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SSC COMBINED GRADUATE LEVEL EXAM 2016

PART-A : GENERAL INTELLIGENCE & REASONING

DIRECTIONS (Qs. 1-3) : Select the related word/letters/numbers from the given alternatives:

1. Medicine : Patient :: Education : ?
(a) Teacher (b) School
(c) Student (d) Tuition
2. LAMP : IXJM :: FISH : ?
(a) CGPF (b) CFQE
(c) CFPE (d) CGQF
3. 13 : 20 :: 17 : ?
(a) 25 (b) 26
(c) 27 (d) 28

DIRECTIONS (Qs. 4-6) : Find the odd word/letter/ number from the given alternative.

4. (a) Rival (b) Opponent
(c) Foe (d) Ally
5. (a) POCG (b) KLIZ
(c) BUDX (d) FQMV
6. (a) 36-48 (b) 56-44
(c) 78-66 (d) 33-64
7. Arrange the following words as per order in the dictionary
1. Ambitions 2. Ambiguous
3. Ambiguity 4. Animation
5. Animal
(a) 3, 2, 4, 1, 5 (b) 3, 2, 5, 4, 1
(c) 3, 2, 1, 5, 4 (d) 3, 2, 4, 5, 1
8. A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series. CAT, DBT, ECT, ?
(a) DCT (b) FDT
(c) FCT (d) FAT
9. A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series. 5, 11, 24, 51, 106, ____?
(a) 122 (b) 217
(c) 120 (d) 153
10. Showing a man on the stage, Rita said, " He is the brother of the daughter of the wife of my husband. How is the man on stage related to Rita ?
(a) SON (b) HUSBAND
(c) COUSIN (d) NEPHEW
11. The age of Dr. Pandey is four times the age of his son. After 10 years, the age of Dr. Pandey will be twice the age of his son. The present age of Dr. Pandey's son is

- (a) 4 years (b) 5 years
(c) 6 years (d) 8 years
12. From the given alternative words, select the word which cannot be formed using the letters of the given word:

INTELLIGENCE

- (a) CANCEL (b) NEGLECT
(c) GENTLE (d) INCITE
13. If C is coded 3, DASH is coded as 32, then DANCE will be coded as
(a) 20 (b) 25
(c) 26 (d) 27
14. If '+' means minus, '-' means multiplication, '÷' means plus, and 'x' means division, then $15 - 3 + 10 \times 5 \div 5$
(a) 52 (b) 48
(c) 22 (d) 5
15. A certain system is followed to solve the problem. Accordingly find out the correct answer from the alternatives for the unsolved equations.
 $7 \times 4 \times 9 = 479$
 $9 \times 5 \times 2 = 592$
 $6 \times 9 \times 5 = 965$
 $8 \times 6 \times 2 = ?$
(a) 286 (b) 682
(c) 628 (d) 268
16. Find the missing number from the given alternatives

7	10	5
16	40	8
15	?	9

- (a) 75 (b) 45
(c) 20 (d) 30
17. Sanmitra walked 8 m towards the north. He turned to his right and walked 16 m, then he turned to his left and walked 5 m and again he turned to his left and walked 16 m. In which direction is he from his starting point?
(a) South (b) East
(c) North (d) West
18. Consider the given statement/s to be true and decide which of the given conclusions/assumptions can definitely be drawn from the given statement.

Statements :

1. Some teacher are followers.
2. Some followers are famous.

Conclusions :

- I. Some teachers are famous.

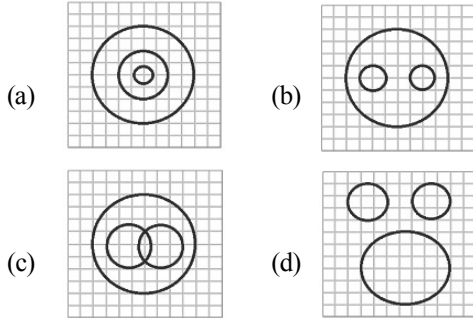
- II. Some followers are teachers.
 (a) Only conclusion I follows
 (b) Only conclusion II follows
 (c) Both conclusion I and II follows
 (d) Neither conclusion I nor II follows

19. How many triangles are there in the question figure?



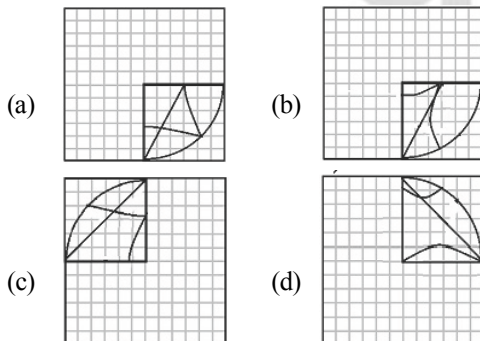
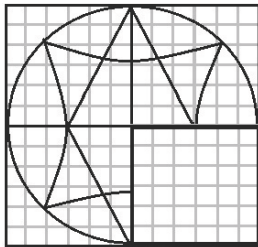
- (a) 18 (b) 24
 (c) 28 (d) 30

20. Identify the diagram that best represents the relationship among classes given below
 Delhi, Sri Lanka, Asia



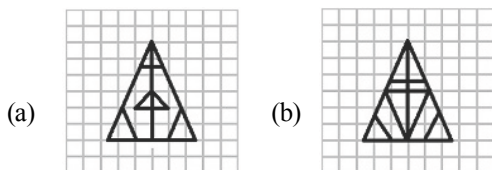
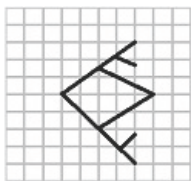
- (a) (b)
 (c) (d)

21. Which answer figure complete the pattern in the question figure?

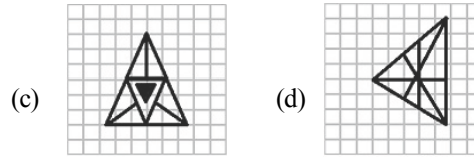


- (a) (b)
 (c) (d)

22. From the given figure, select the one in the question the figure is hidden / embedded

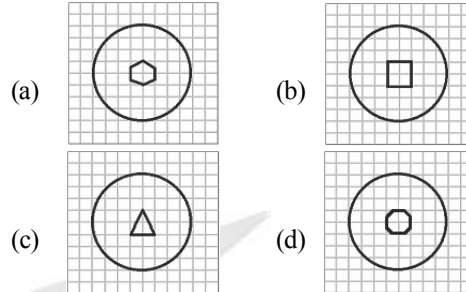
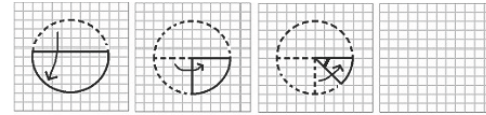


- (a) (b)



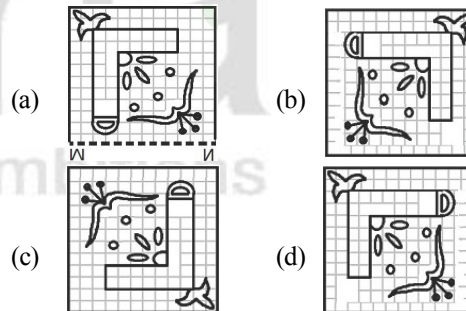
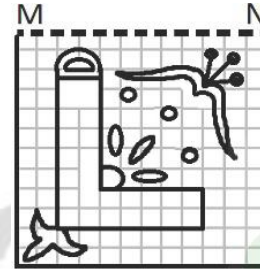
- (c) (d)

23. A piece of paper is folded and cut as shown below in the given answer figures, indicate how it will paper when opened.



- (a) (b)
 (c) (d)

24. If a mirror is placed on the line MN, then which of the answer figures is the right image of the figure?



- (a) (b)
 (c) (d)

25. In the question, a word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter in these matrix can be represented first by row and next by its column, e.g., 'A' can be represented by 01, 13, etc., and 'B' can be represented by 58, 69, etc. Similarly, you have to identify the set for the word 'FINE'

MATRIX-I

	0	1	2	3	4
0	F	A	N	O	I
1	I	O	F	A	N
2	A	N	O	I	F
3	O	F	I	N	A
4	N	I	A	F	O

MATRIX-II

	5	6	7	8	9
5	S	E	H	B	T
6	H	S	E	T	B
7	B	T	S	E	H
8	E	H	T	B	S
9	T	S	E	H	B

- (a) 00, 04, 02, 56 (b) 12, 10, 13, 67
(c) 24, 19, 31, 78 (d) 31, 32, 33, 87

PART-B : GENERAL AWARENESS

26. Who propounded the "Doctrine of Passive Resistance"?
- (a) Balgangadhar Tilak (b) Aurobindo Ghosh
(c) Lala Lajpat Rai (d) Bipin Chandra Pal
27. At Rio Olympics, what was the final position of Dipa Karmakar in her category?
- (a) 4 (b) 5
(c) 6 (d) 7
28. The 14th Finance Commission has recommended increase in States share in net proceeds from tax collection from 32% to
- (a) 35% (b) 40%
(c) 42% (d) 45%
29. Fiscal policy in India is formulated by?
- (a) Reserve Bank of India (b) Planning Commission
(c) Finance Ministry (d) SEBI
30. Which of the following has pH value 7?
- (a) Pure Water (b) H_2SO_4
(c) Sodium Carbonate (d) HCl
31. When ice cubes are made, the entropy of water
- (a) does not change
(b) decreases
(c) increases
(d) may either increase or decrease depending on the process used
32. Two vectors are said to be equal if
- (a) only their magnitudes are same
(b) only their directions are same
(c) both magnitude and direction are same
(d) magnitudes are same but directions are opposite
33. The chemical component that is invariably found in all viruses is
- (a) proteins (b) lipids
(c) DNA (d) RNA
34. Which is used as an Air pollution indicator?
- (a) Algae (b) Fungi
(c) Bacteria (d) Lichens
35. The study of mountains is known as
- (a) Oncology (b) Lithology
(c) Orology (d) Ornithology
36. Salination of soil is caused by
- (a) Pesticides (b) soil erosion
(c) excess irrigation (d) crop rotation
37. ICC World T20 in 2016 was won by
- (a) India (b) England
(c) New Zealand (d) West Indies
38. Which one of the following was established with a definite provision under an Article of the Constitution of India?
- (a) Union Public Service Commission
(b) National Human Rights Commission
(c) Election Commission
(d) Central Vigilance Commission
39. The President can advance money to meet unforeseen expenses from the
- (a) Consolidated Fund of India (b) Grants of the Central Government
(c) Aid from the Union Government
(d) Contingency Fund
40. The famous Vishnu temple at Angkor Wat in Cambodia was built by ?
- (a) Shrutavarman (b) Suryavarman II
(c) Indravarman (d) Aniruddha
41. In IT, the technique of delaying outgoing acknowledgements temporarily is known as
- (a) AR Acknowledgement (b) AR request
(c) Piggybacking (d) Piggyframing
42. If speed of rotation of the earth increases, the weight of the body
- (a) decreases
(b) increases
(c) remains the same
(d) may increase or decrease
43. Which among the following countries is facing debt crisis?
- (a) China (b) Canada
(c) Germany (d) Greece
44. The new symbol of Indian currency is designed by?
- (a) Santosh Kumar (b) Y.V. Reddy
(c) Udayakumar (d) Dr. Rangarajan
45. What is MUDRA?
- (a) Development and Refinance Agency
(b) Scheme for Agricultural Insurance
(c) New Planet Discovered
(d) Development and Regulatory Authority for Urban Township
46. Which of the following is not correctly matched?
- (a) Sania Mirza - Tennis
(b) Sania Nehwal - Badminton
(c) Mary Kom - Boxing
(d) Pankaj Advani - Wrestling
47. Which of the following State is surrounded by Bangladesh from three sides?
- (a) Nagaland (b) Assam
(c) Arunachal Pradesh (d) Tripura
48. Which enzyme digests proteins in the stomach?
- (a) Trypsin (b) Pepsin
(c) Salivary amylase (d) Pancreatic canal
49. Fermentation is a type of _____ process.
- (a) Aerobic Respiration (b) Anaerobic Respiration
(c) Exothermic Reaction (d) Transpiration
50. The first Muslim to be elected President of 'Indian National Congress' was?
- (a) Maulana Azad (b) Mohammed Ali
(c) Badruddin Tyabji (d) Shah Wali-ullah

PART-C : QUANTITATIVE APTITUDE

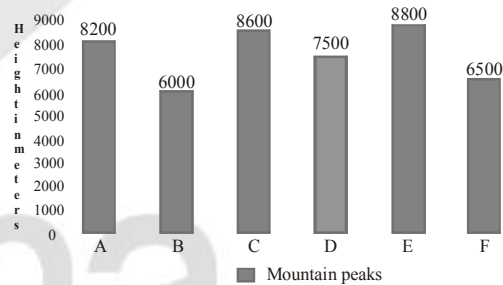
51. A, B and C contract a work for ₹ 440. Together A and B are to do 9/11 of the work. The share of C should be:
- (a) 75 (b) 90
(c) 100 (d) 80
52. A dealer marks a washing machine for ₹ 7500, and allows a discount of 6% on it. Find the selling price
- (a) 6850 (b) 7050
(c) 7250 (d) 6950
53. The sum of the cubes of two numbers in the ratio 3 : 4 is

5824. The sum of the numbers is:
 (a) $(5824)^{1/3}$ (b) 28
 (c) 24 (d) 14
54. Loss of 20% on selling price is equal to x% loss in cost price. What is x?
 (a) 20% (b) 20
 (c) $16\frac{2}{3}\%$ (d) 16
55. In a motor of 120 machine parts, 5% parts were defective. In another motor of 80 machine parts, 10% parts were defective. For the two motors considered together, the percentage of defective machine parts were
 (a) 7 (b) 6.5
 (c) 7.5 (d) 8
56. If $(2^3)^2 = 4^x$ then 3^x is equal to
 (a) 3 (b) 6
 (c) 9 (d) 27
57. A train, 200 m long, is running at a speed of 54 km/hr. The time in seconds that will be taken by train to cross a 175 m long bridge is
 (a) 12.5 (b) 20
 (c) 25 (d) 10
58. Which of the following ratios can be the ratio of the sides of a right angled triangle?
 (a) 9 : 6 : 3 (b) 13 : 12 : 5
 (c) 7 : 6 : 5 (d) 5 : 3 : 2
59. Number of circles that can be drawn through three non-collinear points is
 (a) exactly one (b) two
 (c) three (d) more than three
60. Value of $(\cos 53^\circ - \sin 37^\circ)$ is
 (a) 0 (b) 1
 (c) $2 \sin 37^\circ$ (d) $2 \cos 53^\circ$
61. If $4x + \frac{1}{x} = 5$, $x \neq 0$, then the value of $\frac{5x}{4x^2 + 10x + 1}$ is
 (a) $\frac{1}{2}$ (b) $\frac{1}{3}$
 (c) $\frac{2}{3}$ (d) 3
62. If $C + \frac{1}{C} = \sqrt{3}$, then the value of $C^3 + \frac{1}{C^3}$ is equal to
 (a) 0 (b) $3\sqrt{3}$
 (c) $\frac{1}{\sqrt{3}}$ (d) $6\sqrt{3}$
63. What least value must be assigned to '*' so that the numbers $451 * 603$ is exactly divisible by 9?
 (a) 7 (b) 8
 (c) 5 (d) 9
64. The average of 9 observations was found to be 35. Later on, it was detected that an observation 81 was misread as 18. The correct average of the observations is
 (a) 28 (b) 42
 (c) 32 (d) 45
65. If $x = 222$, $y = 223$, $z = 225$ then the value of $x^3 + y^3 + z^3 - 3xyz$ is
 (a) 4590 (b) 4690
 (c) 4950 (d) 4960
66. If $x = 3^{1/3} - 3^{-1/3}$ then $3x^3 + 9x$ is equal to
 (a) 5 (b) 6
 (c) 7 (d) 8
67. Two circles touch each other internally. The radius of the smaller circle is 6 cm and the distance between the centre of

two circles is 3 cm. The radius of the larger circle is

- (a) 7.5 cm (b) 9 cm
 (c) 8 cm (d) 10 cm
68. PQR is an equilateral triangle. MN is drawn parallel to QR such that M is on PQ and N is on PR. If PN = 6 cm, then the length of MN is
 (a) 3 cm (b) 6 cm
 (c) 12 cm (d) 4.5 cm
69. If $\operatorname{cosec} \theta + \sin \theta = 5/2$ then the value of $\operatorname{cosec} \theta - \sin \theta$ is
 (a) $-3/2$ (b) $3/2$
 (c) $-\sqrt{3}/2$ (d) $\sqrt{3}/2$
70. Two men are on opposite sides of a tower. They measure the angles of elevation of the top of the tower as 30° and 45° respectively. If the height of the tower is 50 m, the distance between the two men is (Take $\sqrt{3} = 1.7$)
 (a) 136.5 m (b) $50\sqrt{3}$ m
 (c) $100\sqrt{3}$ m (d) 135.5 m
71. The radius and the height of a cone are each increased by 20%. Then the volume of the cone increases by
 (a) 20% (b) 20.5%
 (c) 62% (d) 72.8%

DIRECTIONS (Qs. 72-75): A bar graph showing the heights of six mountain peaks. Study the bar graph and answer questions



72. The average height of all the peaks (in meters) is
 (a) 7601.5 (b) 7600
 (c) 7599.5 (d) 7610
73. Which peak is the second highest?
 (a) B (b) C
 (c) A (d) E
74. Write the ratio of the heights of the highest peak and the lowest peak
 (a) 22 : 15 (b) 15 : 22
 (c) 20 : 13 (d) 13 : 22
75. When the heights of the given peaks are written in ascending order, what is the average of the middle two peaks?
 (a) 7950 m (b) 7560 m
 (c) 7650 m (d) 7850 m

PART-D : ENGLISH LANGUAGE

DIRECTIONS (Qs. 76-77): In the following question, out of the four alternatives, choose the word which best expresses the meaning of the given word.

76. CREDULOUS
 (a) FUNNY (b) SILLY
 (c) INNOCENT (d) GULLIBLE
77. REASSURE
 (a) COMFORT (b) CONSOLE
 (c) INSPIRE (d) DISCOURAGE
78. Four words are given, out of which only one word is spelt correctly. Choose the correctly spelt word and click the button corresponding to it.

- (a) Defiance (b) Defyance
- (c) Difiance (d) Defiance

DIRECTIONS (Qs. 79-81) : In the following questions, one part of the sentence may have an error. Find out which part of the sentence has an error and click the button corresponding to it. If the sentence is free from error, click the "No error" option.

79. Too great a (A)/ variety of studies (B)/ distract the mind (C)/ No Error (D)
- (a) A (b) B
 - (c) C (d) D
80. The severe cyclonic storm (A)/ has left behind (B)/ a trial of misery (C)/ No Error (D)
- (a) A (b) B
 - (c) C (d) D
81. My sister has been (A)/ interested in medicine (B)/ ever since she was a child (C)/ No Error (D)
- (a) A (b) B
 - (c) C (d) D

DIRECTIONS (Qs. 82-84) : The sentences given with blanks are to be filled with an appropriate word(s). Four alternatives are suggested for each question. For each question, choose the correct alternative.

82. It is _____ university of excellence.
- (a) a (b) an
 - (c) also (d) one
83. They have not had much time for social activities and I have not _____.
- (a) done so (b) either
 - (c) also (d) gone
84. Food was packed, and they _____, a merry, delighted party.
- (a) went off (b) start off
 - (c) cut off (d) set off

DIRECTIONS (Qs. 85-87) : In each of the questions, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and click the button corresponding to it.

85. pull a fast one
- (a) as fast as lightning
 - (b) play a trick
 - (c) carry a heavy burden
 - (d) take a deep breath
86. Grease the palm
- (a) dirty one's hands (b) work in a garage
 - (c) slip and fall (d) bribe
87. turn turtle
- (a) slow like a turtle (b) turn like a turtle
 - (c) over-turn (d) a game turtles play

DIRECTIONS (Qs. 88-90) : Out of the four alternatives, choose the one which can be substituted for the given words/sentences and click the button corresponding to it.

88. Action that is likely to make people very angry
- (a) Inflationary (b) Inflammable
 - (c) Commensurable (d) Inflammatory
89. A humorous drawing dealing with current events or politics.
- (a) Sketch (b) Illustration
 - (c) Cartoon (d) Skit
90. Act of mercy killing
- (a) Suicide (b) Euthanasia
 - (c) Immolation (d) Asphyxiation

DIRECTIONS (Qs. 91-95) : A sentence/a part of the sentence is underlined. Four alternatives are given to the underlined part

which will improve the sentence. Choose the correct alternative and click the button corresponding to it. In case no improvement is needed, "No improvement" is the answer.

91. They have had a real good time.
- (a) have had a (b) have had really
 - (c) have had a really (d) No improvement
92. Electricity has modernized the march of modern events.
- (a) revolutionised (b) developed
 - (c) created (d) No improvement
93. The sales boy told the consumer not to touch the products on display.
- (a) buyer (b) shopper
 - (c) customer (d) No improvement
94. Please make it a point to send the letter at my address.
- (a) on (b) to
 - (c) in (d) No improvement
95. Sunil and I helped to sell tickets.
- (a) we (b) us
 - (c) me (d) No improvement

DIRECTIONS (Qs. 96-100) : A passage is given with 5 questions following it. Read the passage carefully and choose the best answer to each question out of the four alternatives and click the button corresponding to it.

To know language is to be able to speak it; even a child who does not yet attend school can speak his or her language. In order to speak a language it is important to listen to it and to read a few pages in it everyday. A child picks up language and learns to talk just as (s) he learns to walk. Walking and talking comes naturally to a child as it grows. In our country, a child may grow up speaking more than one language, if these languages are spoken in the home and in the neighbourhood. we call this multilingualism. A child speaks a language or languages much before (s)he starts going to school. To know a language then is first of all to be able to speak it as easily and naturally as a tree year old child does. Later on the child will learn to read and write in that language. In order to read and write in a language, one has to speak it. But it is possible to speak a language but not able to read or write in it. A baby does not speak until it is nine months old but it understands a few words at six months of age. It has been listening ever since it was born, and even a little before that. So the first strategy in speaking a language is to listen.

96. One of the activities of a child before it is even born is _____.
- (a) seeing (b) listening
 - (c) understanding (d) talking
97. It is necessary for one to _____ the language before (s)he writes in that language.
- (a) sing (b) spell
 - (c) speak (d) none of the above
98. Multi-lingualism means
- (a) speaking more than one language
 - (b) speaking only one language
 - (c) speaking any language
 - (d) speech
99. A child has been _____ ever since it was born
- (a) speaking (b) reading
 - (c) walking (d) listening
100. To know a language one must be able to?
- (a) Speak it as easily and naturally as a three year old child.
 - (b) Read it well all the time.
 - (c) Write it quickly
 - (d) Sing in the language

Hints & Explanations

1. (c) Medicine is given to patient similarly Education is given to student.

2. (a) L A M P
 $-3 \downarrow -3 \downarrow -3 \downarrow -3 \downarrow$
 I X J M
 F I S H
 $-3 \downarrow -3 \downarrow -3 \downarrow -3 \downarrow$
 C F P E

3. (d) As $20 = 13 \times 2 - 6$
 $\therefore 28 = 17 \times 2 - 6$

4. (d) Ally is Antonym of Remaining three.

5. (d) Only FQMV is without any Vowel

6. (d) Difference between $36 - 48$, $56 - 44$ and $78 - 64$ is 12 where as $33 - 64$ is different.

7. (c) Arrangement as per Dictionary rules is 3, 2, 1, 5, 4 i.e Ambiguity, Ambiguous, Ambitions, Animation

8. (b) $\begin{array}{ccccccc} & +1 & & +1 & & +1 & \\ & \downarrow & & \downarrow & & \downarrow & \\ C & A & T & D & B & T & E & C & T & F & D & T \\ & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow & & \uparrow \\ & +1 & & +1 & & +1 & & +1 & & +1 & & +1 \\ & +0 & & +0 & & +0 & & +0 & & +0 & & +0 \end{array}$

9. (b) $5 \times 2 + 1 = 11$
 $11 \times 2 + 2 = 24$
 $24 \times 2 + 3 = 51$
 $51 \times 2 + 4 = 106$
 $106 \times 2 + 5 = 217$

10. (a) Reeta \longrightarrow Husband
 \downarrow
 Daughter \longrightarrow Man
 That man is son of Reeta

11. (b) Age of Son = x, Age of doctor = 4x
 $4x + 10 = 2(x + 10)$
 $4x - 2x = 20 - 10$
 $2x = 10$
 $x = 5$
 Age of Son = 5 year

12. (a) CANCEL cannot be Form from INTELLIGENCE

13. (d) DASH $\Rightarrow 4 + 1 + 19 + 8 = 32$
 DANCE $\Rightarrow 4 + 1 + 14 + 3 + 5 = 27$

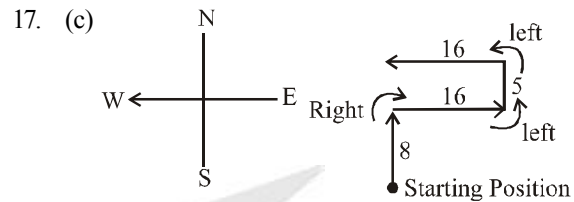
14. (b) Putting $+ = -$, $- = \times$; $\div = -$ and $\times = +$
 in $5 - 3 + 10 \times 5 \div 5$
 $\Rightarrow 15 \times 3 - 10 \div 5 + 5$
 $45 - 2 + 5 = 48$

15. (b) $\begin{array}{ccc} \overbrace{7 \times 4 \times 9} = 479, & \overbrace{9 \times 5 \times 2} = 592, & \overbrace{6 \times 9 \times 5} \\ = 965 & \overbrace{8 \times 6 \times 2} = 682 & \end{array}$

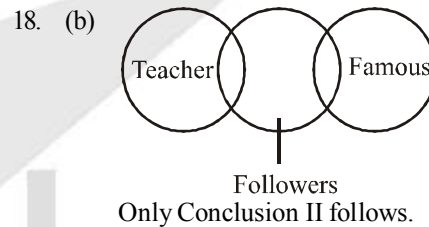
16. (d)

7	10	5
16	40	8
15	?	9

$(7 - 5) \times 5 = 10$
 $(16 - 8) \times 5 = 40$
 $(15 - 9) \times 5 = 30$



He is in north direction from starting point



19. (c)



Delhi and Srilanka both are in Asia.

21. (a) 22. (b) 23. (d) 24. (a) 25. (a)

26. (b) Doctrine of Passive Resistance is authored by Aurobindo Ghosh. It is based on a series of articles by Aurobindo Ghosh which were published in April 1907 in the journal Bande Matram. The articles were written when the Bengal was burning with indignation after its partition October 16, 1905 by Viceroy Curzon. The main theme of the articles is the methods and ideology which could be adopted in face of oppression and injustice as perpetrated by the contemporary British rule in India.

27. (a) Dipa Karmakar returned empty handed from the Vaults final at the Gymnastics event of Rio 2016 Olympics after she finished the event at fourth rank.

28. (c) 29. (c) 30. (a)

31. (b) 32. (c) 33. (a)

34. (d) Lichens can be used as air pollution indicators, especially of the concentration of sulfur dioxide in the atmosphere. Lichens are plants that grow in exposed places such as rocks or tree bark. They need to be very good at absorbing water and nutrients to grow there.

35. (c) Orology is the study of mountains. An example of orology is research on how a particular mountain came to be formed.

36. (c) Soil salinity is the salt content in the soil; the process of increasing the salt content is known as salinization. Salts occur naturally within soils and water. Salinization can be caused by natural processes such as mineral weathering or by the gradual withdrawal of an ocean.

37. (d) 38. (c) 39. (d)

40. (b) It was built by the Khmer King Suryavarman II in the early 12th century.

41. (c) 42. (a) 43. (d)

44. (d) The Indian rupee sign is the currency sign for the Indian rupee, the official currency of India. Designed by D. Udaya Kumar, it was presented to the public by the Government of India on 15 July 2010, following its selection through an "open" competition among Indian residents.

45. (a) Micro Units Development and Refinance Agency Bank (or MUDRA Bank) is a public sector financial institution in India.

46. (d) 47. (d) 48. (b) 49. (b)

50. (c) Badruddin Taiyabji became the 1st Indian Barrister in Bombay; became the 2nd Indian Chief Justice; was the founding member of Bombay presidency association and INC and also presided over the 3rd congress session in Madras in 1887.

51. (d) Remaining work = $1 - \frac{9}{11} = \frac{2}{11}$

C will get = $\frac{2}{11} \times 440 = 2 \times 40 = 80$

52. (b) Market Price = 7500, Discount = 6%

Selling Price = $\frac{94}{100} \times 7500 = 7050 \text{ ₹}$

53. (b) Let the number be $3x$ and $4x$

$$(3x)^3 + (4x)^3 = 5824$$

$$27x^3 + 64x^3 = 5824$$

$$91x^3 = 5824$$

$$x^3 = 64$$

$$x = 4$$

Sum of numbers are = $x(4 + 3) = 4 \times 7 = 28$

54. (c) Let Selling Price = 100 Loss = 20%

Cost price = 120

Loss% of cost price = $\frac{20}{120} \times 100 = 16\frac{2}{3}\%$

55. (a) Total defective part = $\frac{5}{100} \times 120 + \frac{10}{100} \times 80$
= $6 + 8 = 14$

Defective % = $\frac{14}{200} \times 100 = 7\%$

56. (d) $(2^3)^2 = 4^x$
 $2^6 = 2^{2x}$
 $6 = 2x$
 $x = 3$
 $3^3 = 27$

57. (c) Time = $\frac{\text{Distance}}{\text{Speed}}$

$$\text{Time} = \frac{200 + 175}{54 \times \frac{5}{18}} = \frac{375}{15}$$

$$= 25 \text{ sec}$$

58. (b) As only 13, 12 and 5 follows Pythagorous theorem

59. (a)

60. (a) $\cos 53^\circ - \sin 37^\circ \Rightarrow \cos 53^\circ - \sin (90^\circ - 53^\circ)$
 $\Rightarrow \cos 53^\circ - \cos 53^\circ$
 $= 0$

61. (b) $4x + \frac{1}{x} = 5$

$$\Rightarrow 4x^2 + 1 = 5x$$

$$\frac{5x}{4x^2 + 10x + 1} = \frac{5x}{10x + 5x}$$

$$\Rightarrow \frac{5x}{15x} = \frac{1}{3}$$

62. (a) $C + \frac{1}{C} = \sqrt{3}$

Cubing both Sides

$$C^3 + \frac{1}{C^3} + 3(\sqrt{3}) = 3\sqrt{3}$$

$$C^3 + \frac{1}{C^3} = 0$$

63. (b) To divide $451 * 603$ by 9

$$(4 + 5 + 1 + * + 6 + 0 + 3) = (19 + *)$$

$(19 + *)$ must be multiple of 9

$$\therefore 19 + * = 27$$

$$* = 8$$

64. (b) Average of 9 observations = 35

$$\text{Total} = 9 \times 35 = 315$$

$$\text{Misread Difference} = 81 - 18 = 63$$

$$\text{New total} = 315 + 63 = 378$$

$$\text{Average} = \frac{378}{9} = 42$$

Shortcut Method:

$$81 - 18 = 63$$

$$\therefore \frac{63}{9} = 7$$

$$35 + 7 = 42$$

65. (b) $x^3 + y^3 + z^3 - 3xyz = \frac{1}{2}(x + y + z)$

$$[(x - y)^2 + (y - z)^2 + (z - x)^2]$$

$$= \frac{1}{2}(222 + 223 + 225)$$

$$[(222 - 223)^2 + (223 - 225)^2 + (225 - 222)^2]$$

$$\Rightarrow \frac{1}{2}[670][1 + 4 + 9] = 335 [14] = 4690$$

66. (d) $x = 3^{1/3} - 3^{-1/3}$

Cubing on both sides

$$x^3 = 3 - \frac{1}{3} - 3(3)\frac{1}{3} - \frac{1}{3}[3^{1/3} - 3^{-1/3}]$$

$$x^3 = 9 - \frac{1}{3} - 3(x)$$

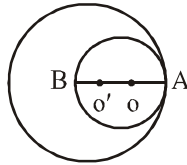
$$x^3 + 3x = \frac{9-1}{3}$$

$$3x^3 + 9x = 8$$

67. (b) $O'O = 3$

$$OA = 6$$

$$O'A = 6 + 3 = 9 \text{ cm}$$

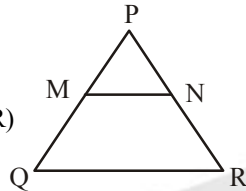


68. (b) In Given equilateral Δ , $MN \parallel QR$

$$\frac{PN}{PQ} = \frac{MN}{QR}$$

$$PN = MN \because (PR = QR)$$

$$MN = 6 \text{ cm}$$



69. (b) $\operatorname{cosec} \theta + \frac{1}{\operatorname{cosec} \theta} = \frac{5}{2}$

Squaring on both sides

$$\operatorname{cosec}^2 \theta + \frac{1}{\operatorname{cosec}^2 \theta} + 2 = \frac{25}{4}$$

$$\operatorname{cosec}^2 \theta + \frac{1}{\operatorname{cosec}^2 \theta} + 2 - 4 = \frac{25}{4} - 4$$

$$\operatorname{cosec}^2 \theta + \frac{1}{\operatorname{cosec}^2 \theta} - 2 = \frac{169}{4}$$

$$(\operatorname{cosec} \theta - \sin \theta) = \frac{169}{4}$$

$$(\operatorname{cosec}^{\circ} \theta - \sin^{\circ} \theta) = \frac{165}{4}$$

$$\operatorname{cosec} \theta - \sin \theta = \frac{3}{2}$$

70. (a) In ΔADC

$$AC = 50 \text{ m}$$

$$\frac{AC}{DC} = \tan 30^{\circ}$$

$$\frac{50}{DC} = \frac{1}{\sqrt{3}}$$

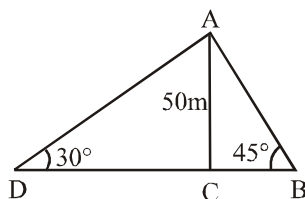
$$DC = 50\sqrt{3}$$

in ΔABC

$$\frac{AC}{BC} = \tan 45^{\circ}$$

$$BC = 50$$

$$BD = 50 + 50\sqrt{3}$$



$$= 50(1 + \sqrt{3})$$

$$= 50(2.73) = 136.5 \text{ m}$$

71. (d) Let radius and height of cone = 100
New radius and height of cone = 120

$$\text{Ratio} = \frac{120}{100} = \frac{6}{5}$$

$$\text{Volume Ratio} = \left(\frac{6}{5}\right)^3 = \frac{216}{125}$$

$$\text{Difference} = 216 - 125 = 91$$

$$\text{Difference \%} = \frac{91}{125} \times 100 = 91 \times \frac{4}{5}$$

$$= \frac{364}{5} = 72.8\%$$

72. (b) Average = $\frac{8200 + 6000 + 8600 + 7500 + 8800 + 6500}{6}$
 $= 7600$

73. (b)

74. (a) Highest peak = 8800
lowest peak = 6000

$$\text{Ratio} = \frac{8800}{6000} = 22 : 15$$

75. (d) Ascending order 6000, 6500, 7500, 8200, 8600, 8800

$$\text{Middle two average} = \frac{7500 + 8200}{2}$$

$$= \frac{15700}{2} = 7850 \text{ m}$$

76. (d) Credulous- having or showing too great a readiness to believe things.

Gullible- easily persuaded to believe something.

77. (d) Reassure-say or do something to remove the doubts and fears of (someone).

Discourage- cause (someone) to lose confidence or enthusiasm.

78. (d) Here variety, the main nation, is Singular in form. If the writer intends it for a collective Noun, he may reasonably use the Plural distract. But it seems better to treat variety as a quality and therefore really Singular, in which case the verb should be distract. At all events the Plural studies, being only part of a secondary Noun-phrase, does not excuse the Plural distract.

79. (c) 80. (b) 81. (d)

82. (a) 83. (b) 84. (d)

85. (b) pull a fast one- to succeed in an act of deception.

86. (d) grease somebody's palm also grease the palm of somebody- to give someone money to persuade them to do what you want.

87. (c) turn turtle- to turn upside down.

88. (d) 89. (c) 90. (b) 91. (b) 92. (a)

93. (c) 94. (b) 95. (d) 96. (b) 97. (c)

98. (a) 99. (d) 100. (a)