

PART - A

GENERAL INTELLIGENCE AND REASONING

Directions : In question nos. 1 to 9, select the related letter/word/number from the given alternatives.

1. Length : Metre :: Power : ?
 (A) Calories (B) Degree
 (C) Watt (D) Kilogram
2. Square : Cube :: Circle : ?
 (A) Ellipse (B) Parabola
 (C) Cone (D) Sphere
3. Paper : Tree :: Glass : ?
 (A) Window (B) Sand
 (C) Stone (D) Mirror
4. ACFJ : ZXUQ :: EGIN : ?
 (A) VUSQ (B) VRPM
 (C) UTRP (D) VTRM
5. ACEG : DFHJ :: QSUW : ?
 (A) TVXZ (B) TQST
 (C) MNPR (D) EGIJ
6. EGIK : FILO :: FHJL : ?
 (A) JGMP (B) JGPM
 (C) GJPM (D) GJMP
7. 10 : 91 :: 9 : ?
 (A) 69 (B) 72
 (C) 89 (D) 97
8. 7 : 56 :: 9 : ?
 (A) 63 (B) 81
 (C) 90 (D) 99
9. 20 : 50 :: 100 : ?
 (A) 150 (B) 250
 (C) 200 (D) 156

Directions : In question nos. 10 to 18, find the odd number/letters/number pair from the given alternatives.

10. (A) Pathology (B) Geology
 (C) Cardiology (D) Radiology
11. (A) Rivulet (B) Stream
 (C) River (D) Pond
12. (A) Konark (B) Madurai
 (C) Dilwara (D) Ellora
13. (A) RTW (B) QOM
 (C) IKG (D) IKM
14. (A) EFH (B) OPQ
 (C) BCE (D) IJL
15. (A) DH (B) FJ
 (C) HK (D) PR
16. (A) 24 (B) 49
 (C) 80 (D) 15
17. (A) 121 (B) 324
 (C) 523 (D) 729
18. (A) 704, 11 (B) 256, 4
 (C) 832, 13 (D) 310, 5
19. Arrange the following words in the ascending order, as in a dictionary :
 1. Pick 2. Pith 3. Pile
 4. Perk 5. Pour
 (A) 4, 1, 2, 3, 5 (B) 4, 1, 3, 2, 5
 (C) 4, 3, 2, 1, 5 (D) 5, 4, 3, 2, 1
20. Arrange the following words in the ascending order :
 1. Millenium 2. Diamond Jubilee
 3. Silver Jubilee 4. Centenary
 5. Golden Jubilee
 (A) 2, 3, 5, 4, 1 (B) 2, 5, 3, 1, 4
 (C) 3, 5, 2, 4, 1 (D) 2, 3, 5, 1, 4

1. Arrange the following words in their descending order :

1. Weekly 2. Bi-annual 3. Fortnightly
4. Monthly 5. Annual

- (A) 1, 3, 4, 2, 5 (B) 2, 5, 4, 1, 3
(C) 4, 1, 2, 3, 5 (D) 5, 2, 4, 3, 1

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

a _ cbc _ ca _ ab _ bca _ ab

- (A) b a b c c (B) b c a b b
(C) a b c b c (D) b c a b c

Directions : In question nos. 23 to 27, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

3. BCFG, JKNO, RSVW, ?

- (A) ZADE (B) HIKL
(C) STUX (D) MNPQ

4. CIM, HNR, MSW, ?

- (A) SXA (B) UYB
(C) RXB (D) ZEH

5. 2, 3, 6, 7, 14, 15, ?

- (A) 16 (B) 30
(C) 31 (D) 32

6. 3120, ?, 122, 23, 4

- (A) 488 (B) 621
(C) 610 (D) 732

7. 0, 5, 60, 615, ?

- (A) 6030 (B) 6170
(C) 6130 (D) 6000

8. Nithya is Sam's sister. Mogan is Sam's Father. Selvan is Rajan's Son. Rajan is Mogan's brother. How is Nithya related to Selvan ?

- (A) Daughter (B) Sister
(C) Cousin (D) Wife

29. A boy's age is one fourth of his father's age. The sum of the boy's age and his father's age is 35. What will be father's age after 8 years ?

- (A) 15 (B) 28
(C) 35 (D) 36

30. A man said to a lady. "Your mother's husband's sister is my aunt". How is the lady related to man ?

- (A) Sister (B) Mother
(C) Daughter (D) Granddaughter

31. If South East becomes North, then what will South West become ?

- (A) North (B) West
(C) East (D) North West

Directions : In question no. 32, from the given alternatives select the word which *cannot* be formed using the letters of the given word.

32. CONTENTION

- (A) TONIC (B) NOTE
(C) NATION (D) NOTION

33. In a certain code language, GRAPE is written as 27354 and FOUR is written as 1687. How is GROUP written in that code ?

- (A) 27384 (B) 27684
(C) 27685 (D) 27658

34. WAYIN is written as TXVFK. How LBU can be written in that code ?

- (A) IYRH (B) KATJ
(C) JZSI (D) NDWM

35. In a certain code language, if the word PARTNER is coded as OZQSMDQ, then what is the code for the word SEGMENT ?

- (A) TFHNFOU (B) RDFLDMS
(C) RDELDMS (D) RDFEDNS

36. If DOCTOR is written as FQEVQT, how PATIENT can be written in that code ?
 (A) RVKGPV (B) RCKPGVV
 (C) RCVKGPV (D) RVCKGVP

Directions : In question nos. 37 and 38, find the missing number.

37.

21	24	36
11	14	12
3	?	4
77	112	108

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

- 38.
- | | | |
|-----|-----|------|
| 12 | 16 | 18 |
| 16 | 16 | 20 |
| 5 | 7 | ? |
| 197 | 263 | .356 |

- (A) 9 (B) -4
 (C) 4 (D) -8

39. If + means \div , - means \times , \times means +, \div means -, then
 $90 + 18 - 6 \times 30 \div 4 = ?$

- (A) 64 (B) 65
 (C) 56 (D) 48

40. If $73 + 46 = 42$ and $95 + 87 = 57$, then
 $62 + 80 = ?$

- (A) 32 (B) 48
 (C) 64 (D) 36

41. Based on the given data, estimate the number of 'Television-buyers' for the year 1990.

1982	1984	1986	1988	1990
447	458	489	540	?

- (A) 611 (B) 591
 (C) 571 (D) 601

42. A man coming out of the backdoor of his house which is facing East, walked for one kilometre, turned to his right and walked for another kilometre. Then he turned to his right and walked a kilometre again. Where was he from his house at the end ?

- (A) 1 km away in north
 (B) 1 km away in south
 (C) 1 km away in east
 (D) 1 km away in west

43. Two squads of soldiers A and B, facing East and West respectively received the following commands - Left Turn, About Turn, Right Turn, Left Turn. Which directions would the squads A and B face at the end ?

- (A) East, West (B) West, East
 (C) North, South (D) South, North

Directions : In question nos. 44 and 45, two statements are given, followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be a variance from commonly known facts. You have to decide which of the given conclusions, if any, follow from the given statements.

44. Statements (1) : Due to contamination of water, large number of people were admitted to hospital.

- (2) : The symptoms were of Typhoid.

- Conclusions I : Contamination of water may lead to Typhoid
 II : Typhoid is a contagious disease.

- (A) Only conclusion I is true
 (B) Only conclusion II is true
 (C) Both conclusions I and II are true
 (D) Both conclusions I and II are false

5. Statements (1) : 60% of the government employees went on strike.

(2) : Mr. Gopal is a government employee.

Conclusions I : Mr. Gopal went on strike.

II : Mr. Gopal did not participate in the strike.

(A) Only conclusion I follows

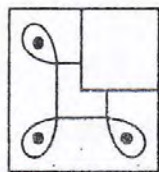
(B) Only conclusion II follows

(C) Both conclusions I and II follow

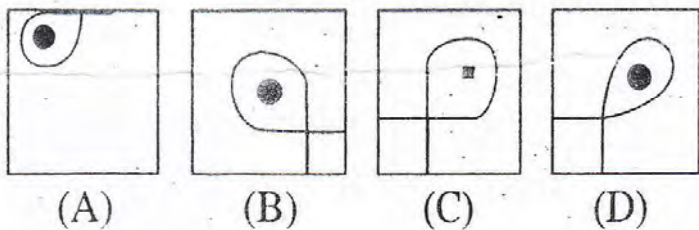
(D) Either conclusion I or II follows

Directions : In question no. 46, which answer figure will complete the question figure ?

6. Question figure

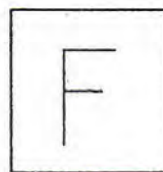


Answer figures

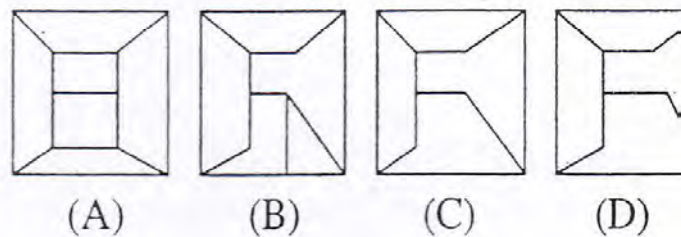


47. From the given answer figures, select the one in which the question figure is hidden embedded.

Question figure



Answer figures

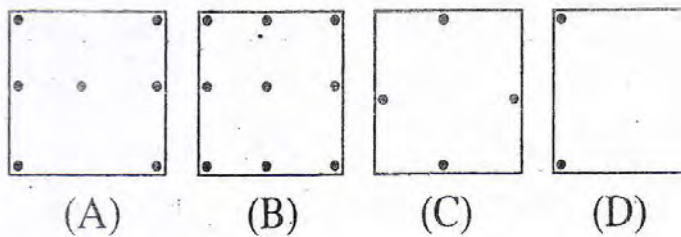


Directions : In question no. 48, a piece of paper is folded and punched as shown below in the question figure. From the given answer figures indicate how it will appear when opened ?

48. Question figure



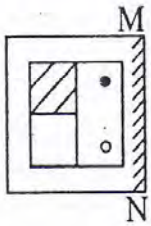
Answer figures



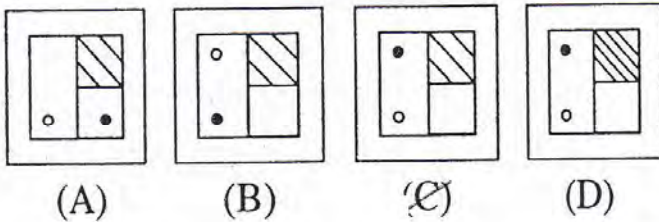
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Directions : In question no. 49, if a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure ?

49. Question figure



Answer figures



Directions : In question no. 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., 'R' can be represented by 13, 22, etc. and 'P' can be represented by 67, 76, etc. Similarly, you have to identify the set for the word SHRI.

50. MATRIX I

	0	1	2	3	4
0	R	H	E	L	I
1	I	E	L	R	H
2	H	L	R	I	E
3	E	R	I	H	L
4	L	I	H	E	R

MATRIX II

	5	6	7	8	9
5	B	S	N	A	D
6	D	N	B	S	A
7	A	B	D	N	S
8	S	D	A	B	N
9	N	A	S	D	B

- (A) 58, 02, 13, 01 (B) 85, 42, 31, 14
(C) 68, 20, 13, 32 (D) 85, 02, 44, 30

46. A is taller than B. B is taller than C and D is taller than A. Who is the tallest among them ?

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

47. Find out the missing number

29, 40, 44, 52, 59, ?

- (A) 73 (B) 66
(C) 67 (D) 74

Directions : In question no. 48, from the given alternatives select the word which *cannot* be formed using the letters given in the word.

48. DISTINGUISHABLE

- (A) GUIDES (B) SIDING
(C) BITING (D) BLEEDING

Directions : In question no. 49, select the related word from the given alternatives.

49. Army : General :: Navy : ?

- (A) Captain (B) Admiral
(C) Commissioner (D) Chief Marshal

50. Find the odd word from the given alternatives

- (A) Broker (B) Salesman
(C) Customer (D) Hawker

GENERAL AWARENESS

51. A movement along the demand curve of a commodity occurs due to change in
 (A) income of the consumers
 (B) its own price
 (C) taste of the consumers
 (D) expectations of the consumers
52. GNP calculation through Expenditure Method does *not* include
 (A) Gross Domestic Private Investments
 (B) Net Foreign Investments
 (C) Depreciation Expenditures
 (D) Private Consumption Expenditure
53. The Lobb-Douglas Production function $Q = AL^a k^{(1-a)}$ is based on
 (A) increasing returns to scale
 (B) decreasing returns to scale
 (C) constant returns to scale
 (D) fluctuating returns to scale
54. Find the odd one out of the following :
 (A) Delhi Transport Corporation
 (B) Indian Railways
 (C) Kingfisher Airlines
 (D) Reliance Industries Limited
55. Monetary Policy in India is laid down and executed by
 (A) Union Government
 (B) ASSOCHAM
 (C) Reserve Bank of India
 (D) FICCI
56. Which one of the following subjects is *not* available on the Union List ?
 (A) Census (B) Banking
 (C) Trade Union (D) Foreign Loans
57. The term "closure" in Parliamentary terminology implies
 (A) the end of session of Parliament
 (B) stoppage of debate on a motion
 (C) end of a day's proceedings
 (D) None of the above
58. Which of the following is *not* correctly matched ?
 (A) Article 14 - Equality before law
 (B) Article 16 - Equal opportunities
 (C) Article 17 - Abolition of titles
 (D) Article 18 - Permission of military titles
59. Which of the following Presidents held office for two consecutive terms ?
 (A) Dr. S. Radhakrishnan
 (B) Dr. Zakir Hussain
 (C) Dr. Rajendra Prasad
 (D) Both (A) and (C)
60. Which Amendment Act reduced the voting age from 21 to 18 ?
 (A) 42nd (B) 44th
 (C) 52nd (D) 61st
61. Match the following :
 a. Vikrama Era : 1. A. D. 248
 b. Saka Era : 2. A. D. 320
 c. Kalachuri Era : 3. 58 B. C.
 d. Gupta Era : 4. A. D. 78
 (A) a1, b2, c3, d4 (B) a3, b4, c1, d2
 (C) a4, b3, c2, d1 (D) a2, b1, c4, d3
62. Mahavira was the
 (A) 21st Tirthankara
 (B) 24th Tirthankara
 (C) 23rd Tirthankara
 (D) 22nd Tirthankara

63. Which one among the following woman scholars challenged the invincible Yajna-
valkya in debate ?

- (A) Ghosa (B) Apala
(C) Maitreyi (D) Gargi

64. Which one of the following event made the crown of England to take over the Indian Administration ?

- (A) Battle of Plassey
(B) Battle of Buxar
(C) The Carnatic Wars
(D) The Sepoy Mutiny

65. Who built the famous Dilwara temple at Mount Abu in Rajasthan in the 13th century ?

- (A) Mahendrapala (B) Mahipala
(C) Rajyapala (D) Tejapala

66. GIS stands for

- (A) Global Institute for Soils
(B) Geographical International Studies
(C) Geographical Information Systems
(D) Global Information Statistics

67. Which of the following is a Trans-Himalayan river ?

- (A) Ganga (B) Yamuna
(C) Sutlej (D) Ravi

68. Match the following using codes given below :

List I (Forest Type)		List II (Regions)	
a. Tropical Evergreen		1. Siwaliks	
b. Monsoon		2. Shillong	
c. Temperate		3. West Bengal	
d. Mangrove		4. Nilgiris	

- | | a | b | c | d |
|-----|---|---|---|---|
| (A) | 2 | 4 | 1 | 3 |
| (B) | 3 | 1 | 4 | 2 |
| (C) | 2 | 1 | 4 | 3 |
| (D) | 3 | 4 | 1 | 2 |

69. On which river is the Nagarjunasagar Project located ?

- (A) Krishna (B) Godavari
(C) Cauvery (D) Tapti

70. Suez canal joins

- (A) Persian Gulf and Arabian Sea
(B) Red Sea and Mediterranean Sea
(C) Mediterranean Sea and Black Sea
(D) Red Sea and Arabian Sea

71. Drug which helps to reduce anxiety and brings about calmness is

- (A) tranquiliser (B) diuretic
(C) analgesic (D) antihistamine

72. A keel is absent in

- (A) Chicken (B) Ostrich
(C) Duck (D) Peacock

73. Broad spectrum antibiotics are produced by

- (A) Streptomyces (B) Aspergillus
(C) Pencillium (D) Bacillus

74. The pigment that protect plants from harmful effect of ultraviolet rays is

- (A) Chlorophyll (B) Carotenoid
(C) Phycocyanin (D) Plastid

75. Glycogen, starch and cellulose are polymers of

- (A) Fructose (B) Glucose
(C) Lactose (D) Maltose

76. Black death is
(A) Cancer (B) Plague
(C) AIDS (D) Gonorrhoea
77. Stars appear to move from east to west because the
(A) whole universe is moving from east to west
(B) earth is revolving round the sun
(C) earth is rotating from east to west
(D) earth is rotating from west to east
78. On the moon, an astronaut cannot drink lemonade with the help of a straw because
(A) acceleration due to gravity on the moon is less
(B) there is no atmosphere on the moon
(C) lemonade evaporates instantaneously on the moon
(D) None of the above
79. A particle moving with uniform speed
(A) must have uniform velocity
(B) cannot have uniform velocity
(C) may have uniform velocity
(D) will have no velocity
80. Device which uses sound waves for detection and ranging is called
(A) Radar (B) Sonar
(C) Pukar (D) None of the above
81. What is the name of the network topology in which there are bi-directional links between each possible node?
(A) Ring (B) Star
(C) Tree (D) Mesh

82. LAN stands for
(A) Local Area Nodes
(B) Large Area Network
(C) Large Area Nodes
(D) Local Area Network
83. Dry Ice is nothing but
(A) Gaseous carbon dioxide
(B) Washing soda
(C) Solid carbon dioxide
(D) Carbon monoxide
84. Which one of the following is obtained as slag in a blast furnace?
(A) Calcium Carbonate
(B) Calcium Sulphate
(C) Calcium Chloride
(D) Calcium Silicate
85. When H_2 gas is allowed to expand from a region of high pressure to a region of low pressure, the temperature of the gas
(A) decreases to a small extent
(B) increases
(C) does not change
(D) decreases suddenly
86. In the industrial production of vegetable ghee, the process involved is
(A) dissociation (B) reduction
(C) oxidation (D) ionisation
87. Which of the following weeds has been found useful to check water pollution caused by industrial effluents?
(A) Parthenium
(B) Elephant grass
(C) Water hyacinth
(D) Duckweed

88. In which year the Chernobyl Nuclear Power Plant of the former USSR had accident that caused escape of radio nuclides into atmosphere ?

- (A) 1979 (B) 1980
(C) 1984 (D) 1986

89. Certain desert lizards excrete their wastes in dry form. This serves as a means of

- (A) protective mechanism against their predators
(B) limiting factor of the organism
(C) adaptation of the organism to the environment
(D) countering the problem of food scarcity

90. Which one is regarded as "World heritage forest" ?

- (A) Nandan Kanan in Odisha
(B) Kaziranga in Assam
(C) Sundarbans in West Bengal
(D) Indian Botanical Garden, Shibpur in West Bengal

91. Kidney can be taken from a dying person who has the

- (A) cessation of neurological function only
(B) cessation of cardiac function only
(C) cessation of respiratory function only
(D) cessation of kidney function only

92. There is no life on moon because it has no

- (A) Nitrogen (B) Sulphur
(C) Oxygen (D) Water

93. Losoong is a festival celebrated in

- (A) Tibet
(B) Arunachal Pradesh
(C) Sikkim
(D) Kerala

94. The commodity for which India spends the largest amount to import is

- (A) Foodgrains
(B) Crude petroleum
(C) Fertilisers
(D) Iron and Steel

95. In which categories did Marie Curie win her two different Nobel Prizes ?

- (A) Physics and Chemistry
(B) Chemistry and Medicine
(C) Physics and Medicine
(D) Chemistry and Peace

96. Michail Phelps won _____ gold medals in swimming events in the Beijing Olympics.

- (A) 6 (B) 7
(C) 8 (D) 9

97. Spot the odd one from the following :

- (A) Tarapur (B) Trombay
(C) Kalpakkam (D) Narora

98. Which one of the following players has the unique distinction of winning 50 Doubles Titles in ATP tour history ?

- (A) Leander Paes
(B) Andy Roddick
(C) Novak Djokovic
(D) Roger Federer

99. As per the 2011 census, the state with the largest gap in male and female literacy is

- (A) Uttar Pradesh
(B) Madhya Pradesh
(C) Rajasthan
(D) Kerala

100. Which among the following is termed 'Hot Money' ?

- (A) FII (B) FDI
(C) ADR (D) GDR

PART - C

QUANTITATIVE APTITUDE

01. What would be the sum of
 $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + \dots$
up to 15th term ?
(A) 250 (B) 240
(C) 225 (D) 265
02. The least number which when divided by
48, 64, 90, 120 will leave the remainders
38, 54, 80, 110 respectively, is
(A) 2870 (B) 2860
(C) 2890 (D) 2880
03. A, B, C subscribe together ₹ 50,000 for a
business. A subscribes ₹ 4,000 more than B
and B ₹ 5,000 more than C. Out of a total
profit of ₹ 35,000, A receives
(A) ₹ 8,500 (B) ₹ 11,998
(C) ₹ 12,600 (D) ₹ 14,700
04. If $1^3 + 2^3 + \dots + 9^3 = 2025$, then the
approx. value of
 $(0.11)^3 + (0.22)^3 + \dots + (0.99)^3$ is
(A) 0.2695 (B) 0.3695
(C) 2.695 (D) 3.695
05. With a two digit prime number, if 18 is
added, we get another prime number with
digits reversed. How many such numbers
are possible ?
(A) 2 (B) 3
(C) 0 (D) 1
106. X and Y can do a piece of work in 30 da
They work together for 6 days and then
quits and Y finishes the work in 32 m
days. In how many days can Y do the pie
of work alone ?
(A) 30 days (B) 32 days
(C) 34 days (D) 40 days
107. A metal pipe of negligible thickness
radius 21 cm and length 90 cm. The ou
curved surface area of the pipe in squ
cm is
(A) 11880 (B) 11680
(C) 11480 (D) 10080
108. A businessman allows a discount of 10
on the written price. How much above
cost price must he mark his goods to ma
a profit of 17% ?
(A) 30% (B) 20%
(C) 27% (D) 18%
109. 465 coins consists of 1 rupee, 50 paise a
25 paise coins. Their values are in the ra
5 : 3 : 1. The number of each type of co
respectively is
(A) 155, 186, 124 (B) 154, 187, 124
(C) 154, 185, 126 (D) 150, 140, 175
110. A batsman makes a score of 58 runs
the 15th innings and thus increases
average by 3 runs. What is the avera
after 15th inning ?
(A) 12 (B) 14
(C) 16 (D) 18

If $x = 3 + 2\sqrt{2}$, then the value of $\sqrt{x} - \frac{1}{\sqrt{x}}$

is

- (A) $\pm 2\sqrt{2}$ (B) ± 2
 (C) $\pm\sqrt{2}$ (D) $\pm\frac{1}{2}$

If $a + b + c = 0$, the value of

$\left(\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab}\right)$ is

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

If a, b, c are real and $a^3 + b^3 + c^3 = 3abc$ and $a + b + c \neq 0$, then the relation between a, b, c will be

- (A) $a + b = c$ (B) $a + c = b$
 (C) $a = b = c$ (D) $b + c = a$

The radius of the circumcircle of the triangle made by x -axis, y -axis and $4x + 3y = 12$ is

- (A) 2 unit (B) 2.5 unit
 (C) 3 unit (D) 4 unit

The length of the circum-radius of a triangle having sides of lengths 12 cm, 16 cm and 20 cm is

- (A) 15 cm (B) 10 cm
 (C) 18 cm (D) 16 cm

If D is the mid-point of the side BC of ΔABC and the area of ΔABD is 16 cm^2 , then the area of ΔABC is

- (A) 16 cm^2 (B) 24 cm^2
 (C) 32 cm^2 (D) 48 cm^2

ABC is a triangle. The medians CD and BE intersect each other at O . Then

$\Delta ODE : \Delta ABC$ is

- (A) 1 : 3 (B) 1 : 4
 (C) 1 : 6 (D) 1 : 12

129. If P, R, T are the area of a parallelogram, a rhombus and a triangle standing on the same base and between the same parallels, which of the following is true?

- (A) $R < P < T$ (B) $P > R > T$
 (C) $R = P = T$ (D) $R = P = 2T$

130. AB is a diameter of the circumcircle of ΔAPB ; N is the foot of the perpendicular drawn from the point P on AB .

$AP = 8 \text{ cm}$ and $BP = 6 \text{ cm}$, then the length of BN is

- (A) 3.6 cm (B) 3 cm
 (C) 3.4 cm (D) 3.5 cm

131. Two circles with same radius r intersect each other and one passes through the centre of the other. Then the length of the common chord is

- (A) r (B) $\sqrt{3}r$
 (C) $\frac{\sqrt{3}}{2}r$ (D) $\sqrt{5}r$

132. The bisector of $\angle A$ of ΔABC cuts BC at D and the circumcircle of the triangle at E . Then

- (A) $AB : AC = BD : DC$
 (B) $AD : AC = AE : AB$
 (C) $AB : AD = AC : AE$
 (D) $AB : AD = AE : AC$

133. Two circles intersect each other at P and Q . PA and PB are two diameters. The $\angle AQB$ is

- (A) 120° (B) 135°
 (C) 160° (D) 180°

O is the centre of the circle passing through the points A, B and C such that $\angle BAO = 30^\circ, \angle BCO = 40^\circ$ and $\angle AOC = x^\circ$. What is the value of x ?

- (A) 70° (B) 140°
(C) 210° (D) 280°

A and B are centres of the two circles whose radii are 5 cm and 2 cm respectively. The direct common tangents to the circles meet AB extended at P . Then P divides AB

- (A) externally in the ratio 5 : 2
(B) internally in the ratio 2 : 5
(C) internally in the ratio 5 : 2
(D) externally in the ratio 7 : 2

A wheel rotates 3.5 times in one second. What time (in seconds) does the wheel take to rotate 55 radian of angle?

- (A) 1.5 (B) 2.5
(C) 3.5 (D) 4.5

If $2y \cos \theta = x \sin \theta$ and $2x \sec \theta - y \operatorname{cosec} \theta = 3$, then the relation between x and y is

- (A) $2x^2 + y^2 = 2$ (B) $x^2 + 4y^2 = 4$
(C) $x^2 + 4y^2 = 1$ (D) $4x^2 + y^2 = 4$

If $\sec \theta + \tan \theta = \sqrt{3}$, then the positive value of $\sin \theta$ is

- (A) 0 (B) $\frac{1}{2}$
(C) $\frac{\sqrt{3}}{2}$ (D) 1

The radian measure of $63^\circ 14' 51''$ is

- (A) $\left(\frac{2811\pi}{8000}\right)^c$ (B) $\left(\frac{3811\pi}{8000}\right)^c$
(C) $\left(\frac{4811\pi}{8000}\right)^c$ (D) $\left(\frac{5811\pi}{8000}\right)^c$

140. In a triangle ABC , $AB = AC$. BA is produced to D in such a manner that $AC = AD$. The circular measure of $\angle BCD$ is

- (A) $\frac{\pi}{6}$ (B) $\frac{\pi}{3}$
(C) $\frac{2\pi}{3}$ (D) $\frac{\pi}{2}$

141. If $\frac{\cos^4 \alpha + \sin^4 \alpha}{\cos^2 \beta + \sin^2 \beta} = 1$, then the value of

$$\frac{\cos^4 \beta + \sin^4 \beta}{\cos^2 \alpha + \sin^2 \alpha}$$
 is

- (A) 4 (B) 0
(C) $\frac{1}{8}$ (D) 1

142. $\frac{\sin \theta - \cos \theta + 1}{\sin \theta + \cos \theta - 1}$ (where $\theta \neq \frac{\pi}{2}$) is equal to

- (A) $\frac{1 + \sin \theta}{\cos \theta}$ (B) $\frac{1 - \sin \theta}{\cos \theta}$
(C) $\frac{1 - \cos \theta}{\sin \theta}$ (D) $\frac{1 + \cos \theta}{\sin \theta}$

143. The angles of elevation of the top of a tower standing on a horizontal plane from two points on a line passing through the foot of the tower at a distance 9 ft and 16 ft respectively are complementary angles. Then the height of the tower is

- (A) 9 ft (B) 12 ft
(C) 16 ft (D) 144 ft

144. If $\sin^2 \alpha = \cos^3 \alpha$, then the value of

$$(\cot^6 \alpha - \cot^2 \alpha)$$
 is

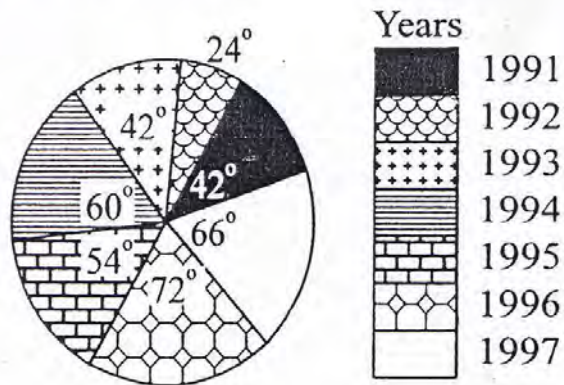
- (A) 1 (B) 0
(C) -1 (D) 2

145. The simplified value of

$$(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \operatorname{cosec} \theta)$$
 is

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

The following pie-chart represents the profits earned by a certain company in seven consecutive years. Study the pie-chart carefully and answer the question nos. 146 to 150.



6. If the expenditure in the year 1993 was 30% more than the expenditure in the year 1991, then the income in the year 1993 exceeds the income in the year 1991 by 30% of
- (A) the income in the year 1991
 (B) the expenditure in the year 1993
 (C) the income in the year 1993
 (D) the expenditure in the year 1991
7. If $x\%$ of the total of profits earned in all the given years is same as the profit earned in the year 1994, then x is
- (A) $16\frac{2}{3}$ (B) $33\frac{1}{3}$
 (C) $12\frac{1}{2}$ (D) $11\frac{2}{3}$
8. The ratios of expenditures and incomes in the years 1992, 1994 and 1996 are given to be 6 : 5 : 8 and 2 : 3 : 4 respectively. The ratio of the income in the year 1996 to the total expenditure in the years 1992 and 1994 is
- (A) 40 : 11 (B) 10 : 7
 (C) 20 : 11 (D) 20 : 13
9. The year in which the profit is nearest to the average of the profits earned in all the given years is
- (A) 1991 (B) 1995
 (C) 1993 (D) 1994

150. If the income in the year 1997 was 5 times the expenditure made in the same year then the ratio of the profit earned in the year 1991 to the expenditure in the year 1997 was
- (A) 11 : 28 (B) 44 : 7
 (C) 28 : 11 (D) 7 : 44

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146. The ratio of A and B is 2 : 3 and the ratio of B and C is 1 : 3 and if A received ₹ 1000 then the amount received by C is
- (A) ₹ 1500 (B) ₹ 2500
 (C) ₹ 4500 (D) ₹ 5000
147. Train A leaves Bangalore for Mysore at 9 A.M. at 40 km/hr and another train B leaves at 12 Noon from Bangalore for Mysore at a higher speed at 80 km/hr. At what time train B will overtake the train A
- (A) 4 P.M. (B) 6 P.M.
 (C) 5 P.M. (D) 3 P.M.
148. On compound interest, a sum becomes 2 times in 3 years. In 9 years, the sum will become
- (A) 6 times (B) 8 times
 (C) 9 times (D) 12 times
149. Two third of a consignment was sold at a profit of 5% and the remainder at a loss of 2%. If the total profit was ₹ 400, the value of the consignment (in rupees) was
- (A) 20,000 (B) 10,000
 (C) 15,000 (D) 12,000
150. For a rectangular parallelepiped, the number of vertices, edges and surfaces are m , n , p . Then the value of $(m + n - p)$ is
- (A) 6 (B) 12
 (C) 14 (D) 2

PART - D

ENGLISH COMPREHENSION

Directions : In question nos. 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 rectangle [■] corresponding to the appropriate letter (A, B, C). If there is no error, blacken the rectangle [■] corresponding to (D) in the Answer-Sheet.

151. Instead of being helpful he was
 (A) (B)
being hindrance. No error.
 (C) (D)
152. Where have I to deposit fees ?
 (A) (B) (C)
No error.
 (D)
153. By the time she had finished her work
 (A)
I had nearly given up
 (B)
all hope of arriving at the party in time.
 (C)
No error.
 (D)
154. Some categorically suspected
 (A)
having seen the guard and thief together.
 (B) (C)
No error.
 (D)

155. He was not in a position to state
 (A) (B)
the speed the ship travelled. No error.
 (C) (D)

Directions : In question nos. 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 rectangle [■] in the Answer-Sheet.

156. I _____ lunch one hour ago.
 (A) have had (B) had had
 (C) have (D) had
157. He thought that my car _____ for sale.
 (A) is (B) was
 (C) has been (D) will be
158. He tried to prevent me _____ doing my duty.
 (A) against (B) at
 (C) with (D) from
159. To the dismay of the student body, the class president was _____ berated by the principal at the school assembly.
 (A) ignominiously (B) privately
 (C) magnanimously (D) fortuitously

160. I would apologize if I _____ you.

- (A) am (B) was
(C) have been (D) were

Directions : In question nos. 161 to 165, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer-Sheet.

161. Gaol

- (A) destination (B) garden
(C) jail (D) bird

162. Loathing

- (A) warmth (B) affectation
(C) hatred (D) affection

163. Pragmatic

- (A) intelligent (B) wise
(C) religious (D) practical

164. Notion

- (A) thought (B) fact
(C) truth (D) hypothesis

165. Vivacious

- (A) poisonous (B) energetic
(C) tricky (D) slow

Directions : In question nos. 166 to 170, choose the word opposite in meaning to the given word and mark it in the Answer-Sheet.

166. Hasten

- (A) Dash (B) Dawdle
(C) Hurry (D) Scurry

167. Spirited

- (A) Animated (B) Excited
(C) Lively (D) Dull

168. Forthright

- (A) Blunt (B) Tricky
(C) Candid (D) Plainspoken

169. Antagonism

- (A) Cordiality (B) Animosity
(C) Hostility (D) Enmity

170. Vanity

- (A) Humanity (B) Humility
(C) Pretension (D) Arrogance

Directions : In question nos. 171 to 175, 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.

171. The project is carried over to this year, and we need to keep the ball rolling.

- (A) to continue the work
(B) more information
(C) to do better
(D) new strategies

172. The host team bore the palm in the league matches.

- (A) played quite well
(B) was victorious
(C) was defeated
(D) played a very boring match.

173. Just keep your wig on. Everything will be alright.

- (A) Hold on to your wig, so it won't fall off
- (B) Get another hair cut
- ~~(C) Calm down~~
- (D) Take off your wig

174. Parents pay through their nose for their children's education.

- (A) by taking loans
- ~~(B) an extremely high price~~
- (C) grudgingly
- (D) willingly

175. Monica's habit of picking holes in every relationship is very irksome.

- (A) admiring people
- ~~(B) finding fault~~
- (C) criticizing people
- (D) arguing with people

Directions : In question nos. 176 to 180, a part of the sentence is underlined. Below are given alternatives to the underlined part at (A), (B), (C) which may improve the sentence. Choose the correct alternative. In case no improvement is needed your answer is (D). Mark your answer in the Answer-Sheet.

176. His life is hanging with a thread.

- (A) from
- (B) by
- ~~(C) to~~
- (D) No improvement

177. After twenty years of exile, the prisoner was in the end of his tether.

- (A) on
- (B) though
- ~~(C) at~~
- (D) No improvement

178. Grandfather is often so tired that he drops of in his armchair.

- (A) slides away
- ~~(B) falls out~~
- (C) slips in
- (D) No improvement

179. The court was forced to respect the profundity of the learned judge's knowledge.

- (A) probity
- (B) proximity
- (C) prodigality
- (D) No improvement

180. He has lost his nearly all many pets.

- (A) all his nearly many pets
- ~~(B) his many pets nearly all of them~~
- (C) nearly all his many pets
- (D) No improvement

Directions : In question nos. 181 to 185, out of the four alternatives choose the one which can be substituted for the given words/sentence.

181. A group of three books, films etc. that have the same subject or characters

- (A) trinity
- ~~(B) trilogy~~
- (C) trio
- (D) tripod

191. What is the difference between the old man and the North Pole, the Everest and the Alps ?

- (A) he ponders over his hubble-bubble while they don't
- (B) they are known to all while he is known to none
- (C) they remain while he will soon become dust
- (D) they are not as old as he

192. What, according to the passage, happens to a person's soul after death ?

- (A) the soul also dies with the body
- (B) the soul continues to live after the body is dead
- (C) the soul certainly becomes dust after death
- (D) it is dangerous to guess

193. Which of the following statement is true ?

- (A) The rising sun told Tagore who he was
- (B) The rising sun did not tell Tagore who he was
- (C) The rising sun advised Tagore to ask no questions
- (D) The rising sun told Tagore that he would become dust

194. What happens to man after he becomes dust ?

- (A) he disappears from the world for ever
- (B) he appears in the form of man again
- (C) he becomes all pervasive as dust
- (D) he often sneaks into hermetically sealed chambers

195. What figure of speech is used in the expression 'the brother of sleep' ?

- (A) Simile
- (B) Metaphor
- (C) Oxymoron
- (D) Irony

To write well you have to be able to write clearly and logically, and you cannot do this unless you can think clearly and logically. If you cannot do this yet you should train yourself to do it by taking particular problems and following them through, point by point, to a solution, without leaving anything out and without avoiding any difficulties that you meet.

At first you find clear, step-by-step thought very difficult. You may find that your mind is not able to concentrate. Several unconnected ideas may occur together. But practice will improve your ability to concentrate on a single idea and think about it clearly and logically. In order to increase your vocabulary and to improve your style, you should read widely and use a good dictionary to help you find the exact meanings and correct usages of words.

Always remember that regular and frequent practice is necessary if you want to learn to write well. It is no good waiting until you have an inspiration before you write. Even with the most famous writers, inspiration is rare. Someone said that writing is ninety-nine per cent hard work and one per cent inspiration, so the sooner you get into the habit of disciplining yourself to write, the better.

196. To write well, a person must train himself in

- (A) dealing with a difficult problem
- (B) not leaving anything out
- (C) thinking clearly and logically
- (D) following a step-by-step approach

197. Initially it is difficult to write because

- (A) a good dictionary is not used X
- (B) ideas occur without any sequence
- (C) aids to correct writing are not known X
- (D) exact usages of words are not known

198. According to the passage, writing style can be improved by

- (A) thinking logically
- (B) writing clearly
- (C) undergoing training
- (D) reading widely

199. Famous writers have achieved success by

- (A) using their linguistic resources properly
- (B) disciplining their skill
- (C) following only one idea
- (D) waiting for inspiration

200. All the following words mean 'exact' except

- (A) precise
- (B) accurate
- (C) very
- (D) erect