PART – a : GENERAL INTELLIGENCE

Directions : *In questions no. 1 to 5, select the related word / number from the given alternatives.*

1. MAHESH : 154362 : : SHAME : __?__
   - (A) 65231
   - (B) 65213
   - (C) 62513
   - (D) 62351

2. Stars : Blood cells : : Telescope : __?__
   - (A) Lens
   - (B) Blood
   - (C) Camera
   - (D) Microscope

3. Scale : Length : : Seismograph : __?__
   - (A) Temperature
   - (B) Earthquake
   - (C) Blood pressure
   - (D) Humidity

4. __?__ : Percussion : : Veena : String
   - (A) Tabla
   - (B) Harmonium
   - (C) Violin
   - (D) Sitar

5. Ornithologist : Bird : : Archaeologist : __?__
   - (A) Arbiter
   - (B) Aquatic
   - (C) Artifact
   - (D) Archipelago

Directions : *In questions no. 6 to 12, find the odd word / number from the given alternatives.*

6. (A) Mobile phone (B) Laptop
   (C) iPod (D) Wall clock

7. (A) Cotton (B) Seed
   (C) Thread (D) Cloth

8. (A) Mercury (B) Earth
   (C) Jupiter (D) Uranus

9. (A) Copper (B) Diamond
   (C) Silver (D) Lead

10. (A) Dam (B) River
    (C) Stream (D) Spring

11. (A) Lioness (B) Bitch
    (C) Mare (D) Stag

12. (A) 81 (B) 36
    (C) 135 (D) 128

13. If numbers starting with 950 are Airtel numbers, how many Airtel numbers are there in the below series ?

    944340 950125 953074 950435 951095
    952135 95225 940444 940415 950799
    951025 950723 950555 950677 953099

    - (A) 4
    - (B) 5
    - (C) 6
    - (D) 7

Directions : *In questions no. 14 to 18, select the missing number from the given responses.*

14.
5	5	5
3	?	3
6	5	8
3	5	4

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

15. 03 (49) 04
    04 (81) 05
    07 (?) 04
    - (A) 65
    - (B) 79
    - (C) 101
    - (D) 121

16. 101 : 15   48 : 184
    | 38 | | ? |
    35 : 43   56 : 34
    - (A) 198
    - (B) 158
    - (C) 127
    - (D) 142

17. 289 121
    ? 169
    - (A) 144
    - (B) 100
    - (C) 81
    - (D) 225

18. 2-6-8; 4-12-16; 6-18-24; ?-?-32
    - (A) 4, 28
    - (B) 8, 24
    - (C) 14, 18
    - (D) 16, 16

Directions : *In questions no. 19 to 20, find the one that does **not** belong to the group.*

19. 1, 8, 27, 64, 127, 216
    - (A) 27
    - (B) 127
    - (C) 216
    - (D) 64

20. 75, 79, 72, 80, 69, 83, 66
    - (A) 69
    - (B) 72
    - (C) 79
    - (D) 83

Directions : *In questions no. 21 to 24, find the missing term of the series.*

21. CIG, FLJ, lOM, __?__
  (A) PSU   (B) QUB
  (C) LRP   (D) JLG

22. BFG, HLM, NRS, __?__
  (A) TYZ   (B) TXY
  (C) TWX   (D) RVW

23. 1. 74, 24   2. 78, 20
  3. 82, 16   4. __?__ , 12
  (A) 90   (B) 88
  (C) 86   (D) 84

24. 1. X78   2. T92
  3. P106   4. __?__
  (A) M120   (B) L118
  (C) L120   (D) K120

25. Arrange the following in order :
  1. Golden Jubilee
  2. Silver Jubilee
  3. Anniversary
  4. Diamond Jubilee
  5. Centenary Celebration
  (A) 3, 1, 2, 4, 5   (B) 3, 2, 1, 4, 5
  (C) 2, 1, 3, 4, 5   (D) 2, 3, 4, 5, 1

26. Which one of the given responses would be a meaningful order of the following ?
  1. Call letter
  2. Application
  3. Advertisement
  4. Interview
  5. Appointment order
  (A) 3, 1, 2, 5, 4   (B) 3, 2, 1, 4, 5
  (C) 2, 1, 3, 4, 5   (D) 5, 4, 3, 2, 1

27. Arrange the following in correct order :
  1. Taluk   2. State
  3. Street   4. Village
  5. District
  (A) 1, 2, 5, 4, 3   (B) 3, 4, 5, 1, 2
  (C) 3, 2, 4, 1, 5   (D) 3, 4, 1, 5, 2

28. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?

  pqr_ _rs_rs_ _s_q_
  (A) sqppqpr   (B) sqprrqr
  (C) spqpprr   (D) pqrppq

29. Six children A, B, C, D, E and F are standing in a row. B is between F and D. E is between A and C. A does not stand next to either F or D. C does not stand next to D. F is between which of the following pairs of children ?
  (A) B and D   (B) B and A
  (C) B and E   (D) B and C

30. In the following question, there is an address which has been reproduced against (A), (B), (C) and (D), three of which have some mistake or the other. Choose the one without any mistake.

  Sristidhar Kashyap
  S/o Supravakar Kashyap
  Near Nalla Beach, 11-Kalapet
  Puducherry – 605014

  (A) Sristidhar Kashyp
       S/o Supravakar Kashyp
       Near Nalla Beach, 11-Kalpet
       Puducherry – 605014

  (B) Sristidhar Kashyp
       S/o Supravakar Kashyp
       Near Nall Baech, 11-Kalapet
       Puducherry – 605014

  (C) Sristidhar Kashyap
       S/o Supravakar Kasyap
       Near Nalla Beach, 11-Kalapet
       Puducherry – 605014

  (D) Sristidhar Kashyap
       S/o Supravakar Kashyap
       Near Nalla Beach, 11-Kalapet
       Puducherry – 605014

31. From the given alternative words, select the word which **cannot** be formed using the letters of the given word.
  CORRESPONDENT
  (A) RESPOND   (B) PRESENT
  (C) CORRECT   (D) POND

SPACE FOR ROUGH WORK

32. In the following series, how many P, D, R occur in such a way that D is followed both by P and R on any one side (in reverse way also) ?

RGPKDRPDXRDP
XGDRPKDPRXGK

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

33. In a certain code, the following alphabets are coded in a certain way by assigning numbers.

A	B	C	D	E	F	G	H
1	3	5	2	6	8	4	7

Which number can be coded for FEDCG ?
(A) 86524   (B) 86245
(C) 86452   (D) 86254

34. If $5 \times 6 = 42$, $2 \times 8 = 27$, $4 \times 9 = 50$, then $7 \times 0 =$
(A) 0   (B) 7
(C) 8   (D) 15

35. In certain code, P is #, A is %, C is φ and E is @. How is PEACE written in that code ?
(A) %#@φ%   (B) #@%φ@
(C) #@%@#   (D) #@#φ@

36. In a certain code, the following alphabets are coded in a certain way by assigning numbers as follows :

A	D	I	L	M	N	O	R	W
1	2	3	4	5	6	7	8	9

Which word can be decoded from the following ?

163514 97842

(A) WORLD OF ANIMALS
(B) ANIMALS WORLD
(C) ANIMAL WORLD
(D) ANIMAL LESS WORLD

37. The elephant population in Karnataka is increasing year after year. Find out the elephant population in 2006 from the following information :

2001	2002	2003	2004	2005	2006
12	24	48	84	132	?

(A) 192   (B) 190
(C) 180   (D) 185

38. Mr. Sen is a hardworking labourer. He earns ₹ 200 per day. On an average, he spends ₹ 75 for food, ₹ 10 for dress, ₹ 50 for loan repayments, ₹ 10 for social service and ₹ 30 for other activities. The balance amount he deposits in his bank account. If he takes 5 days' leave in January, what will be his bank balance for the month ?

(A) ₹ 775   (B) ₹ 650
(C) ₹ 750   (D) ₹ 625

39. If EARTH is coded as SUBDZ, then TEAR and HER are coded as
(A) DSUB, ZUB   (B) DUBS, BUZ
(C) DSUB, BSZ   (D) DSUB, ZSB

Directions : In questions no. 40 and 41, a statement is given followed by two conclusions. You have to consider the statement to be true, even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statement.

40. *Statement :* Safety lockers are the best place to preserve valuables.

Conclusions :

I. Valuables are not safe at any place.

II. There are few places better than safety lockers to preserve valuables.

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Neither conclusion I nor II follows

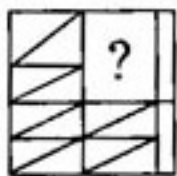41. *Statement :* Of all the T.V. sets manufactured in India, 'Solar' brand has the largest sale.

Conclusions :

I. Volume of sales of all brands of T.V. sets manufactured is known.

II. The production of no other T.V. set is as large as that of 'Solar'.

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
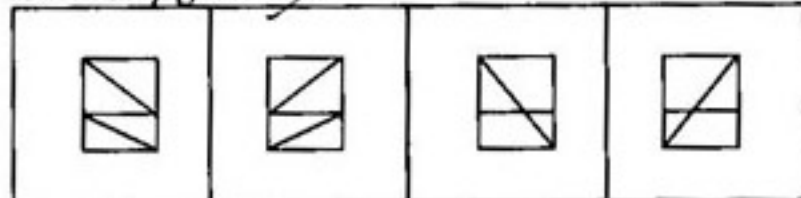(D) Neither conclusion I nor II follows

SPACE FOR ROUGH WORK

42. Complete the missing portion selecting from the alternatives given.
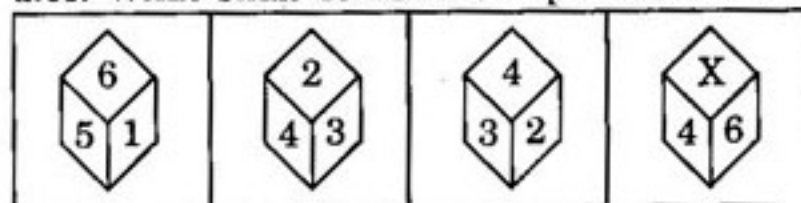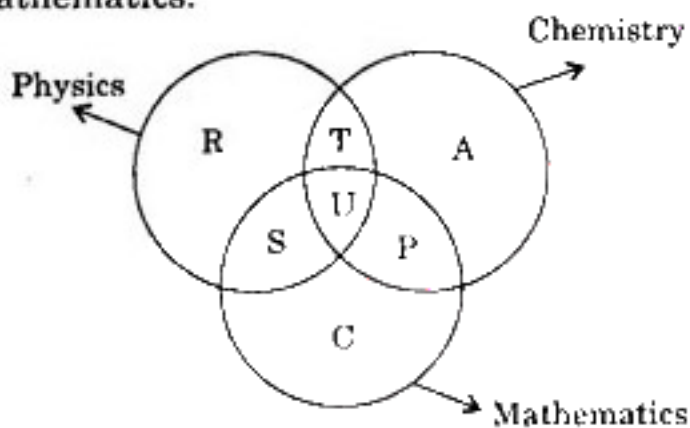
Question figure :

Answer figures :

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

43. Given below are the different positions of a dice. What shall come in the place of 'X' ?

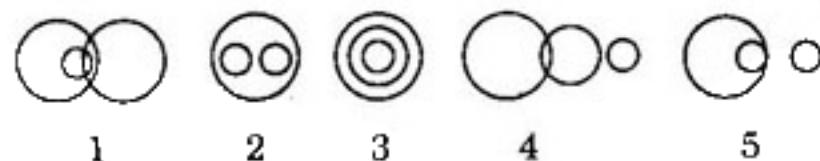
(A)   2   (B)   1
(C)   3   (D)   5

44. The diagram below represents the students who study Physics, Chemistry and Mathematics.

Study the diagram and identify the region which represents students who study both Physics and Chemistry but not Mathematics.
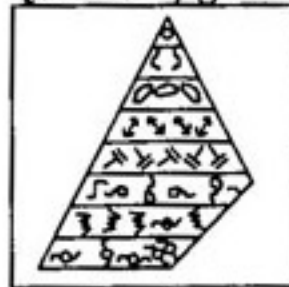(A)   R+T+A+U+P+S   (B)   T
(C)   T+S+U+P   (D)   C

45. Which one of the following figures represents the relationship among Politicians, Contractors and Candles ?
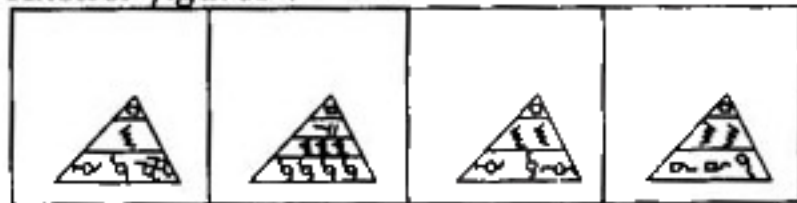

(A)   4   (B)   3
(C)   2   (D)   1

46. Which answer figure will complete the pattern in the question figure ?
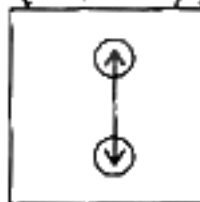
Question figure :

Answer figures :

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

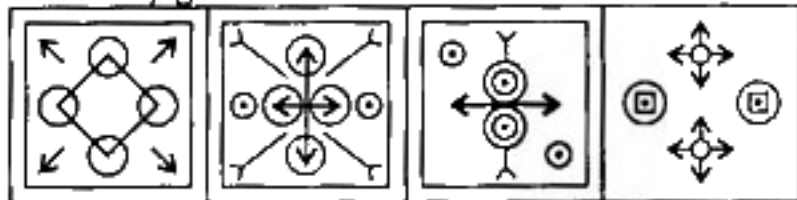**47.** From the given answer figures, select the one in which the question figure is hidden/embedded.
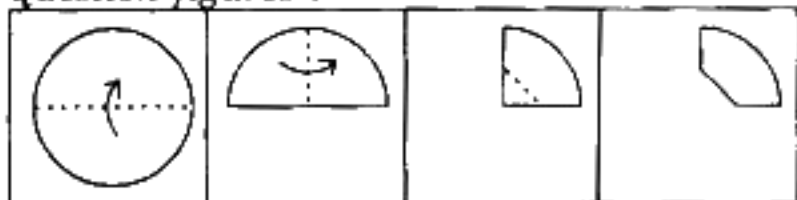
Question figure :

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.
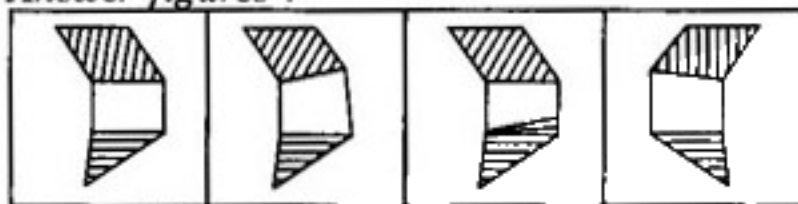
Question figures :

Answer figures :

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

SPACE FOR ROUGH WORK

49. Find out the mirror image of the question figure given below.

Question figure :

Answer figures :

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

50. 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., G can be represented by 02, 14, etc., and P can be represented by 66, 78, etc. Similarly, you have to identify the set for the word LINE.

MATRIX I

	0	1	2	3	4
0	E	F	G	H	I
1	H	I	E	F	G
2	F	G	H	I	E
3	I	E	F	G	H
4	G	H	I	E	F

MATRIX II

	5	6	7	8	9
5	L	M	N	O	P
6	O	P	L	M	N
7	M	N	O	P	L
8	P	L	M	N	O
9	N	O	P	L	M

(A) 86, 31, 69, 42   (B) 86, 11, 68, 42

(C) 86, 11, 69, 43   (D) 86, 11, 69, 40

FOR VISUALLY HANDICAPPED CANDIDATES ONLY

Directions : In questions no. 42 and 43, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

42. 89, 98, 55, __?__
(A) 58   (B) 55
(C) 98   (D) 99

43. B, F, J, N, R, V, Z, D, H, L, __?__
(A) M   (B) O
(C) P   (D) T

44. Rama, a friend of Krishna, came to meet him every Sunday. The first time he came at 12.30 pm, next time at 1.20 pm, then at 2.30 pm and then at 4 pm. When did Rama turn up to see Krishna, the time after that ?

(A) 5.20 pm   (B) 5.30 pm
(C) 6.20 pm   (D) 5.50 pm

45. Find the odd number from the given alternatives.

(A) 146   (B) 278
(C) 321   (D) 789

Directions : In questions no. 46 to 48, select the missing number from the given responses.

46.

5	10
8	120

7	30
6	222

13	27
4	?

(A) 126   (B) 132
(C) 147   (D) 160

47. 42, 79, 153, __?__ , 597
(A) 300   (B) 301
(C) 305   (D) 303

48. 77, 49, 36, 18, __?__
(A) 7   (B) 8
(C) 9   (D) 3

49. If BHASHA is written is 154754 and BRAIN is written as 13408, then AHINSA is written as

(A) 458074   (B) 405847
(C) 450847   (D) 450874

50. If HKUJ is written as FISH in a code language, how can UVCD be written in the same code ?

(A) STAR   (B) STAK
(C) STAL   (D) STAB

PART – b : GENERAL AWARENESS

51. Firms under perfectly competitive markets generally are

(A) Price makers

(B) Price givers

(C) Price takers

(D) Price fixers

52. Select the odd one in the following :

(A) Petroleum

(B) Coal

(C) Fuel wood

(D) Electricity

53. National Income is

(A) Net National Product – Indirect Taxes + Subsidies

(B) Gross National Product – Direct Taxes

(C) Gross Domestic Product – Imports

(D) Net Domestic Product + Exports

54. Which statement is true ?

(A) Money is a good servant

(B) Money is a good servant but a bad master

(C) Money is a good master but a bad servant

(D) Money is a good master and a good servant

55. India has adopted _____ as its economic system to bring about a socialistic pattern of society.

(A) Socialism

(B) Mixed Economy

(C) Capitalism

(D) Political Economy

56. Local governments are the basis of

(A) Aristocracy

(B) Secularism

(C) Democracy

(D) Reservation

57. The final interpreter of the Indian Constitution is

(A) Central Cabinet

(B) President

(C) High Court

(D) Supreme Court

58. One of the following laws favours women's interests :

(A) Equal Remuneration Act

(B) Protection of Civil Rights Act

(C) Immoral Traffic (Prevention) Act

(D) None of the above

59. One of the following was once an associate State of the Union of India and later became a full fledged State :

(A) Jharkhand

(B) Chhattisgarh

(C) Arunachal Pradesh

(D) Sikkim

60. President of India can be impeached by

(A) Specially constituted Tribunal

(B) Supreme Court

(C) Central Cabinet

(D) Parliament

61. Who among the following was the leader of Cabinet Mission ?

(A) Stafford Cripps

(B) Linlithgow

(C) A.V. Alexander

(D) Sir Pethick Lawrence

SPACE FOR ROUGH WORK

62. In which one of the following battles did Nadir Shah defeat the Mughal Emperor Mohammad Shah ?

(A) Delhi   (B) Karnal

(C) Panipat   (D) Kanpur

63. *Mahabashya* was written by

(A) Gargi   (B) Manu

(C) Bana   (D) Patanjali

64. The song 'Jana-Gana-Mana' composed by Rabindra Nath Tagore was first published in January 1912 under the title of

(A) Rashtra Jagrati

(B) Tatva Bodhini

(C) Bharat Vidhata

(D) None of the above

65. Sher Shah died while fighting in

(A) Chausa

(B) Kalinga

(C) Kalinjar

(D) None of these

66. Biosphere reserves are meant to

(A) Preserve wild land flora and fauna

(B) Experiment and develop forest products

(C) Experiment and develop agriculture products

(D) All the above

67. Days and nights are caused because of

(A) shape of Earth's orbit

(B) revolution movement

(C) rotational movement

(D) None of the above

68. Chennai gets less rain than other places from the South-West monsoons because

(A) The monsoon runs parallel to Coromandel coast

(B) Chennai is too hot to allow moisture to condense

(C) They are off-shore winds

(D) All the above

69. The climate of India is

(A) Equatorial   (B) Monsoonal

(C) Mediterranean   (D) Continental

70. Laterite soils are found in

(A) heavy rainfall region

(B) desert region

(C) tropical region

(D) tropical region with wet and dry climate

71. Photosynthesis takes place in

(A) Roots of the plants

(B) Green parts of the plants

(C) Stems of the plants

(D) All parts of the plant

72. Universal Blood Donor is

(A) A group   (B) B group

(C) AB group   (D) O group

73. Alcoholic fermentation is brought by

(A) Mushrooms

(B) Amoeba

(C) Virus

(D) Yeast

74. Birds and bats are good fliers. The bat differs from bird in having

(A) Four chambered heart

(B) Diaphragm

(C) Wings

(D) Small brain

SPACE FOR ROUGH WORK

75. 'Tube within a tube' type of body plan is found in
    (A) Sea anemone
    (B) Leech
    (C) Amoeba
    (D) Sycon

76. The portion of a plant that is grafted on to the other plant is called
    (A) Stock
    (B) Scion
    (C) Stalk
    (D) Sucker

77. White light is a mixture of how many colours ?
    (A) 4
    (B) 5
    (C) 6
    (D) 7

78. Surface tension arises due to
    (A) adhesive force between molecules
    (B) cohesive force between molecules
    (C) gravitational force between molecules
    (D) electrical force between molecules

79. A particle covers equal distance around a circular path in equal interval of time. It has uniform
    (A) Velocity
    (B) Speed
    (C) Acceleration
    (D) Momentum

80. Which of the following will always produce a diminished image of an object placed before it ?
    (A) Plane mirror
    (B) Convex mirror
    (C) Convex lens
    (D) Concave mirror

81. The term PC means
    (A) Private Computer
    (B) Personal Calculator
    (C) Personal Computer
    (D) Professional Computer

82. A translator for the high-level language program into machine code is
    (A) Assembler
    (B) Compiler
    (C) Loader
    (D) Linker

83. Atomic nuclei are composed of
    (A) Protons and electrons
    (B) Protons and isotrons
    (C) Electrons and neutrons
    (D) Protons and neutrons

84. Which allotrope of carbon is used both as a lubricant and as lead in pencils ?
    (A) Diamond
    (B) Coal
    (C) Charcoal
    (D) Graphite

85. Example of aerosol is
    (A) Milk
    (B) River water
    (C) Smoke
    (D) Blood

86. A process that is almost the reverse of photosynthesis is the
    (A) digestion of starch
    (B) melting of iron
    (C) ripening of fruit
    (D) burning of wood

87. Ozone hole was discovered over Antarctica in
    (A) 1975
    (B) 1985
    (C) 1978
    (D) 1987

88. Yusho disease, discovered in Japan, is related with pollution due to
    (A) PCB
    (B) Cadmium
    (C) Acid Rain
    (D) PAN

89. The Pyramid of Biomass is inverted in which ecosystem ?
    (A) Pond
    (B) Forest
    (C) Grassland
    (D) Mangrove

90. Central Pollution Control Board comes under the Ministry of

(A) Health and Family Welfare

(B) Oil and Petroleum

(C) Social Welfare

(D) Environment and Forests

91. Hyderabad is famous for a museum. Name the museum.

(A) Prince Wales Museum

(B) Salarjung Museum

(C) National Museum

(D) Victoria Museum

92. Which city is known as Electronic City ?

(A) Gurgaon

(B) Bengaluru

(C) Jaipur

(D) Salem

93. First woman President of India is

(A) Mrs. Najma Heptulla

(B) Mrs. Sheila Dikshit

(C) Mrs. Vasundhara Raje Scindia

(D) Mrs. Pratibha Patil

94. To which country does India export the maximum gems and ornaments in value terms ?

(A) U.S.A.

(B) Britain

(C) Russia

(D) Japan

95. The famous Dilwara Temples are situated in

(A) Rajasthan

(B) Uttar Pradesh

(C) Madhya Pradesh

(D) Maharashtra

96. The President of India has awarded Rajiv Gandhi Khel Ratna Award to

(A) Vijay Kumar (Shooter)

(B) M.S. Dhoni (Cricketer)

(C) Both (A) and (B)

(D) None of the above

97. India has won the Under-19 Cricket World Cup, 2012 after defeating _____ in the final.

(A) Australia

(B) England

(C) South Africa

(D) Pakistan

98. Bharatpur Sanctuary is located in the State of

(A) Orissa   (B) Tamil Nadu

(C) Karnataka   (D) Rajasthan

99. The 2014 Shooting World Championship will be held in

(A) Granada in Spain

(B) New Delhi in India

(C) Toronto in Canada

(D) Melbourne in Australia

100. Rathyatra at Puri is celebrated in honour of

(A) Lord Rama

(B) Lord Jagan Nath

(C) Sri Chaitanya Prabhu

(D) Sri Satya Sai Baba

SPACE FOR ROUGH WORK

PART – c : QUANTITATIVE APTITUDE

101. The largest number among 2·6, 2·066, 2·66, 2·08 is

(A) 2·6   (B) 2·066

(C) 2·66   (D) 2·08

102. If $\sqrt{2}$ = 1·4142, the value of $\dfrac{7}{4+\sqrt{2}}$ is

(A) 1·2929   (B) 1·5858

(C) 3·5858   (D) 4·4142

103. Next number in the series

6, 16, 36, 76, 156, 316, ...

is

(A) 633   (B) 632

(C) 636   (D) 638

104. $7^{12} - 4^{12}$ is exactly divisible by which of the following numbers ?

(A) 36   (B) 35

(C) 34   (D) 33

105. The LCM of two numbers a, b is 72 and 72 > a > b. The biggest possible values of a, b are respectively

(A) 24, 18   (B) 24, 9

(C) 36, 24   (D) 72, 48

106. In a hostel, there are 120 students and food stock is for 45 days. If 30 new students join the hostel, in how many days will the complete stock be exhausted ?

(A) 32   (B) 36

(C) 38   (D) 40

107. 40 men can build a wall 200 m long in 12 days working 8 hours a day. The number of days 30 men will take to build a similar wall 300 m long working 6 hours a day will be

(A) 36   (B) 9

(C) 32   (D) 18

108. A book was sold at a discount of 10% on the printed price, and was purchased at a discount of 20% on the printed price. If the profit in the complete deal was ₹ 10, then the printed price of the book was

(A) ₹ 110   (B) ₹ 80

(C) ₹ 90   (D) ₹ 100

109. A trader marked his product 20% higher than his cost price and then gives 20% discount on the marked price. The profit or loss for selling the product is

(A) 4% profit   (B) 0% profit

(C) 4% loss   (D) 10% profit

110. The ratio between the ages of A and B is 3 : 5 and the sum of their ages is 56 years. The ratio between their ages 7 years ago was

(A) 1 : 2   (B) 2 : 3

(C) 3 : 4   (D) 3 : 5

111. Divide ₹ 990 into 3 parts in such a way that half of the first part, one-third of the second part and one-fifth of the 3rd part are equal.

(A) 200, 300, 490   (B) 196, 298, 496

(C) 198, 494, 298   (D) 198, 297, 495

112. A person bought some oranges worth ₹ 36 from each of the five markets at ₹ 1, ₹ 1·50, ₹ 1·80, ₹ 2 and ₹ 2·25 per orange respectively. What is the average price of an orange ?

(A) ₹ 1·58   (B) ₹ 1·80

(C) ₹ 1·91   (D) ₹ 2·00

113. The mean temperature of Monday to Wednesday was 37°C and of Tuesday to Thursday was 34°C. If the temperature on Thursday was 4/5 that of Monday, the temperature on Thursday was

(A) 36·5°C   (B) 36°C

(C) 35·5°C   (D) 34°C

114. A man loses 10% by selling an article for ₹ 180. At what price should he sell it to gain 10% ?

(A) ₹ 200   (B) ₹ 216

(C) ₹ 220   (D) ₹ 217·80

115. A producer of tea blends two varieties of tea from tea gardens one costing ₹ 18 per kg and another ₹ 20 per kg in the ratio 5 : 3. If he sells the blended variety at ₹ 21 per kg, then his gain percent is

(A) 10   (B) 12

(C) 18   (D) 8

SPACE FOR ROUGH WORK

116. 25% of what amount of money is equal to $12\frac{1}{2}\%$ of ₹ 180 ?

   (A) ₹ 80   (B) ₹ 90

   (C) ₹ 120   (D) ₹ 75

117. In measuring a line segment of length 2·5 cm, it was measured as 2·55 cm by mistake. Find the error percent.

   (A) 1%   (B) 2%

   (C) 3·5%   (D) 3%

118. Two friends walking at 5 km/hr and 7 km/hr start at the same time from two different towns 48 km apart towards each other. They will meet each other after

   (A) 2 hours   (B) 4 hours

   (C) 5 hours   (D) 6 hours

119. A sum amounts to ₹ 1,352 in 2 years at 4% compound interest. The sum is

   (A) ₹ 1,300   (B) ₹ 1,260

   (C) ₹ 1,250   (D) ₹ 1,200

120. The wheel of an engine turns 350 times round its axle to cover a distance of 1·76 km. The diameter of the wheel is

   (A) 90 cm   (B) 160 cm

   (C) 120 cm   (D) 150 cm

121. A solid metallic cylinder of base radius 3 cm and height 5 cm is melted to form cones, each of height 1 cm and base radius 1 mm. The number of cones is

   (A) 3500   (B) 4500

   (C) 7500   (D) 13500

122. The centroid of an equilateral triangle ABC is G. If AB = 9 cm, the length of AG (in cm) is

   (A) $2\sqrt{3}$ (B) $\sqrt{3}$

   (C) $3\sqrt{3}$ (D) $3\sqrt{2}$

123. In a polygon, the sum of the interior angles is double the sum of the exterior angles. The number of sides is

   (A) 4   (B) 5

   (C) 6   (D) 7

124. A metal sphere of radius 12 cm is melted into three smaller spheres. If the radii of two smaller spheres are 6 cm and 8 cm, the radius of the third is

   (A) 10 cm   (B) 12 cm

   (C) 14 cm   (D) 16 cm

125. A rectangle has 30 cm as its length and 720 cm² as its area. Its area is increased to $1\frac{1}{4}$ times its original area by increasing only its length. Its new perimeter is

   (A) 119 cm   (B) 121 cm

   (C) 123 cm   (D) 125 cm

126. The length of the diagonal of a square is 8 cm. A circle has been drawn circumscribing the square. The area of the portion between the circle and the square (in cm²) is

   (A) $10\frac{2}{7}$ (B) $12\frac{2}{7}$

   (C) $16\frac{2}{7}$ (D) $18\frac{2}{7}$

127. If $3x + 2y = 12$ and $xy = 6$, then the value of $9x^2 + 4y^2$ is

   (A) 72   (B) 74

   (C) 76   (D) 80

128. If the distance between the points (x, 0) and (−7, 0) be 10 units, then the possible values of x are

   (A) 3 and − 17   (B) − 3 and − 17

   (C) 3 and 17   (D) − 3 and 17

129. If $x + \dfrac{1}{x} = 6$, then $x^4 + \dfrac{1}{x^4}$ is

   (A) 1148   (B) 1150

   (C) 1152   (D) 1154

130. If $x + \dfrac{a}{x} = b$, the value of $\dfrac{x^2 + bx + a}{bx^2 - x^3}$ is

   (A) $\dfrac{b}{a}$ (B) ab

   (C) a + b   (D) $\dfrac{2b}{a}$

131. If $x + y + z = 13$, then the maximum value of $(x - 2)(y + 1)(z - 3)$ is

   (A) 54   (B) 27

   (C) 25   (D) 30

132. The medians of a triangle ABC meet at G. If the area of the triangle be 120 sq. cm, then the area of the triangle GBC is

(A) 30 sq. cm
(B) 50 sq. cm
(C) 20 sq. cm
(D) 40 sq. cm

133. The mid points of AB and AC of a triangle ABC are respectively X and Y. If BC + XY = 12 unit, then the value of BC − XY is

(A) 4
(B) 12
(C) 6
(D) 8

134. Suppose AB is a diameter of a circle whose centre is at O and C be any point on the circle. If CD ⊥ AB and CD = 12 cm, AD = 16 cm, then $\overline{BD}$ is

(A) 8 cm
(B) 9 cm
(C) 10 cm
(D) 12 cm

135. In a △ ABC, AB = AC and D is a point on AB, such that AD = DC = BC. Then the ∠ BAC is

(A) 30°
(B) 36°
(C) 40°
(D) 45°

136. A, B and C are three points on a circle. The tangent at C meets BA produced at T. Given ∠ ATC = 36° and ∠ ACT = 48°, the angle subtended by AB at the centre of the circle is

(A) 96°
(B) 72°
(C) 84°
(D) 48°

137. If α + β = 90° and α : β = 2 : 1, then the value of sin α : sin β is

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

138. The angles of depression, from the top of a light-house, of two boats are 45° and 30° towards the west. If the two boats are 5 m apart, then the height of the light-house is

(A) $3\sqrt{3} + 1$ m
(B) $3(\sqrt{3} + 1)$ m
(C) $3\sqrt{3} - 1$ m
(D) $3(\sqrt{3} - 1)$ m

139. If $\sqrt{2}$ cos(5x + 5°) = cot 45°, then the value of x in degrees is

(A) 10
(B) 8
(C) 11
(D) 0

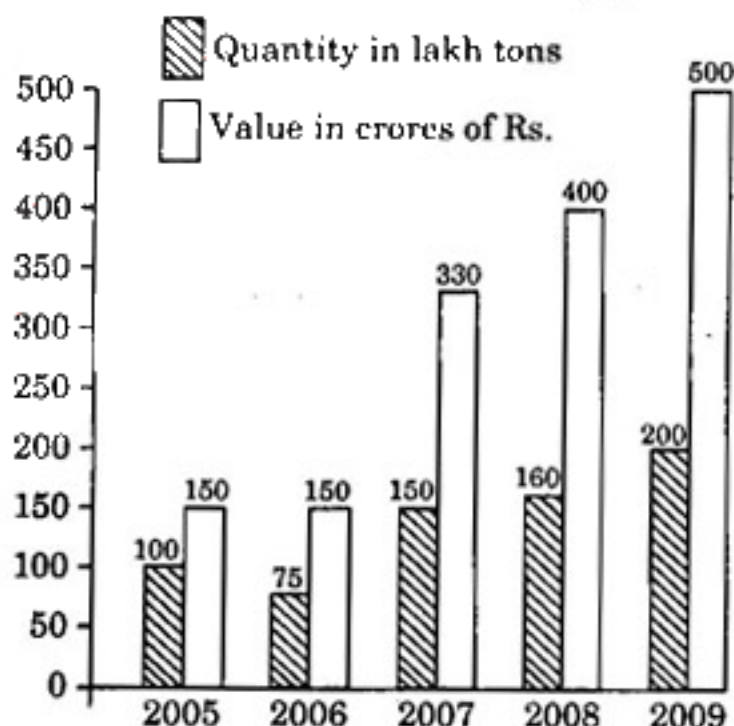140. If $\sin \theta = \dfrac{a^2 - 1}{a^2 + 1}$, then the value of sec θ + tan θ will be

(A) $\sqrt{2}\,a$
(B) a
(C) $\dfrac{a}{\sqrt{2}}$
(D) $\dfrac{a}{a^2 + 1}$

141. If sin(x − 2y) = cos(4y − x), then the value of cot 2y is

(A) 0
(B) 1
(C) $\dfrac{1}{\sqrt{3}}$
(D) undefined

Directions : *Study the following bar-diagram and answer questions no. 142 – 145.*

INDIA'S BISCUIT EXPORT

142. In which year was the value per ton minimum ?

(A) 2005
(B) 2006
(C) 2007
(D) 2009

143. What was the % drop in export quantity from 2005 to 2006 ?

(A) 25%
(B) 50%
(C) 75%
(D) 0%
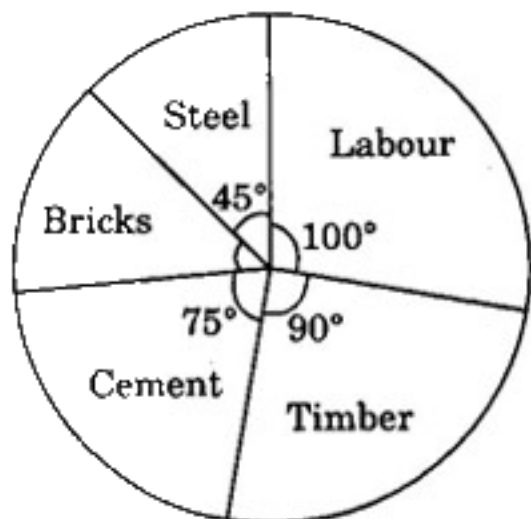
144. In which two years was the value per ton equal ?

(A) 2008 and 2009
(B) 2007 and 2008
(C) 2006 and 2007
(D) 2005 and 2006

145. The year in which the percentage increase in export was maximum from its preceding year is

(A) 2008
(B) 2009
(C) 2007
(D) None of these

SPACE FOR ROUGH WORK

Directions : *The following pie chart represents a total expenditure of ₹ 5,40,000 on different items in constructing a flat in a town. Study the pie chart and answer the questions no. 146 - 150.*

146. Which is the item of maximum expenditure ?
   (A) Timber   (B) Labour
   (C) Cement   (D) Steel

147. The expenditure in ₹ on cement is
   (A) 1,35,000   (B) 1,12,500
   (C) 75,000   (D) 90,000

148. The expenditure in ₹ on bricks is
   (A) 1,50,000   (B) 70,000
   (C) 75,000   (D) 67,500

149. The expenditure on bricks is less than the expenditure on timber (in ₹) by
   (A) 60,000   (B) 65,000
   (C) 10,000   (D) 12,500

150. The percentage of the total expenditure spent on steel and cement is

   (A) $33\frac{1}{3}$%   (B) 30%

   (C) 33·23%   (D) 25%

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142. Sudha and Rita start a business with ₹ 2,00,000 and ₹ 3,00,000 respectively. 10% interest on their capital is added to the business every year. Profit sharing ratio at the end of 2 years is
   (A) 3 : 2   (B) 2 : 3
   (C) 121 : 180   (D) 120 : 181

143. A mixture of 20 kg of spirit and water contains 10% water. How much water must be added to this mixture to raise the percentage of water to 25% ?
   (A) 8 kg   (B) 30 kg
   (C) 5 kg   (D) 4 kg

144. The price of sugar increased by 25%. By what percent must a housewife reduce the consumption of sugar, so that the expenditure on sugar is the same as before ?

   (A) $16\frac{2}{3}$ (B) 20

   (C) 25   (D) 35

145. A can do a piece of work in 24 days, while B alone can do it in 16 days. With the help of C, they finish the work in 8 days. C alone can do the work in
   (A) 32 days   (B) 36 days
   (C) 40 days   (D) 48 days

146. Simple interest at 10% on ₹ 5,000 is ₹ 2,500. The time for which the sum is invested is
   (A) 8 years   (B) 6 years
   (C) 5 years   (D) 4 years

147. If $\sec(90° - x°) + \csc x° = 4$, then x° is
   (A) 30°   (B) 60°
   (C) 45°   (D) 15°

148. A person wants to travel a distance of 50 km by his bicycle. He travels with a speed of 12·5 km/hr. After every 12·5 km, he takes rest for 20 minutes. The time taken by the person to complete the whole distance is
   (A) 4 hours 20 minues
   (B) 5 hours 20 minutes
   (C) 5 hours
   (D) 6 hours

149. The radius of a circle is 8 cm. An external point is at a distance of 10 cm from the centre. The length of the tangent drawn to the circle from the external point is
   (A) 6 cm   (B) 8 cm
   (C) 9 cm   (D) 10 cm

150. A bicycle originally costs ₹ 100 and was discounted 10%. After three months, it was sold after having discounted 15%. How much was the bicycle sold for ?
   (A) ₹ 55·50   (B) ₹ 95·25
   (C) ₹ 76·50   (D) ₹ 85·50

SPACE FOR ROUGH WORK

PART – d : ENGLISH LANGUAGE

Directions : In questions no. 151 to 155, some parts of the sentences have errors and some have none. Find out which part of a sentence has an error and blacken the oval [●] corresponding to the appropriate letter (A, B, C). If a sentence is free from error, blacken the oval corresponding to (D) in the Answer Sheet.

151. My sister and myself / are pleased / to accept your invitation to dinner. / No error.
    (A)   (B)   (C)   (D)

152. Mahatma Gandhi is called / as the Father / of our nation. / No error.
    (A)   (B)   (C)   (D)

153. The thief escaped / before / I opened the door. / No error.
    (A)   (B)   (C)   (D)

154. A Commission has been appointed / to investigate / into this scandal. / No error.
    (A)   (B)   (C)   (D)

155. Each of the students / stand up and say 'Yes'
    (A)   (B)

when his or her name is called by the teacher. / No error.
    (C)   (D)

Directions : In questions no. 156 to 160, sentences are 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 oval [●].

156. You ___ smoke on the Metro now. It is illegal.
    (A) can't   (B) needn't
    (C) don't   (D) are not allowed to

157. It _____ very hot tomorrow.
    (A) is   (B) will be
    (C) is being   (D) has been

158. I am _____ a movie.
    (A) noticing   (B) looking
    (C) watching   (D) seeing

159. The boy swam right _____ the river.
    (A) on   (B) over
    (C) across   (D) through

160. She spent _____ amount of money she had.
    (A) little   (B) much
    (C) the few   (D) the little

Directions : In questions no. 161 to 165, out of the four alternatives, choose the one which best expresses the meaning of the given word.

161. Trivial
    (A) Stupid   (B) Insignificant
    (C) Irrelevant   (D) Unpopular

162. Competent
    (A) Intelligent   (B) Experienced
    (C) Efficient   (D) Suitable

163. Prejudiced
    (A) Biased   (B) Confused
    (C) Ignorant   (D) Foolish

164. Monument
    (A) Mausoleum   (B) Epitaph
    (C) Tomb   (D) Memorial

165. Care
    (A) Concern   (B) Distress
    (C) Pressure   (D) Trouble

SPACE FOR ROUGH WORK

181. A large food basket with a cover

    (A) hamper   (B) knapsack

    (C) satchel   (D) container

182. Stealing goods while shopping

    (A) shop-lifting   (B) burglary

    (C) plagiarism   (D) window-shopping

183. Place for keeping birds

    (A) aquarium   (B) gymnasium

    (C) aviary   (D) aerodrome

184. That cannot be overcome

    (A) insurmountable (B) invincible

    (C) inseparable   (D) insoluble

185. Number of things or portions close together without order or arrangement.

    (A) huddle   (B) assembly

    (C) mass   (D) gathering

186. (A) Perseverence   (B) Perseverance

     (C) Perseveranse   (D) Peseverance

187. (A) Recommendaton (B) Recomendation

     (C) Recommendation (D) Recammendation

188. (A) Grievence   (B) Greivence

     (C) Grievance   (D) Grrievance

189. (A) Dictionery   (B) Dicctionary

     (C) Dictionary   (D) Dictionnery

190. (A) Appalled   (B) Apalled

     (C) Appaled   (D) Apallad

Everyone keeps looking for signs of water. Then one day the men see patches of green grass. There are pools of water in the hollows. Men and animals begin to hurry, for they know that rain has fallen nearby. Farther on, they find enough grass for pasture and enough water in the hollows for their animals. Chief Omar gives the signal to make camp.

Again the camels kneel. And again the men unload them. Quickly they put up their tents, with the openings facing east. They spread rugs and blankets on the ground and place pillows on them.

A blanket divides the tent into two rooms. Then they unload the dishes and pots and bags of food and water. And once more the nomads are at home.

Meanwhile the thirsty animals take a long drink at the water holes. The goats drink first. Next come the sheep. Then come the camels. They are the thirstiest of all. They drink and drink. They have travelled for days without water. But at last they, too, turn away.

Rain has fallen here, and there will be pasture for many weeks. The animals will grow fat on the green grass. Then the men will choose the animals they want to sell. After they shear the sheep and fill the bags with wool, they will go to the big town on the oasis.

Again the nomads break camp and move on. They pitch their tents on the sand at the edge of the oasis. The first days in town are exciting days. There is the excitement of seeing shops and streets and crowds of people. The men must sell their animals and wool, and buy supplies. They bargain at the bazaars, and they drink coffee in the cool shade and listen to the sound of flowing water.

SPACE FOR ROUGH