaker
- (D) Warden

Directions for question numbers 46 to 50 :

Rearrange the following five sentences P, Q, R, S and T in the proper sequence so as to form a meaningful paragraph; then answer the questions given below them.

P The deep, deciduous forests and the patches of tall grassland, far removed from civilisation, have become shelter for dangerous terrorists.

Q This same quality, however, which once made Manas such a refreshing change, has now become the cause for major concern.

R One of Manas's greatest assets has been its seclusion from human habitation.

S Their assault on it can be gauged from the fact that venison is being sold at Rs. 3 to 4 in the villages bordering the forest.

T Armed with sophisticated, as well as crude home-made weapons, they have total disregard for wildlife.

46. Which of the sentence should come first in the sequence ?

- (A) S
- (B) T
- (C) P
- (D) R

47. Which of the following should come second in the sequence ?

- (A) S
- (B) T
- (C) P
- (D) Q

48. Which of the sentence should come third in the sequence ?

- (A) S
- (B) T
- (C) P
- (D) Q

49. Which of the sentence should come fifth in the sequence ?

- (A) S
- (B) T
- (C) P
- (D) Q

50. Which of the sentence should come fourth in the sequence ?

- (A) S
- (B) T
- (C) P
- (D) Q

Directions for question numbers 51 to 52 :

Choose from the alternatives a word which is nearest in meaning to the given word.

51. Torpid

- (A) Fast
- (B) Slow
- (C) Medium
- (D) Energetic

52. Mayhem

- (A) Jubilation
- (B) Havoc
- (C) Excitement
- (D) Defeat

Directions for question numbers 53 to 55 :

Choose the word OPPOSITE in meaning to the underlined word.

53. Lackadaisical

- (A) Enthusiastic
- (B) Slow
- (C) Fast
- (D) Nervous

54. Sporadic

- (A) Irregular
- (B) Uneven
- (C) Frequent
- (D) Regularity

55. Schism

- (A) Candour
- (B) Gulf
- (C) Harmony
- (D) Regularity

Directions for question numbers 56 to 60 :

In each of the following questions part of the sentence is italicised. Four alternative meanings of the italicised part of the sentence are given below the sentence. Mark as your answer that alternative meaning which you think is correct.

56. When the police came, the thieves *took to their heels*.

- (A) Were taken by surprise
- (B) Took shelter in a tall building
- (C) Opened indiscriminate fire
- (D) Took to flight

57. He does not like to be friendly with Sunita; he always *gives her a cold shoulder*.

- (A) Pushes her with his shoulder whenever they meet
- (B) Insults her in the presence of others
- (C) Argues with her on any issue
- (D) Tries to be unfriendly by taking no notice of her

58. He always *cuts both ends*.

- (A) Behaves dishonestly
- (B) Works for both sides
- (C) Creates discordance among friends
- (D) Argues in support of both sides of the issue

59. He is a plain, simple and sincere man. He will always *call a spade a spade*.

- (A) Find meaning or purpose in your action
- (B) Say something which is to be taken seriously
- (C) Avoid controversial situations
- (D) Be outspoken in language

60. I cannot *put up with* that nasty fellow :

- (A) Praise
- (B) Forgive
- (C) Endure
- (D) Control

Section C – Aptitude

Choose the most appropriate option.

(Q.No. 61 to 90)

61. If $\log_e x + \log_e (1+x) = 0$, then :
(A) $x^2 + x - 1 = 0$
(B) $x^2 + x + 1 = 0$
(C) $x^2 + x - e = 0$
(D) $x^2 + x + e = 0$
62. If the ratio of the areas of two squares is 9 : 1, the ratios of their perimeters is :
(A) 9 : 1
(B) 3 : 1
(C) 3 : 4
(D) 1 : 3
63. The factors of $(x^2 + 4y^2 + 4y - 4xy - 2x - 8)$ are :
(A) $(x - 2y - 4)(x - 2y + 2)$
(B) $(x - y + 2)(x - 4y - 4)$
(C) $(x + 2y - 4)(x + 2y + 2)$
(D) None of these
64. An agent buys a T.V. set listed at ₹ 10,000 and gets 10% and 20% successive discounts. He spends 10% of his C.P. on transport. At what price (in rupees) should he sell the T.V. set to earn a profit of 10%?
(A) 8,692
(B) 8,702
(C) 8,712
(D) 8,722
65. By which one of the following should we multiply 152207 so that the product is 1111111 ?
(A) 53
(B) 63
(C) 73
(D) 83
66. In a class consisting of 100 students, 20 know English and 20 do not know Hindi and 10 know neither English nor Hindi. The number of students knowing both Hindi and English is :
(A) 5
(B) 10
(C) 15
(D) 20
67. A and B start a business with initial investments in the ratio 12 : 11 and their annual profits were in the ratio 4 : 1. If A invested the money for 11 months, B invested for :
(A) 3 months
(B) 4 months
(C) $\frac{11}{3}$ months
(D) 6 months
68. A train overtakes two persons who are walking in the same direction in which the train is going, at the rate of 2 kmph and 4 kmph and passes them completely in 9 and 10 seconds respectively. The length of the train (in metres) is :
(A) 45
(B) 54
(C) 50
(D) 72

69. Four milkmen rented a pasture. A grazed 18 cows for 4 months, B 25 cows for 2 months, C 28 cows for 5 months and D 21 cows for 3 months. If A's share of rent is ₹ 360, the total rent of the field (in rupees) is :

- (A) 1,500
- (B) 1,600
- (C) 1,625
- (D) 1,650

70. A sum of money amounts to ₹ 6,690 after 3 years and to ₹ 10,035 after 6 years on compound interest. The sum is :

- (A) ₹ 4,400
- (B) ₹ 4,460
- (C) ₹ 4,520
- (D) ₹ 4,445

71. For a sphere of radius 10 cm, the numerical value of the surface area is how many percent of the numerical value of its volume ?

- (A) 26.5%
- (B) 24%
- (C) 30%
- (D) 45%

72. About the number of pairs which have 16 as their H.C.F. and 136 as their L.C.M., we can definitely say that :

- (A) Only one such pair exists
- (B) Only two such pairs exist
- (C) Many such pairs exist
- (D) No such pair exists

73. A and B can complete a task in 30 days when working together. After A and B have been working together for 11 days, B is called away and A, himself completes the task in the next 28 days. Had A been working alone, the number of days taken by him to complete the task would have been :

- (A) $\frac{379}{9}$
- (B) $\frac{840}{19}$
- (C) $\frac{520}{11}$
- (D) $\frac{590}{11}$

74. Kamla got married 6 years ago. Today her age is $1\frac{1}{4}$ times of her age at the time of marriage. Her son's age is $\frac{1}{10}$ times of her age. Her son's age is :

- (A) 2 years
- (B) 3 years
- (C) 4 years
- (D) 5 years

75. Tarun bought a T.V with 20% discount on the labelled price. Had he bought it with 25% discount, he would have saved ₹ 500. At what price did he buy the T.V. ?

- (A) ₹ 8,000
- (B) ₹ 10,000
- (C) ₹ 12,000
- (D) ₹ 16,000

76. A can contains a mixture of two liquids A and B in proportion 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B, the proportion of A and B becomes 7 : 9. How many litres of liquid A was contained by the can initially ?
 (A) 25
 (B) 10
 (C) 20
 (D) 21
77. A man invests an amount of ₹ 15,860 in the names of his three sons A, B and C in such a way that they get the same interest after 2, 3 and 4 years respectively. If the rate of simple interest is 5%, then the ratio of the amounts invested among A, B and C will be
 (A) 10 : 15 : 20
 (B) 110 : 115 : 120
 (C) $\frac{1}{10} : \frac{1}{15} : \frac{1}{20}$
 (D) $\frac{1}{110} : \frac{1}{115} : \frac{1}{120}$
78. On dividing 50 into two parts such that the sum of their reciprocals is $\frac{1}{12}$, we get the parts as :
 (A) 20, 30
 (B) 24, 26
 (C) 28, 22
 (D) 36, 14
79. If $a^x = b$, $b^y = c$ and $c^z = a$, then xyz equals :
 (A) abc
 (B) $\frac{1}{abc}$
 (C) 1
 (D) None
80. A has to pay ₹ 220 to B after 1 year. B asks A to pay ₹ 110 in cash and defer the payment of ₹ 110 for 2 years. A agrees to it. Counting, the rate of interest at 10% per annum in this new mode of payment :
 (A) There is no gain or loss to anyone
 (B) A gains ₹ 7.34
 (C) A loses ₹ 7.34
 (D) A gains ₹ 11
81. A can finish a work in 12 days and B can do it in 15 days. After A had worked for 3 days, B also joined A to finish the remaining work. In how many days, the remaining work will be finished ?
 (A) $5\frac{1}{2}$
 (B) $4\frac{1}{2}$
 (C) 5
 (D) 6
82. A general wishing to draw his 17429 men in the form of a solid square found that he had 5 men over. The number of men in the front row was :
 (A) 174
 (B) 424
 (C) 132
 (D) 742
83. Vidya and Vandana solved a quadratic equation. In solving it, Vidya made a mistake in the constant term and got the roots as 6 and 2, while Vandana made a mistake in the coefficient of x only and obtained the roots as -7 and -1 . The correct roots of the equation are :
 (A) 6, -1
 (B) -7 , 2
 (C) -6 , -2
 (D) 7, 1

84. One litre of water is evaporated from 6 litres of a solution containing 4% of sugar. The percentage of sugar in the remaining solution is :

(A) $\frac{7}{5}\%$
(B) $\frac{26}{5}\%$
(C) $\frac{24}{5}\%$
(D) $\frac{17}{5}\%$

85. If a train runs at 40 kmph, it reaches its destination late by 11 minutes but if it runs at 50 kmph, it is late by 5 minutes only. The correct time for the train to complete its journey is :

(A) 13 min
(B) 15 min
(C) 19 min
(D) 21 min

86. On a scale of a map, 0.6 cm represents 6.6 km. If the distance between two points on the map is 80.5 cm, the actual distance between these points is :

(A) 9 km
(B) 72.5 km
(C) 190.75 km
(D) 885.5 km

87. The rate of interest on a sum of money is 4% per annum for the first 2 years, 6% per annum for the next 4 years and 8% per annum for the period beyond 6 years. If the simple interest accrued by the sum for a total period of 9 years is ₹ 1,120, what is the sum ?

(A) ₹ 1,500
(B) ₹ 2,000
(C) ₹ 2,500
(D) ₹ 4,000

88. The H.C.F. of $(4x^3 + 3x^2y - 9xy^2 + 2y^3)$ and $(x^2 + xy - 2y^2)$ is :

(A) $(x - 2y)$
(B) $(x - y)$
(C) $(x + 2y)(x - y)$
(D) $(x - 2y)(x - y)$

89. If 20 men working 7 hours a day can do a piece of work in 10 days, in how many days will 15 men working for 8 hours a day do the same piece of work ?

(A) $\frac{320}{21}$ days
(B) $\frac{35}{3}$ days
(C) $\frac{105}{16}$ days
(D) $\frac{21}{5}$ days

90. A owes B, ₹ 1120 payable 2 years hence and B owes A, ₹ 1081.50 payable 6 months hence. If they decide to settle their accounts forthwith by payment of ready money and the rate of interest be 6% per annum, then who should pay and how much :

(A) A, ₹ 50
(B) B, ₹ 50
(C) A, ₹ 70
(D) B, ₹ 70

84. One litre of water is evaporated from 6 litres of a solution containing 4% of sugar. The percentage of sugar in the remaining solution is :

(A) $\frac{7}{5}\%$

(B) $\frac{26}{5}\%$

(C) $\frac{24}{5}\%$

(D) $\frac{17}{5}\%$

85. If a train runs at 40 kmph, it reaches its destination late by 11 minutes but if it runs at 50 kmph, it is late by 5 minutes only. The correct time for the train to complete its journey is :

(A) 13 min

(B) 15 min

(C) 19 min

(D) 21 min

86. On a scale of a map, 0.6 cm represents 6.6 km. If the distance between two points on the map is 80.5 cm, the actual distance between these points is :

(A) 9 km

(B) 72.5 km

(C) 190.75 km

(D) 885.5 km

87. The rate of interest on a sum of money is 4% per annum for the first 2 years, 6% per annum for the next 4 years and 8% per annum for the period beyond 6 years. If the simple interest accrued by the sum for a total period of 9 years is ₹ 1,120, what is the sum ?

(A) ₹ 1,500

(B) ₹ 2,000

(C) ₹ 2,500

(D) ₹ 4,000

88. The H.C.F. of $(4x^3 + 3x^2y - 9xy^2 + 2y^3)$ and $(x^2 + xy - 2y^2)$ is :

(A) $(x - 2y)$

(B) $(x - y)$

(C) $(x + 2y)(x - y)$

(D) $(x - 2y)(x - y)$

89. If 20 men working 7 hours a day can do a piece of work in 10 days, in how many days will 15 men working for 8 hours a day do the same piece of work ?

(A) $\frac{320}{21}$ days

(B) $\frac{35}{3}$ days

(C) $\frac{105}{16}$ days

(D) $\frac{21}{5}$ days

90. A owes B, ₹ 1120 payable 2 years hence and B owes A, ₹ 1081.50 payable 6 months hence. If they decide to settle their accounts forthwith by payment of ready money and the rate of interest be 6% per annum, then who should pay and how much :

(A) A, ₹ 50

(B) B, ₹ 50

(C) A, ₹ 70

(D) B, ₹ 70

Section D — Basic Mathematics

Choose the most appropriate option.

(Q.No. 91 to 120)

91. The minute hand is 10 cm long. Find the area of the face of the clock described by the minute hand between 9 a.m and 9 : 35 a.m.

(A) 183.3 cm^2
(B) 366.6 cm^2
(C) 244.4 cm^2
(D) 188.39 cm^2

92. Determine $a + b$ such that the following system of equations :

$$\begin{aligned} 2x - (a - 4)y &= 2b + 1 \quad \& \\ 4x - (a - 1)y &= 5b - 1 \end{aligned}$$
 infinite solutions.

(A) 11
(B) 9
(C) 10
(D) 8

93. The line $x + y = 4$ divides the line joining $(-1, 1)$ & $(5, 7)$ in the ratio $\lambda : 1$ then the value of λ is :

(A) 2
(B) 3
(C) $\frac{1}{2}$
(D) 1

94. Which of the following statement is false ?

Statement (i) : $\frac{501}{25}$ is a terminating decimal.

Statement (ii) : $\frac{6805}{27 \times 5^2}$ is a non-terminating decimal.

Statement (iii) : $\frac{621}{125}$ is a non-terminating decimal.

Statement (iv) : $\frac{7105}{7 \times 5^2}$ is a terminating decimal.

(A) Statement (iii)
(B) Statement (ii)
(C) Statement (iv)
(D) Statement (i)

95. The value of

$$\frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \dots + \frac{1}{90} \text{ is :}$$

(A) $\frac{1}{5}$
(B) $\frac{2}{5}$
(C) $\frac{3}{5}$
(D) 1

96. In a triangle XYZ, P and Q are points on XY, XZ respectively such that $XP = 2PY$, $XQ = 2QZ$, then the ratio, of area of $\triangle XPQ$ and area of $\triangle XYZ$ is :

(A) 4 : 9
(B) 2 : 3
(C) 3 : 2
(D) 9 : 4

97. If θ is an acute angle and $\tan\theta + \cot\theta = 2$, Find the value of $\tan^7\theta + \cot^7\theta$.

- (A) -2
- (B) 1
- (C) 2
- (D) 0

98. If $x = \cos 1^\circ \cdot \cos 2^\circ \cdot \cos 3^\circ \dots \cos 89^\circ$ and $y = \cos 2^\circ \cos 6^\circ \cos 10^\circ \dots \cos 86^\circ$ then what the integer is nearest to

$$\frac{2}{7} \log_2 \left(\frac{y}{x} \right) \text{ is :}$$

- (A) 19
- (B) 17
- (C) 15
- (D) 21

99. sum of roots of the equation

$$\frac{3x^3 - x^2 + x - 1}{3x^3 - x^2 - x + 1} = \frac{4x^3 + 7x^2 + x + 1}{4x^3 + 7x^2 - x - 1} \text{ is :}$$

- (A) 0
- (B) 1
- (C) -1
- (D) 2

100. Let $(x_1, 4)$, $(-2, y_1)$ lies on the line joining the points $(2, -1)$, $(5, -3)$ then the point $P(x_1, y_1)$ lies on the line :

- (A) $6(x + y) - 25 = 0$
- (B) $2x + 6y + 1 = 0$
- (C) $2x + 3y - 6 = 0$
- (D) $6(x + y) + 25 = 0$

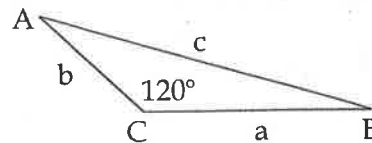
101. The expression $\frac{\tan A}{1 - \cot A} + \frac{\cot A}{1 - \tan A}$ can be written as :

- (A) $\sin A \cos A + 1$
- (B) $\sec A \operatorname{cosec} A + 1$
- (C) $\tan A + \cot A$
- (D) $\sec A + \operatorname{cosec} A$

102. A conical tent is to accommodate 10 persons. Each person must have 6 m^2 space to sit and 30 m^3 of air to breath. What will be height of cone ?

- (A) 37.5 m
- (B) 150 m
- (C) 75 m
- (D) 15 m

103. Two persons start walking on a road that diverge at an angle of 120° . If they walk at the rate of 3 km/h and 2 km/h respectively.



Find the distance between them after 4hrs.

- (A) $4\sqrt{19} \text{ km}$
- (B) 5 km
- (C) 7 km
- (D) $8\sqrt{19} \text{ km}$

104. The sum of the squares of the fifth and the eleventh term of an AP is 3 and the product of the second and fourteenth term is equal to x . Find the product of the first and fifteenth term of an AP.

(A) $\frac{(58x-39)}{45}$

(B) $\frac{(98x+39)}{72}$

(C) $\frac{(116x-39)}{90}$

(D) $\frac{(98x-39)}{90}$

105. The simplified form of

$$\left[\left(\left(\frac{a+1}{a-1} \right)^2 + 3 \right) \div \left(\left(\frac{a-1}{a+1} \right)^2 + 3 \right) \right] \div \left(\frac{a^3+1}{a^3-1} \right) - \frac{2a}{a-1}$$

is:

(A) $a-1$

(B) $1-a$

(C) -1

(D) 1

106. If $\operatorname{Cosec} \theta - \sin \theta = 1$ and $\sec \theta - \cos \theta = m$, then $l^2 m^2 (l^2 + m^2 + 3)$ equals to :

(A) 1

(B) 2

(C) $2 \sin \theta$

(D) $\sin \theta \cos \theta$

107. If m_1 and m_2 are the roots of equation $x^2 + (\sqrt{3}+2)x + \sqrt{3}-1=0$ then the area of the triangle formed by the lines $y=m_1x$, $y=m_2x$, $y=c$ is :

(A) $\left(\frac{\sqrt{33} + \sqrt{11}}{4} \right) c^2$

(B) $\left(\frac{\sqrt{32} + \sqrt{11}}{16} \right) c$

(C) $\left(\frac{\sqrt{33} + \sqrt{10}}{4} \right) c^2$

(D) $\left(\frac{\sqrt{33} + \sqrt{21}}{4} \right) c^3$

108. If $8v-3u=5uv$ & $6v-5u=-2uv$ then $31u+46v$ is :

(A) 44

(B) 42

(C) 33

(D) 55

109. If $x = \frac{\sqrt{10}+\sqrt{2}}{2}$, $y = \frac{\sqrt{10}-\sqrt{2}}{2}$ then the value of $\log_2 (x^2 + xy + y^2)$ is :

(A) 0

(B) 1

(C) 2

(D) 3

110. If a clock strikes once at one o'clock, twice at two o'clock and twelve times at 12 o'clock and again once at one o'clock and so on, How many times will the bell be struck in the course of 2 days ?

- (A) 156
- (B) 312
- (C) 78
- (D) 288

111. Find the number of numbers between 300 to 400 (both included) that are not divisible by 2, 3, 4 and 5.

- (A) 50
- (B) 33
- (C) 26
- (D) 17

112. If $S_1, S_2, S_3, \dots, S_m$ are the sum of first n terms of m arithmetic progressions, whose first terms are 1, 4, 9, 16, \dots, m^2 and common differences are 1, 2, 3, 4, \dots, m respectively, then the value of $S_1 + S_2 + \dots + S_m$ is :

- (A) $\frac{mn(m+1)}{2}$
- (B) $\frac{mn(2m+1)}{3}$
- (C) $\frac{mn[3(m+1)+1]}{6}$
- (D) $\frac{mn(m+1)(4m+3n-1)}{12}$

113. ₹ 6500/- were divided among a certain number of persons. If there had been 15 more persons, each would have got ₹ 30/- less. Find the original number of persons.

- (A) 50
- (B) 60
- (C) 45
- (D) 55

114. A cylindrical box of radius 5 cm contains 10 solid spherical balls each of radius 5 cm. If the topmost ball touches the upper cover of the box, then the volume of the empty space in the box is:

- (A) $\frac{2500\pi}{3}$ cubic cm
- (B) 500π cubic cm
- (C) 2500π cubic cm
- (D) $\frac{5000\pi}{3}$ cubic cm

115. If $x + y + z = 2$, $xy + yz + zx = -1$ then the value of $x^3 + y^3 + z^3$ is :

- (A) 20
- (B) 16
- (C) 8
- (D) 0

116. A, B, C are three towns forming a triangle. A man has to walk from one town to next town, then ride to the next town then again drive towards his starting point. He can walk, ride, drive a km in a, b, c minutes respectively. If he starts from B, he takes $a - b + c$ hrs, if he starts from C he takes $b + a - c$ and if he starts from A he takes $c + b - a$ hrs. The length of the triangle is : (assume the motion in anticlockwise direction)
- (A) $60a$
 (B) $50a$
 (C) $40a$
 (D) $65a$
117. In a bangle shop. If the shopkeeper displays the bangles in the form of a square then he is left with 38 bangles. If he wanted to increase the size of square by one bangle each side of the square he found that 25 bangles fall short of in completing the square. The actual number of bangles which he had with him the shop was _____.
- (A) 1690
 (B) 999
 (C) 538
 (D) 1000
118. The price of an article was increased by $p\%$, later the new price was decreased by $p\%$. If the last price was Re.1 then the original price was :
- (A) $\frac{1-p^2}{200}$
 (B) $\frac{\sqrt{1-p^2}}{100}$
 (C) $1 - \frac{p^2}{10,000-p^2}$
 (D) $\frac{10,000}{10,000-p^2}$
119. If $(-4, 0)$, $(1, -1)$ are two vertices of a triangle whose area is 4 Sq units then its third vertex lies on :
- (A) $y = x$
 (B) $5x + y + 12 = 0$
 (C) $x + 5y - 4 = 0$
 (D) $x - 5y + 4 = 0$
120. A charitable trust donates 28 different books of Maths, 16 different books of science and 12 different books of social science to poor students. Each student is given maximum number of books of only one subject of their interest and each student got equal number of books. Find the total number of students who got books.
- (A) 14
 (B) 10
 (C) 12
 (D) 15

Section E — Attitude And Leadership

Choose the most appropriate option.

(Q.No. 121 to 150)

121. The more leaders are admired and respected, the more members _____ their behavior.

- (A) Resent
- (B) Admire
- (C) Imitate
- (D) Endorse

122. Research suggests that to change health habits through persuasion, we should alter people's attitudes toward :

- (A) specific health practices
- (B) the general concept of "health fitness"
- (C) health authorities
- (D) the value of life itself

123. The most successful early trait theories focused on _____.

- (A) traits of famous leaders
- (B) traits of followers
- (C) traits associated with leadership
- (D) traits with distinguish leaders from non-leaders

124. Which component of attitudes consists of a consumer's beliefs about an object ?

- (A) affective
- (B) cognitive
- (C) factual
- (D) behavioral

125. Which of the following is a technique for measuring attitudes ?

- (A) self-monitoring pipeline
- (B) foot-in-the-door phenomenon
- (C) low-ball technique
- (D) bogus pipeline

126. _____ people readily adjust their behavior in response to external circumstances.

- (A) Self-monitoring
- (B) Depressed
- (C) Unintelligent
- (D) Elderly

127. According to self-perception theory, behavior shapes attitudes :

- (A) only of self-monitoring people
- (B) when behavior is inconsistent with attitudes
- (C) when attitudes are weak and ambiguous
- (D) only in the area of politics and religion

128. The tendency for oppressors to disparage their victims is given in the text as an example of :

- (A) how attitudes determine behavior
- (B) how behavior determines attitudes
- (C) the low-balling effect
- (D) how role playing comes to shape one's self-identity

129. A person in a group that is elected or appointed to a leadership position is called a :

- (A) leader
- (B) designated leader
- (C) referent leader
- (D) expert leader

130. Leaders are _____.

- (A) Individual people, while leadership is a process
- (B) the first step in the leadership process
- (C) individual people who study the leadership process
- (D) the final step in the leadership process

131. Leadership today is increasingly associated with the concept of _____?

- (A) Control
- (B) Strategy
- (C) Command
- (D) Getting others to follow

132. Legitimate power in leadership stems from :

- (A) organizational authority
- (B) a role acknowledged by the followers
- (C) leadership skills
- (D) identification with other leaders

133. The theory that states we adopt certain attitudes in order to justify our past actions is _____ theory.

- (A) cognitive dissonance
- (B) self-presentation
- (C) self-perception
- (D) psychological reactance

134. All of the following are examples of a participative leadership style except :

- (A) Consultative leadership
- (B) Democratic leadership
- (C) Autocratic leadership
- (D) Ideological leadership

135. Human communication that modifies the attitudes and behaviors of others in order to meet group goals and needs is the definition of :

- (A) Leadership
- (B) A leader
- (C) Group goals
- (D) Group dynamics

136. The promise of behavioral theories of leadership held that this would be possible :

- (A) picking a leader out of the crowd
- (B) being able to train a person to be a leader
- (C) explaining why successful leaders are so successful
- (D) Eliminating ineffective leaders

137. Which function of attitudes serves to express an individual's central values and self-concept ?

- (A) knowledge function
- (B) value-expressive function
- (C) utilitarian function
- (D) ego-defensive function

138. _____ is/are the determining factor on whether a leader is charismatic or not :

- (A) The self-confidence of the leader
- (B) Being a people person
- (C) The perceptions of the people being led
- (D) The risks the leader takes

139. SAM (Self-Assessment Manikin) is used to assess which component of attitude ?

- (A) cognitive
- (B) affective
- (C) behavioral
- (D) orientation

140. The capacity to influence people and accomplish desired objectives is called :

- (A) Power
- (B) Leadership
- (C) Authority
- (D) Status

141. Based on recent social-psychological research, which of the following statements is true ?

- (A) our attitudes and our behavior are unrelated
- (B) our attitudes determine our behavior but our behavior does not determine our attitudes
- (C) our behavior determines our attitudes but our attitudes do not determine our behavior
- (D) under certain circumstances attitudes do predict behavior

142. Feelings or emotional reactions to an object reflect the _____ component of an attitude.

- (A) knowledge
- (B) cognitive
- (C) affective
- (D) behavioral

143. Which source of power comes from what others believe a member knows or can do ?

- (A) Expert Power
- (B) Referent Power
- (C) Legitimate Power
- (D) Designated Power

144. Which of the following types of leader is most likely to say whatever the group does is fine with him or her ?

- (A) laissez-faire leaders
- (B) democratic leaders
- (C) autocratic leader
- (D) designated leaders

145. All of the following are traits of managers who exhibit openness to experience except :

- (A) Imaginative
- (B) Narrow-minded
- (C) Curious
- (D) Artistically Sensitive

146. Appropriate leader behaviors in a group are shaped by the _____ of the group

- (A) Traits
- (B) Needs
- (C) Behaviour
- (D) Style

147. According to the text, our attitudes will predict our behavior if :

- (A) we are made aware of social norms
- (B) the attitudes are unrelated to central values
- (C) as we act, we are conscious of our attitudes
- (D) we feel anxious or insecure

148. Which component of attitude represents one's tendency to respond in a certain manner toward an object or activity ?

- (A) cognitive
- (B) affective
- (C) behavioral
- (D) personality

149. _____ consists of trustworthiness and expertise.

- (A) A two-sided message
- (B) The two routes to persuasion
- (C) Message appeal
- (D) Source credibility

150. The "ABC's of attitudes" refers to :

- (A) aptitudes, brainwashing, and cognition
- (B) attraction, behavior, and compliance
- (C) affect, behavior, and cognition
- (D) affect, bogus pipeline, and cognitive dissonance

- o o o -