GENERAL INTELLIGENCE & REASONING

1. Seven persons A, B, C, D, E, F and G are standing in a straight line.
   D is to the right of G.
   C is between A and B.
   E is between F and D.
   There are three persons between G and B.
   Who is on the extreme left?
   (A) A   (B) B   (C) D   (D) G

2. From the given alternative words, select the word which cannot be formed using the letters of the given word:
   CUMBERSOME
   (A) MOUSE   (B) SOBER
   (C) ROME   (D) MERCY

3. Name a single letter, which can be prefixed to the following words in order to obtain entirely new words?
   TILL TABLE PILE TAB PRING
   (A) S   (B) B   (C) H   (D) C

4. Unscramble the following letters to frame a meaningful word. Then find out the correct numerical position of the letters:
   B C U S M E L R N A
   1 2 3 4 5 6 7 8 9 10
   (A) 6 1 4 3 2 5 8 7 9 10
   (B) 3 1 5 7 10 4 2 6 9 8
   (C) 3 9 4 2 8 10 5 1 7 6
   (D) 2 1 3 4 6 8 9 7 5 10

5. Using the following code and key decode the given coded word:
   Code: L X P Z J Y Q M N B
   Key : b a e s p r h i g t
   Coded word : ZBYXMNQB
   (A) height   (B) struggle
   (C) straight   (D) strength

6. In a certain code "MOUSE" is written as "PRUQC". How is "SHIFT" written in that code?
   (A) VJIDR   (B) VIKRD
   (C) RKIVD   (D) VKIDR

7. In a certain code, '253' means 'books are old'; '546' means 'man is old' and '378' means 'buy good books'. What stands for "are" in that code?
   (A) 2   (B) 4   (C) 5   (D) 6

8. If, + stands for division; × stands for addition; − stands for multiplication; ÷ stands for subtraction, which of the following is correct?
   a. $46 × 6 ÷ 4 − 5 + 3 = 74$
   b. $46 − 6 + 4 × 5 ÷ 3 = 71$
   c. $46 ÷ 6 × 4 − 5 + 3 = 75.5$
   d. $46 × 6 − 4 + 5 ÷ 3 = 70.1$
   (A) d   (B) b   (C) a   (D) c

9. If $+ = ×$, $− = ÷$, $× = +$, $÷ = −$, then which is the correct equation out of the following?
   (A) $18 ÷ 6 + 4 − 2 ÷ 3 = 22$
   (B) $18 + 6 − 4 × 2 ÷ 3 = 26$
   (C) $18 × 6 − 4 + 7 × 8 = 47$
   (D) $18 − 6 × 7 ÷ 2 + 8 = 63$

Directions : In the following **Five** Questions, select the missing number from the given responses.

10.

   (A) 97   (B) 907   (C) 1097   (D) 9107

11.

   (A) 12   (B) 17   (C) 18   (D) 16

12.
9	11	13
13	15	17
10	12	14
14	16	18
11	13	?

   (A) 22   (B) 14   (C) 15   (D) 21

SPACE FOR ROUGH WORK

13.

3	2
4	24

2	-1
-2	4

6	5
0	?

(A) 30   (B) 11   (C) 0   (D) 1

14.
```
  7    5    3
  8    4    9
  2    8    ?
112  160  162
```
(A) 4   (B) 6   (C) 8   (D) 12

15. Pinky walks a distance of 600 mtr. towards east, turns left and moves 500 mtr, then turns left and walks 600 mtr. and then turns left again and moves 500 mtr and halts. At what distance in metres is she from the starting point?
(A) 2200 (B) 500   (C) 0   (D) 600

16. Sunita rode her scooty northwards, then turned left and then again rode to her left 4 km. She found herself exactly 2 kms west of her starting point. How far did she ride northwards initially?
(A) 2 km (B) 4 km (C) 5 km (D) 6 km

Directions : In the following **Two** Questions, one statement is given followed by two Conclusions, I and II. You have to consider the statement to be true, even if it seems to be at variance from commonly known facts. You are to decide which of the given conclusions can definitely be drawn from the given statement. Indicate your answer.

17. Statement : Every school should promote partnerships that will increase parental involvement and participation for promoting the growth of children.
Conclusions I : For the growth of the children, parents should be involved in various school activities.
       II : Involvement of parents in school activities has no influence on the growth of the children.
(A) Only I follows
(B) Only II follows
(C) Neither I nor II follows
(D) Both I and II follow

18. Statement : Aggressive animals can be trained with care and affection to behave as the occassion demands.
Conclusions I : Trained dogs cannot be aggressive.
       II : Animals are always aggressive unless care and affection is given to them.
(A) Only I follows.
(B) Only II follows.
(C) Neither I nor II follows.
(D) Both I and II follow.

Directions : In the following **Six** Questions, select the related word/letters/number from the given alternatives.

19. Haematology : Blood : : Phycology : _?_
(A) Fungi   (B) Fishes
(C) Algae   (D) Diseases

20. Pride of Lions : : _____ of cats
(A) Herd   (B) School
(C) Clowder   (D) Bunch

21. MAN : PDQ : : WAN : _?_
(A) ZDQ (B) NAW (C) YQD (D) YDQ

22. AEFJ : KOPT : : _?_ : QUVZ
(A) GLKP   (B) GKLP
(C) HLKP   (D) HKQL

23. 2 : 32 : : 3 : _?_
(A) 243   (B) 293   (C) 183   (D) 143

24. D × H : 4 × 8 as M × Q : _?_
(A) 12 × 17   (B) 12 × 16
(C) 13 × 17   (D) 14 × 18

Directions : In the following **Six** Questions, find the odd word/ number/letters/number pair from the given alternatives.

25. (A) Morning   (B) Noon
     (C) Evening   (D) Night

26. (A) Liberty   (B) Society
     (C) Equality   (D) Fraternity

SPACE FOR ROUGH WORK

27. (A) DWFU (B) EVHS
    (C) HSKP (D) KQNN

28. (A) CBEF (B) EDGH
    (C) IHKL (D) GFHJ

29. (A) 4025 (B) 7202
    (C) 6023 (D) 5061

30. (A) 96 : 80 (B) 64 : 48
    (C) 80 : 60 (D) 104 : 78

31. Choose the correct alternative to complete the series.
    Lily, Daisy, Datura, ?
    (A) Sun Flower (B) Hibiscus
    (C) Marigold (D) Jasmine

32. Which one of the given responses would be a meaningful order of the following?
    1. Elephant   2. Cat   3. Mosquito
    4. Tiger   5. Whale
    (A) 5, 3, 1, 2, 4 (B) 1, 3, 5, 4, 2
    (C) 3, 2, 4, 1, 5 (D) 2, 5, 1, 4, 3

Directions : In the following **Two** Questions, which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?

33. ccbab_caa_bccc_a_
    (A) babb (B) bbba (C) baab (D) babc

34. a_ _dba_ _bcad_ _da_ _cd
    (A) bccdbcab (B) abcddcba
    (C) cbcddcba (D) aabbccdd

Directions : In the following **Two** Questions, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

35. 4, 6, 10, 16, 24, ?
    (A) 28 (B) 30 (C) 34 (D) 40

36. 3, 5, 9, 17, ?
    (A) 26 (B) 65 (C) 33 (D) 42

37. A train starts from station A and reaches B 15 minutes late when it moves with 40 km/hr and 24 minutes late when it goes 30 km/hr. The distance between the two stations is
    (A) 16 km (B) 18 km
    (C) 21 km (D) 24 km

38. In a row of men, Manoj is 30th from the right and Kiran is 20th from the left. When they interchange their position, Manoj becomes 35th from the right. What is the total number of men in the row?
    (A) 45 (B) 44 (C) 54 (D) 34

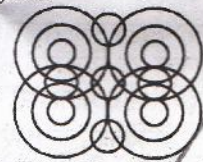39. How many triangles are there in the figure?

    (A) 24 (B) 14 (C) 28 (D) 20

40. The figure given on the left hand side is folded to form a box. Choose from the alternatives (1), (2), (3) and (4) the boxes that is similar to the box formed.
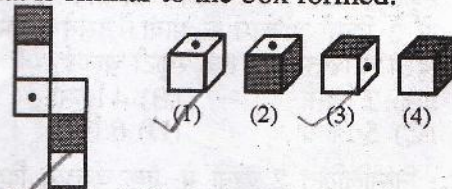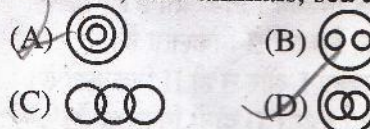
    (A) (2) and (3) only
    (B) (1), (3) and (4) only
    (C) (2) and (4) only
    (D) (1) and (4) only

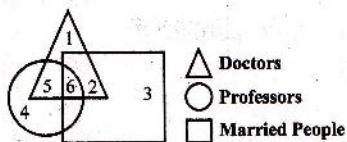41. Find out the number of circles in the given figure:

    (A) 14 (B) 16 (C) 17 (D) 18

42. Identify the diagram that best represents the relationship among the classes given below:
    Animals, land animals, sea animals
    (A) (B)
    (C) (D)

SPACE FOR ROUGH WORK

43.

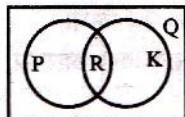Doctors — △
Professors — ○
Married People — □

Which number indicates doctors who are not married?
(A) 6   (B) 4   (C) 2   (D) 1

44.

In the fig:
Q represents all quadrilaterals
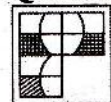K represents all Kites
R represents all Rhombus
P represents all Parallelogram
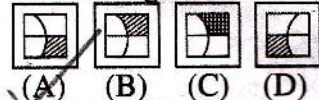The statement 'Rhombus is also a Kite' can be described as
(A) P and K is nothing but R
(B) P or K is nothing but R
(C) P and R is nothing but K
(D) P or R is nothing but K

Directions : In the following **Two Questions,** which answer figure will complete the pattern in the question figure?
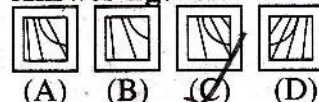
45. Question figure:

Answer figures:

(A)   (B)   (C)   (D)

46. Question figure:

Answer figures:

(A)   (B)   (C)   (D)

47. From the given answer figures, select the one which is hidden/embedded in the question figure:

Question figure:
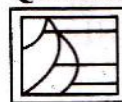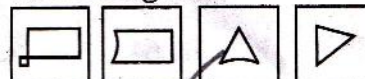
Answer figures:

(A)   (B)   (C)   (D)

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

Question figure:
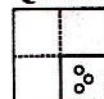
Answer figures:
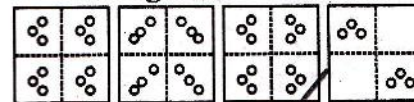
(A)   (B)   (C)   (D)

49. If a mirror is places on the line MN, then which of the answer figures is the right image of the given figure?

Question figure:

Answer figures:

(A)   (B)   (C)   (D)

SPACE FOR ROUGH WORK

50. **Direction :** 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 from these matrices can be represented first by its row and next by its column, e.g., 'A' can be represented by 01, 14 etc. and 'O' can be represented by 59, 67 etc. similarly, you have to identify the set for the word 'PEARL'

Matrix - I						Matrix - II				
	0	1	2	3	4		5	6	7	8	9
0	P	A	G	R	Z	5	E	M	L	N	O
1	G	R	Z	P	A	6	L	E	O	M	N
2	Z	P	A	G	R	7	O	N	E	L	M
3	A	G	R	Z	P	8	N	O	M	E	L
4	R	Z	P	A	G	9	M	L	N	O	E

(A) 00, 55, 22, 11, 96
(B) 00, 66, 14, 32, 56
(C) 13, 77, 30, 14, 88
(D) 12, 88, 43, 32, 89

FOR VISUALLY HANDICAPPED / CEREBRAL PALSY CANDIDATES ONLY

39. Select the related number from the given alternatives.
80 : 99 : 120 :?
(A) 143 (B) 156 (C) 169 (D) 181

40. Find the odd one out.
(A) 324 (B) 244 (C) 514 (D) 136

41. Complete the series.
E, F, H, K, __?__ , T
(A) M (B) O (C) N (D) P

42. In a particular way the word NORTH POLE is coded as ELOP HTRON, how can SOUTH POLE be written?
(A) ELOP HTUOS (B) ELOPH UOST
(C) ELOPH OUST (D) ELOPH SOUT

Directions : In the following **Two** Questions, from the given alternatives select the word which cannot be formed using the letters of the given word.

43. CONSTITUTIONAL
(A) CONSULT (B) CONSTANT
(C) TUITION (D) CONDITION

44. ORGANISATION
(A) ORGAN (B) ORIGINAL
(C) NATION (D) GAIN

45. How many 5's are there in the following number sequence which are immediately followed by 4 but not immediately preceded by 6?
8 9 5 4 2 5 4 8 5 5 7 8 6 4 4 5 6 6 5 4 7 5 4 4 6 3 8
(A) 1 (B) 2 (C) 4 (D) 3

Directions : In the following **Two** Questions, select the missing number from the given responses.

46. 26, 52, 78, __?__
(A) 91 (B) 104 (C) 65 (D) 13

47.
?	7	13
6	12	4
19	20	28

(A) 18 (B) 26 (C) 8 (D) 13

48. Rama travels 10 km towards the north, turns left and travels 4 km and then again turns right and covers another 5 km and then turns right and travels 4 km. How far is she from the starting point?
(A) 5 km (B) 10 km
(C) 15 km (D) 19 km

49. If the letters in PRABHA are coded as 275965, and TILAK are coded as 38451, how can BHARATI be coded?
(A) 8543691 (B) 9251869
(C) 8125758 (D) 9657538

50. If A is '−', B is '×', C is '+' & D is '÷', then what is the addition of 7B6C5A2 & 7A5B4D2
(A) 45 (B) 48 (C) 42 (D) 43

SPACE FOR ROUGH WORK

51. The legislature in a democratic country can influence public opinion by
    (A) Granting rights
    (B) Enacting non-controversial laws
    (C) Defining the duties of the citizens
    (D) Focusing attention on public issues

52. If the President wants to resign from his office, he may do so by writing to the
    (A) Vice President
    (B) Chief Justice of India
    (C) Prime Minister
    (D) Speaker of Lok Sabha

53. Which of the following is not a Union Territory ?
    (A) Lakshadweep
    (B) Puducherry
    (C) Nagaland
    (D) Dadra and Nagar Haveli

54. The greatest king of the Pratihara dynasty was
    (A) Bhoj (Mihir-Bhoj)
    (B) Dantidurga
    (C) Nagbhatta II
    (D) Vatsaraj

55. In 1939 Subhash Chandra Bose was elected as President of the Congress Party defeating
    (A) Jawaharlal Nehru
    (B) Maulana Abul Kalam Azad
    (C) V.B. Patel
    (D) Pattabhi Sitharamayya

56. Jallianwala incident took place at
    (A) Lucknow   (B) Surat
    (C) Amritsar   (D) Allahabad

57. Who was the founder of Lodhi dynasty ?
    (A) Sikandar Lodhi
    (B) Bahlol Lodhi
    (C) Ibrahim Lodhi
    (D) Daulat Khan Lodhi

58. Which one of the following pair is not correctly matched ?
    (A) Akbar – Todarmal
    (B) Chanakya – Chandragupta
    (C) Vikramaditya – Chaitanya
    (D) Harshvardhan – Hiuen Tsang

59. The South-East trade winds are attracted towards the Indian sub-continent in the rainy season due to
    (A) the effect of easterlies
    (B) the effect of Northern-East trade winds
    (C) the presence of low atmospheric pressure over North-West India
    (D) the development of cyclone over the equator

60. The 'graded profile' of a river course is a
    (A) smooth curve in the upper course.
    (B) smooth curve in the middle course.
    (C) smooth curve in the lower course.
    (D) smooth curve from source to mouth.

61. Sink hole is a phenomenon of _____ topography.
    (A) Desert   (B) Tundra
    (C) Karst   (D) Plain

62. Kerala is famous for the cultivation of
    1. Coconut   2. Black-pepper
    3. Rubber   4. Rice
    (A) 1, 2 and 4   (B) 2, 3 and 4
    (C) 1 and 4   (D) 1, 2 and 3

63. The longest continental Railway in the world is
    (A) Trans Siberian Railway
    (B) Canadian Pacific Railway
    (C) Canadian National Railway
    (D) Trans Atlantic Railway

64. Photoperiodism affects
    (A) Flowering
    (B) Vegetative growth
    (C) Fruiting
    (D) All of these

65. Match the following :

	I		II
A.	Ascorbic acid	1.	Photosynthetic pigment
B.	Chlorophyll	2.	Quencher
C.	Carotenoid	3.	Enzyme
D.	Superoxide dismutase	4.	Vitamin-C

	A	B	C	D
(A)	4	2	1	3
(B)	2	4	1	3
(C)	4	1	3	2
(D)	4	1	2	3

66. Allantois of Embryo helps in
   (A) respiration   (B) excretion
   (C) protection   (D) digestion

67. Which one of the following animals belongs to mollusca ?
   (A) Hare   (B) Hydra
   (C) Hyla   (D) Haliotis

68. Outside the nucleus DNA is found in
   (A) Mitochondria
   (B) Ribosome
   (C) Endoplasmic reticulum
   (D) Golgi bodies

69. Animal protein is called first class protein because it is
   (A) delicious in taste
   (B) cheaper in the market
   (C) rich in essential amino acids
   (D) easily digestible

70. It is easy to burst a gas-filled balloon with a needle than with a nail. It is because
   (A) nail exerts more pressure than needle on the balloon.
   (B) needle exerts more pressure than nail on the balloon.
   (C) gas is reactive with the needle.
   (D) nail is more longer than needle.

71. The velocity of sound in moist air is more than in dry air because the moist air has
   (A) less pressure than dry air.
   (B) more pressure than dry air.
   (C) more density than dry air.
   (D) less density than dry air.

72. X-rays can be used
   (A) to detect heart diseases.
   (B) to detect defects in precious stones and diamonds.
   (C) to detect gold under the earth.
   (D) for cutting and welding of metals.

73. Ice is packed in saw dust because
   (A) saw dust is poor conductor of heat.
   (B) saw dust is a good conductor of heat.
   (C) saw dust does not stick to the ice.
   (D) saw dust will not get melted easily.

74. What is used to identify whether a data word has an odd or even number of 1's ?
   (A) Sign bit   (B) Zero bit
   (C) Parity bit   (D) Carry bit

75. Rearranging and allocating space in memory to provide for multiple computing tasks is called
   (A) Multiprogramming
   (B) Multitasking
   (C) Memory Management
   (D) Networking

76. What happens when a drop of glycerol is added to crushed $KMnO_4$ spread on a paper ?
   (A) There is a violent explosion.
   (B) There is no reaction.
   (C) The paper ignites.
   (D) There is a crackling sound.

77. Most commonly used bleaching agent is
   (A) Alcohol   (B) Carbon dioxide
   (C) Chlorine   (D) Sodium chloride

78. The least penetrating power ray is
   (A) α-Ray   (B) β-Ray
   (C) γ-Ray   (D) X-Ray

79. Hydrogen peroxide is an effective sterilizing agent. Which one of the following product results when it readily loses active oxygen?
   (A) Water
   (B) Hydrogen
   (C) Ozone
   (D) Nasant Hydrogen

80. The maximum fixation of solar energy is done by
   (A) Bacteria   (B) Fungi
   (C) Green plants   (D) Protozoa

81. The term 'brown air' is used for
   (A) Photochemical smog
   (B) Sulfurous smog
   (C) Industrial smog
   (D) Acid fumes

82. Which of the following is FALSE with respect to rain water harvesting?
   (A) It helps raising water table.
   (B) It helps meet rising water demand.
   (C) It increases run-off losses.
   (D) It is a device of water conservation.

83. Peroxyacetyl nitrate is a
   (A) Plant hormone
   (B) Vitamin
   (C) Secondary pollutant
   (D) Acidic dye

84. Which of the following river does not originate in Indian territory?
   (A) Mahanadi   (B) Brahmaputra
   (C) Satluj   (D) Ganga

85. To whom the line 'A thing of beauty is a joy for ever' is attributed?
   (A) John Keats
   (B) Dr. Charles Dickens
   (C) Dr. Jonathan Swift
   (D) William Wordsworth

86. The birthday of which of the following leaders is celebrated as 'Teachers Day' in India?
   (A) Dr. Rajendra Prasad
   (B) S. Radhakrishnan
   (C) C. Rajgopalachari
   (D) Lala Lajpat Rai

87. The award given for outstanding performance in sports is
   (A) Bharat Ratna
   (B) Padma Shri Award
   (C) Arjuna Award
   (D) Dronacharya Award

88. Which hill station's name means 'place of the thunderbolt'?
   (A) Shillong   (B) Oottacamand
   (C) Darjeeling   (D) Gangtok

89. The ship building yard–Mazgaon Dock is located at
   (A) Kochi   (B) Kolkata
   (C) Mumbai   (D) Vishakhapatnam

90. Electric current is measured using which of the following instrument ?
   (A) Voltmeter   (B) Anemometer
   (C) Wattmeter   (D) Ammeter

91. 'Agha Khan Cup' is related with which of the following sport event ?
   (A) Cricket   (B) Hockey
   (C) Table Tennis   (D) Football

92. Where was the first conference of SAARC (South Asian Association for Regional Cooperation) held ?
   (A) Dhaka   (B) New Delhi
   (C) Colombo   (D) Kathmandu

93. Which among the following is not a Bretton Woods Institution ?
   (A) International Monetary Fund (I.M.F.)
   (B) World Bank
   (C) Organisation of Economic Cooperation and Development (O.E.C.D.)
   (D) None of these

94. Equilibrium price in the market is determined by the
   (A) equality between total cost and total revenue.
   (B) equality between average cost and average revenue.
   (C) equality between marginal cost and marginal revenue.
   (D) equality between marginal cost and average cost.

95. In the national context which of the following indicates Macro Approach ?
   (A) Sales of Bata Shoe Company
   (B) Exports of Mangoes to U.K.
   (C) Income from Railways.
   (D) Inflation in India.

96. Internal economies
   (A) arise in an economy as it makes progress.
   (B) accrue to a firm when it expands its output.
   (C) arise when there is expansion in internal trade.
   (D) arise when there is expansion in an industry.

97. One of the features of a free market economy is
   (A) public ownership of factors of production
   (B) rationing and price control
   (C) consumer's sovereignty
   (D) active state intervention

98. Gross National Product – Depreciation Allowance=?
   (A) Gross Domestic Product
   (B) Personal Income
   (C) Net National Product
   (D) Per Capita Income

99. The Panchayat Samiti remains accountable for its functions to
   (A) The Gram Panchayats and Gram Sabhas
   (B) Zilla Parishads
   (C) Anchal Panchayats
   (D) Janpad Panchayats

100. The legislature gains a priority over the executive in
   (A) A Federal Government
   (B) An Authoritarian Government
   (C) A Parliamentary Government
   (D) A Presidential Government

101. A square is inscribed in a quarter-circle in such a manner that two of its adjacent vertices lie on the two radii at an equal distance from the centre, while the other two vertices lie on the circular arc. If the square has sides of length x, then the radius of the circle is

   (A) $\dfrac{16x}{\pi+4}$ (B) $\dfrac{2x}{\sqrt{\pi}}$

   (C) $\dfrac{\sqrt{5}x}{\sqrt{2}}$ (D) $\sqrt{2}x$

102. 10% discount and then 20% discount in succession is equivalent to total discount of
   (A) 15%   (B) 30%
   (C) 24%   (D) 28%

103. The marked price of a watch was ₹720. A man bought the same for ₹550.80 after getting two successive discounts, the first being 10%. The second discount rate is
   (A) 12% (B) 14% (C) 15% (D) 18%

104. Allowing 20% and 15% successive discounts, the selling price of an article becomes ₹3,060; then the marked price will be
   (A) ₹4,400   (B) ₹5,000
   (C) ₹4,500   (D) ₹4,000

105. Eighteen years ago, the ratio of A's age to B's age was 8:13. Their present ratio's are 5:7. What is the present age of A?
   (A) 70 years   (B) 50 years
   (C) 40 years   (D) 60 years

106. 729 ml of a mixture contains milk and water in the ratio 7:2. How much more water is to be added to get a new mixture containing milk and water in the ratio 7:3?
   (A) 60 ml   (B) 71 ml
   (C) 52 ml   (D) 81 ml

107. The average weight of 15 oarsmen in a boat is increased by 1.6 kg when one of the crew, who weighs 42 kg is replaced by a new man. Find the weight of the new man (in kg).
   (A) 65   (B) 66   (C) 43   (D) 67

108. What is the Arithmetic mean of the first 'n' natural numbers?

   (A) $\dfrac{n+1}{2}$ (B) $\dfrac{n^2(n+1)}{2}$

   (C) $2(n+1)$ (D) $\dfrac{n(n+1)}{2}$

109. A shopkeeper bought 30 kg of rice at the rate of ₹70 per kg and 20 kg of rice at the rate of ₹70.75 per kg. If he mixed the two brand of rice and sold the mixture at ₹80.50 per kg, his gain is
   (A) ₹510   (B) ₹525
   (C) ₹485   (D) ₹450

110. The population of a town increases by 5% every year. If the present population is 9261, the population 3 years ago was
   (A) 5700   (B) 6000
   (C) 7500   (D) 8000

111. A farmer travelled a distance of 61 km in 9 hrs. He travelled partly on foot at the rate of 4 km/hr and partly on bicycle at the rate of 9 km/hr. The distance travelled on foot is
   (A) 17 km   (B) 16 km
   (C) 15 km   (D) 14 km

112. Walking at the rate of 4 kmph a man covers certain distance in 2 hrs 45 min. Running at a speed of 16.5 kmph the man will cover the same distance in how many minutes?
   (A) 35 min.   (B) 40 min.
   (C) 45 min.   (D) 50 min.

SPACE FOR ROUGH WORK

113. In certain years a sum of money is doubled itself at $6\frac{1}{4}\%$ simple interest per annum, then the required time will be

(A) $12\frac{1}{2}$ years   (B) 8 years

(C) $10\frac{2}{3}$ years   (D) 16 years

114. The length of the portion of the straight line $3x + 4y = 12$ intercepted between the axes is

(A) 3   (B) 4   (C) 7   (D) 5

115. The value of

$$\frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2}$$
$$\frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{3-\sqrt{8}} \text{ is}$$

(A) 0   (B) 1

(C) 5   (D) 7

116. If $m = -4$, $n = -2$, then the value of $m^3 - 3m^2 + 3m + 3n + 3n^2 + n^3$ is

(A) 124   (B) -124

(C) 126   (D) -126

117. $2x - ky + 7 = 0$ and $6x - 12y + 15 = 0$ has no solution for

(A) $k = -4$ (B) $k = 4$

(C) $k = 1$ (D) $k = -1$

118. Choose the incorrect relation(s) from the following:

(i) $\sqrt{6}+\sqrt{2} = \sqrt{5}+\sqrt{3}$

(ii) $\sqrt{6}+\sqrt{2} < \sqrt{5}+\sqrt{3}$

(iii) $\sqrt{6}+\sqrt{2} > \sqrt{5}+\sqrt{3}$

(A) (i)   (B) (ii)

(C) (i) and (iii)   (D) (ii) and (iii)

119. If $x = 332$, $y = 333$, $z = 335$, then the value of $x^3 + y^3 + z^3 - 3xyz$ is

(A) 7000   (B) 8000

(C) 9000   (D) 10000

120. If $2 + x\sqrt{3} = \dfrac{1}{2+\sqrt{3}}$, then the simplest value of x is

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

121. If $\dfrac{m-a^2}{b^2+c^2} + \dfrac{m-b^2}{c^2+a^2} + \dfrac{m-c^2}{a^2+b^2} = 3$, then the value of m is

(A) $a^2 + b^2$ (B) $a^2 + b^2 + c^2$

(C) $a^2 - b^2 - c^2$ (D) $a^2 + b^2 - c^2$

122. The measure of an angle whose supplement is three times as large as its complement, is

(A) 30°   (B) 45°   (C) 60°   (D) 75°

123. The sides of a triangle having area 7776 sq. cm are in the ratio 3:4:5. The perimeter of the triangle is

(A) 400 cm   (B) 412 cm

(C) 424 cm   (D) 432 cm

124. Two chords of length a unit and b unit of a circle make angles 60° and 90° at the centre of a circle respectively, then the correct relation is

(A) $b = \sqrt{2}a$ (B) $b = 2a$

(C) $b = \sqrt{3}a$ (D) $b = \dfrac{3}{2}a$

125. In a parallelogram PQRS, angle P is four times of angle Q, then the measure of $\angle R$ is

(A) 36°   (B) 72°   (C) 130°   (D) 144°

SPACE FOR ROUGH WORK

126. In $\triangle ABC$, a line through A cuts the side BC at D such that BD:DC=4:5. If the area of $\triangle ABD=60\,cm^2$, then the area of $\triangle ADC$ is

(A) 50 cm^2 (B) 60 cm^2

(C) 75 cm^2 (D) 90 cm^2

127. A tangent is drawn to a circle of radius 6 cm from a point situated at a distance of 10 cm from the centre of the circle. The length of the tangent will be

(A) 4 cm (B) 5 cm (C) 8 cm (D) 7 cm

128. A ship after sailing 12 km towards south from a particular place covered 5 km more towards east. Then the straightway distance of the ship from that place is

(A) 18 km (B) 15 km

(C) 13 km (D) 11 km

129. Two poles of height 7 m and 12 m stand on a plane ground. If the distance between their feet is 12 m, the distance between their top will be

(A) 13 m (B) 19 m (C) 17 m (D) 15 m

130. The maximum value of $\sin^4\theta + \cos^4\theta$ is

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

131. Find the value of
$\tan 4° \tan 43° \tan 47° \tan 86°$

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

132. The sum of four numbers is 48. When 5 and 1 are added to the first two; and 3 & 7 are subtracted from the 3rd & 4th, the numbers will be equal. The numbers are

(A) 4, 12, 12, 20 (B) 5, 11, 13, 19

(C) 6, 10, 14, 18 (D) 9, 7, 15, 17

133. The least number that should be added to 2055, so that the sum is exactly divisible by 27:

(A) 24 (B) 27 (C) 31 (D) 28

134. A and B together can do a piece of work in 6 days. If A can alone do the work in 18 days, then the number of days required for B to finish the work is

(A) 12 (B) 9 (C) 15 (D) 10

135. A pipe can fill a tank in x hours and another can empty it in y hours. They can together fill it in ($y > x$)

(A) $x - y$ (B) $y - x$

(C) $\dfrac{xy}{x-y}$ (D) $\dfrac{xy}{y-x}$

136. A tap can empty a tank in 30 minutes. A second tap can empty it in 45 minutes. If both the taps operate simultaneously, how much time is needed to empty the tank?

(A) 18 minutes (B) 14 minutes

(C) 15 minutes (D) 30 minutes

137. The perimeter of one face of a cube is 20 cm. Its volume will be

(A) 100 cm^3 (B) 125 cm^3

(C) 400 cm^3 (D) 625 cm^3

138. If the area of a circle is A, radius of the circle is r and circumference of it is C, then

(A) $rC = 2A$ (B) $\dfrac{C}{A} = \dfrac{r}{2}$

(C) $AC = \dfrac{r^2}{4}$ (D) $\dfrac{A}{r} = C$

SPACE FOR ROUGH WORK

139. If $\sin\theta + \sin^2\theta = 1$ then $\cos^2\theta + \cos^4\theta$ is equal to

(A) 1

(B) $\dfrac{\sin\theta}{\cos^2\theta}$

(C) $\dfrac{\cos^2\theta}{\sin\theta}$

(D) None

140. If a clock started at noon, then the angle turned by hour hand at 3.45 PM is

(A) $104\dfrac{1}{2}°$

(B) $97\dfrac{1}{2}°$

(C) $112\dfrac{1}{2}°$

(D) $117\dfrac{1}{2}°$

141. The numerical value of $\dfrac{\cos^2 45°}{\sin^2 60°} + \dfrac{\cos^2 60°}{\sin^2 45°} - \dfrac{\tan^2 30°}{\cot^2 45°} - \dfrac{\sin^2 30°}{\cot^2 30°}$ is

(A) $\dfrac{3}{4}$

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

(C) $\dfrac{1}{2}$

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

142. If $x\cos\theta - \sin\theta = 1$, then $x^2 + (1+x^2)\sin\theta$ equals

(A) 1   (B) −1   (C) 0   (D) 2

143. A 10 m long ladder is placed against a wall. It is inclined at an angle of 30° to the ground. The distance (in m) of the foot of the ladder from the wall is (Given $\sqrt{3} = 1.732$)

(A) 7.32   (B) 8.26   (C) 8.66   (D) 8.16

Directions : Study the following bar diagram carefully and answer the following **Four** Questions.

The number of the production of electronic items (TVs and LCDs) in a factory during the period from 2009 to 2013.
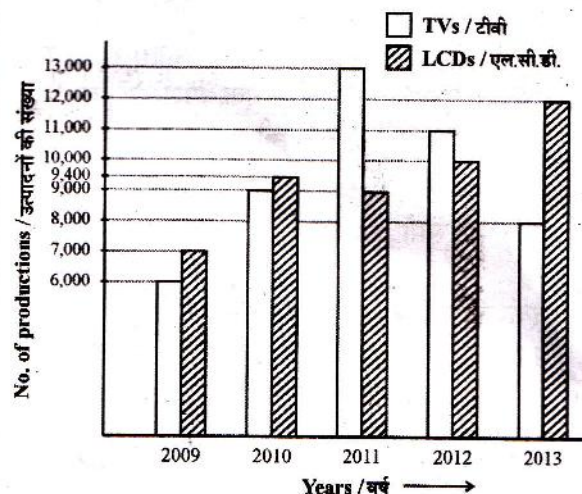
144. The total number of production of electronic items is maximum in the year

(A) 2009

(B) 2010

(C) 2011

(D) 2013

145. The ratio of production of LCDs in the year 2011 and 2013 is

(A) 3:4   (B) 4:3   (C) 2:3   (D) 1:4

146. The difference between averages of production of TVs and LCDs from 2009 to 2012 is
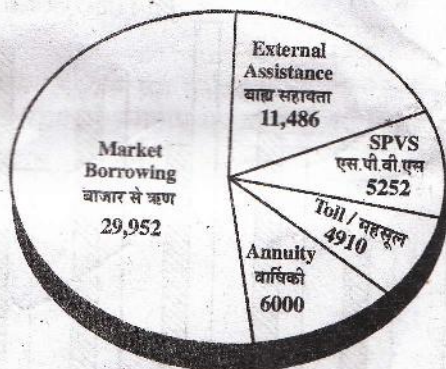
(A) 600   (B) 700   (C) 800   (D) 900

147. The ratio of production of TVs in the years 2009 and 2010 is

(A) 7:6   (B) 6:7   (C) 2:3   (D) 3:2

SPACE FOR ROUGH WORK

The following pie-chart shows the sources of funds to be collected by the National Highways Authority of India (NHAI) for its Phase II projects. Study the pie-chart and answer the following **Three Questions:**

148. If the toll is to be collected through an outsourced agency by allowing a maximum 10% commission, how much amount should be permitted to be collected by the outsourced agency, so that the project is supported with ₹4,910 crores?
    (A) ₹6,213 crores (B) ₹5,827 crores
    (C) ₹5,401 crores (D) ₹5,316 crores

149. If NHAI could receive a total of ₹9,695 crores as External Assistance, by what percent (approximately) should it increase the Market Borrowing to arrange for the shortage of funds?
    (A) 4.5%   (B) 7.5%
    (C) 6%   (D) 8%

150. The central angle corresponding to Market Borrowing is
    (A) 52°   (B) 137.8°
    (C) 187.2°   (D) 192.4°

144. Find out the wrong number in the sequence:
    190, 166, 145, 128, 112, 100, 91
    (A) 100 (B) 166 (C) 128 (D) 112

145. The largest number of 4 digits which is exactly divisible by 88 is
    (A) 9000   (B) 9999
    (C) 9944   (D) 9965

146. If the difference between an external angle of a regular polygon of n sides and an external angle of another regular polygon of (n + 1) sides is equal to 5° then the value of n is
    (A) 5   (B) 6   (C) 7   (D) 8

147. A bag contains rupee coins, fifty paise coins and twenty five paise coins in the proportion 5:6:8. If the total amount is ₹210, then the number of twenty-five paise coins is
    (A) 168 (B) 105 (C) 126 (D) 110

148. Three partners A, B, C in a business invested money such that 6 (A's capital) = 8(B's capital) = 10 (C's capital) then the ratio of their capitals is
    (A) 3:4:5   (B) 12:15:20
    (C) 20:15:12   (D) 6:8:10

149. A man covers 120 km of his journey at 60 km/h and the remaining 90 km at 30 km/h. Find the average speed during the journey
    (A) 35 km/hr   (B) 40 km/hr
    (C) 42 km/hr   (D) 45 km/hr

150. If the numerator of a fraction is increased by 20% and its denominator be diminished by 10%, the value of the fraction is $\frac{16}{21}$. The original fraction is
    (A) $\frac{3}{5}$ (B) $\frac{4}{7}$ (C) $\frac{2}{3}$ (D) $\frac{5}{7}$

SPACE FOR ROUGH WORK

Directions : In the following **Ten** Questions, a sentence/a part of the sentence is underlined. Below are given alternatives to the underlined part which may improve the sentence. Choose the correct alternative. In case no improvement is needed blacken the circle [●] corresponding to "**No improvement**".

151. It's high time that you <u>go home</u>.
    (A) are going   (B) went
    (C) gone   (D) No improvement

152. Drinking tea is an English <u>habit</u>.
    (A) tradition   (B) convention
    (C) custom   (D) No improvement

153. He <u>is wanting in a little</u> common sense.
    (A) lacks   (B) is lacking in
    (C) needs some   (D) No improvement

154. The second pigeon flew just as the first <u>pigeon had flown</u>.
    (A) one had done
    (B) one had flown away
    (C) had done
    (D) No improvement

155. The old man has <u>acquired experience</u> through age.
    (A) developed experience
    (B) experienced
    (C) got experience
    (D) No improvement

156. Water and soil pollutants find their entry into the body through <u>ingestion of contaminated</u> water or food.
    (A) digestion of contaminated
    (B) injection of contaminated
    (C) passage of contaminated
    (D) No improvement

157. He lives <u>far from the station</u>.
    (A) away from the station
    (B) a long way from the station
    (C) off the station
    (D) No improvement

158. Mumbai is famous <u>because of</u> its textiles.
    (A) at   (B) in
    (C) for   (D) No improvement

159. They <u>spoke</u> about the weather.
    (A) said   (B) talked
    (C) expressed   (D) No improvement

160. Mr. Mukherjee knows ten languages, <u>isn't it</u>?
    (A) doesn't Mr. Mukherjee
    (B) hasn't he
    (C) doesn't he
    (D) No improvement

Directions : In the following **Seven** Questions, out of the four alternatives, choose the one which can be substituted for the given words/sentences and indicate it by blackening the appropriate circle [●] in the Answer Sheet.

161. A recurrent compulsive urge to steal.
    (A) Pneumonia   (B) Insomnia
    (C) Nymphomania   (D) Kleptomania

162. Act of injuring another's reputation by any slanderous communication.
    (A) Orchestration
    (B) Aberration
    (C) Misrepresentation
    (D) Defamation

163. A story in which animals or objects speak and give wholesome moral lesson.
    (A) Fable   (B) Parable
    (C) Allegory   (D) Legend

164. Medical study of skin and its diseases.
    (A) Dermatology   (B) Endocrinology
    (C) Gynaecology   (D) Orthopaedics

165. A process involving too much official formality.
    (A) Diplomacy   (B) Bureaucracy
    (C) Red-tapism   (D) Nepotism

166. A person who enters without any invitation.
    (A) Burglar   (B) Intruder
    (C) Thief   (D) Vandal

167. Not suitable for eating
    (A) Tasteless   (B) Uneatable
    (C) Inedible   (D) Spicy

Directions : In the following **Two** Questions, four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

168. (A) Acquariam   (B) Aquarium
    (C) Acquerium   (D) Aquarim

169. (A) Facsimile   (B) Facsimilee
    (C) Fasimile   (D) Fasimmile

Directions : In the following **Ten** Questions, you have two passages with **5** questions following each passage. Read the passages carefully and choose the best answer to each question out of the four alternatives and mark it by blackening the appropriate circle [●] in the Answer Sheet.

PASSAGE – I (5 Questions)

The instinctive, natural way to express anger is to respond aggressively. Anger is a natural, adaptive response to threats; it inspires powerful, often aggressive, feelings and behaviours, which allow us to fight and to defend ourselves when we are attacked. On the other hand, we can't physically lash out at every person or object that irritates or annoys us; laws, social norms and common sense place limits on how far our anger can take us. People use a variety of both conscious and unconscious processes to deal with their angry feelings. The three main approaches are expressing, suppressing and calming. Expressing your angry feelings in an assertive – not aggressive – manner is the healthiest way to express anger. Being assertive doesn't mean being pushy or demanding; it means being respectful of yourself and others. Anger can be suppressed and then converted or redirected. This happens when you hold in your anger, stop thinking about it and focus on something positive.

170. How does a person naturally express anger?
  (A) By inspiring powerful feelings.
  (B) By responding aggressively.
  (C) By defending oneself.
  (D) By adapting strong behaviour.

171. Which one of the following places limits on how far we can take our anger?
  (A) Behaviour (B) Feelings
  (C) Instinct (D) Law

172. According to the author, how should people deal with their anger?
  (A) Express it assertively
  (B) Express it aggressively
  (C) Expressing consciously
  (D) Expressing unconsciously

173. What does the author mean by being assertive?
  (A) Being pushy (B) Being demanding
  (C) Being respectful (D) Being calm

174. How, according to the author, can one suppress anger?
  (A) By holding one's anger.
  (B) By thinking about one's anger.
  (C) By converting anger.
  (D) By redirecting anger.

PASSAGE – II (5 Questions)

The crowd surged forward through the narrow streets of Paris. There was a clatter of shutters being closed hastily by trembling hands – the citizens of Paris knew that once the fury of the people was excited there was no telling what they might do. They came to an old house which had a workshop on the ground floor. A head popped out of the door to see what it was all about "Get him! Get Thimonier! Smash his devilish machines!" yelled the crowd.

They found the workshop without its owner. M. Thimonier had escaped by the back door. Now the fury of the demonstrators turned against the machines that were standing in the shop, ready to be delivered to buyers. They were systematically broken up and destroyed – dozens of them. Only when the last wheel and spindle had been trampled under foot did the infuriated crowd recover their senses.

"That is the end of M'Sieur Thimonier and his sewing machines," they said to one another and went home satisfied. Perhaps now they would find work, for they were all unemployed tailors and seamstresses who believed that their livelihood was threatened by that new invention.

175. The passage throws light on
    (A) why inventions should be avoided.
    (B) how a well-meant invention can be misunderstood.
    (C) what mischief an inventor can do to ordinary people.
    (D) how dangerous an invention can be.

176. The crowd was protesting against
    (A) the closings of workshops.
    (B) the misdoings of Thimonier.
    (C) the newly invented sewing machine.
    (D) Thimonier for keeping the invention a secret.

177. The aim of the crowd was to
    (A) kill Thimonier
    (B) drive Thimonier away
    (C) humiliate Thimonier
    (D) destroy the sewing machines

178. The people thought that
    (A) their lives were in danger.
    (B) Thimonier was mad.
    (C) the sewing machine was dangerous.
    (D) they would be deprived of their livelihood.

179. Shutters were being closed because the shopkeepers
    (A) wanted to attack the crowd.
    (B) wanted to protect Thimonier.
    (C) feared their shops would be destroyed.
    (D) wanted to support the crowd.

Directions : In the following **Five** Questions, some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the circle [●] corresponding to the appropriate correct option. If a sentence is free from error, blacken the circle [●] corresponding to "No Error" in the Answer Sheet.

180. I shall look forward to being with you sometime next month.
    (A) I shall look forward
    (B) to being with you
    (C) sometime next month.
    (D) No error

181. I really do regret not to learn to play the violin when I had so many opportunities to learn and practice in school.
    (A) I really do regret not to learn to play the violin
    (B) when I had so many opportunities
    (C) to learn and practice in school.
    (D) No error

182. The government granted relief payments of ₹5,000 each to those who injured in the fire accident.
    (A) The government granted
    (B) relief payments of ₹5,000 each
    (C) to those who injured in the fire accident.
    (D) No error

183. By May next year I have been working in this college for twenty years.
    (A) By May next year
    (B) I have been working in this college
    (C) for twenty years.
    (D) No error

184. Everyone of us should realize that any act of negligence will cause a great harm to our country's security.
    (A) Everyone of us should realize that
    (B) any act of negligence will cause
    (C) a great harm to our country's security.
    (D) No error

Directions : In the following **Five Questions**, sentences given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four and indicate it by blackening the appropriate circle [●] in the Answer Sheet.

185. You must _____ your career with all seriousness.
    (A) follow
    (B) complete
    (C) direct
    (D) pursue

186. Making pies and cakes _____ Mrs. Reddy's speciality.
    (A) are
    (B) were
    (C) is
    (D) has

187. The deserted garden was infested _____ weeds.
    (A) for
    (B) into
    (C) on
    (D) with

188. He went there _____.
    (A) walking on foot
    (B) by foot
    (C) with foot
    (D) on foot

189. After your long illness I am happy to see you _____.
    (A) up and about
    (B) by and by
    (C) up and down
    (D) up and round

Directions : In the following **Three** Questions, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

190. Devout
    (A) Solemn
    (B) Loyal
    (C) Dedicated
    (D) Pious

191. Predilection
    (A) Favour
    (B) Whim
    (C) Prejudice
    (D) Preference

192. Effigy
    (A) Dummy
    (B) Imagery
    (C) Reflection
    (D) Organ

Directions : In the following **Three** Questions, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

193. Tremulous
    (A) Steady
    (B) Obese
    (C) Young
    (D) Healthy

194. Fake
    (A) Fanciful
    (B) Real
    (C) Ideal
    (D) Wrong

195. Disconsolate
    (A) Joyous
    (B) Thankful
    (C) Unprejudiced
    (D) Prominent

Directions : In the following **Five** Questions, four alternatives are given for the Idiom\Phrase underlined in the sentence. Choose the alternative which best expresses the meaning of the Idiom\Phrase and mark it in the Answer Sheet.

196. At his wit's end, he turned to his old trade.
    (A) After careful thinking
    (B) Confidently
    (C) Not knowing what to do
    (D) Overjoyed

197. When it comes to dancing, he is all-thumbs.
    (A) an expert
    (B) a trainer
    (C) clumsy
    (D) lazy

198. He usually goes to bed very early and rises with the lark.
    (A) very late
    (B) very early
    (C) after sunrise
    (D) at midnight

199. Their attempt to get back the stolen necklace proved to be a wild goose chase.
    (A) wise decision
    (B) useless search
    (C) timely action
    (D) delayed action

200. The day the new product was launched, people made a beeline to purchase it.
    (A) rushed
    (B) were doubtful
    (C) refused
    (D) went online