

CPO SI Exam
Paper
Held On
27-05-2012
(2nd Sitting
English)

PART - A : GENERAL INTELLIGENCE & REASONING

Directions : In questions no. 1 to 9, select the related letter/word/number from the given alternatives.

1. Asthma : Lungs :: Conjunctivitis : ?
 (A) Eyes (B) Blood
 (C) Bones (D) Teeth
2. Communicable disease : Malaria :: Non-communicable disease : ?
 (A) AIDS
 (B) Cancer
 (C) Tuberculosis
 (D) Hepatitis
3. Thermometer : Temperature :: Glucometer : ?
 (A) Blood (B) Blood sugar
 (C) Body sugar (D) Body resistance
4. Dismay : Joy :: Tend : ?
 (A) Negligible (B) Spoil
 (C) Regret (D) Ignore
5. DCBA : WXYZ :: ? : ZYXW
 (A) CBAD (B) BCDA
 (C) ABCD (D) ABDC
6. SKIT : TIKS :: ? : FLAP
 (A) PLAF (B) PALF
 (C) PLFA (D) PFAL
7. 6 : 72 :: 8 : ?
 (A) 74 (B) 92
 (C) 94 (D) 96
8. 6 : 36 :: 9 : ?
 (A) 42 (B) 56
 (C) 81 (D) 98
9. 384 : ? :: 216 : 63
 (A) 113 (B) 192
 (C) 128 (D) 124

Directions : In questions no. 10 to 14, find the odd word/number/letters from the given alternatives.

10. (A) Paper (B) Envelope
 (C) Pen (D) Letter-head
11. (A) Tab (B) Hold
 (C) Reed (D) Pit
12. (A) 4623 (B) 9781
 (C) 4249 (D) 7586
13. (A) bb dd ff hh (B) kk mm oo qq
 (C) ee gg ii kk (D) pp rr tt uu
14. (A) D (B) I
 (C) X (D) P

Directions : In questions no 15 to 23, a series are given, with one term missing. Choose the correct alternative from the given one that will complete the series.

15. EAB, GCD, MIJ, ?

- (A) OKL (B) FOP
(C) ROP (D) QOP

16. ACE, BDF, GIK, ?

- (A) HJL (B) MJH
(C) JHM (D) HJI

17. WBP, SGM, OLJ, ?

- (A) LPG (B) MQG
(C) NPH (D) KQG

18. DEF, HIJ, MNO, ?

- (A) RST (B) STU
(C) RTV (D) SRQ

19. CDF, DEG, EFH, ?

- (A) FGH (B) FGI
(C) FHG (D) EFI

20. ZA, VC, RE, NG, ? , FK

- (A) IJ (B) JI
(C) OH (D) KI

21. 4, 16, 36, ? , 100

- (A) 48 (B) 52
(C) 56 (D) 64

22. 2, 3, 10, 15, 26, ?

- (A) 35 (B) 24
(C) 30 (D) 52

23. 12, 23, 34, 45, ? , 67, 78, 89

- (A) 56 (B) 54
(C) 76 (D) 69

24. Find out the set among the four sets which is like the given set.

Given set : (9, 27, 108)

- (A) (5, 15, 75) (B) (11, 33, 132)
(C) (15, 45, 90) (D) (8, 32, 96)

25. Number of letters skipped in between adjacent letters in the series is two. Which one of the following alternatives observes this rule ?

- (A) SPMLI (B) TSPNKH
(C) UROLIF (D) WTQNKJ

26. Choose the synonym for the given word from the given options.

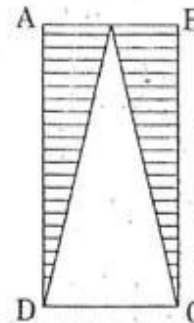
'Exposition'

- (A) Elucidation (B) Revelation
(C) Examination (D) Expression

27. If $20 + 15 = 24$ and $64 + 13 = 42$, then $11 + 28 = ?$

- (A) 31 (B) 34
(C) 33 (D) 36

28. In the diagram alongside, $AD = 2 AB = d$. What is the area of the shaded portion ?



- (A) $d^2/2$ (B) $d^2/4$
(C) $2d^2$ (D) $d/2$

29. Laxmi started walking Southwards and after covering a distance of 30 m, she turned left. She walked 25 meters, and turned to the left and again walked 30 meters. How far is she from the starting point and in which direction ?
- (A) 25 m East (B) 30 m East
(C) 20 m West (D) 25 m West
30. In a certain code, 'CAPITAL' is written as 'CPATILA'. How is 'PERSONS' written in that code ?
- (A) PESONRS (B) PREOSSN
(C) PSONRES (D) PONSRES
31. If PAINT is coded as 74128 and EXCEL is coded as 93596, then how would you encode ACCEPT ?
- (A) 554978 (B) 547978
(C) 455978 (D) 735961
32. In the following problem :
 = stands for \div
 + stands for $-$
 \times stands for $=$
 - stands for $>$
 > stands for $+$
 < stands for \times
 \div stands for $<$
- When these new symbols are substituted, only one will be correct. Identify the correct equation.
- (A) $24 = 4 > 5 \times 17 > 13$
 (B) $24 + 4 = 5 \times 17 + 13$
 (C) $24 = 4 > 5 \times 17 + 13$
 (D) $24 > 4 + 5 \times 17 + 13$
33. Some equations are solved on the basis of a certain principle. On the same basis, find the correct answer from among the alternatives given.
- $27(18)3; 216(180)6; 729(\quad)9$
- (A) 81 (B) 648
(C) 810 (D) 700
34. Karan facing towards South moved straight 2 km and from there, turned to his right 90° and travelled 2 km. Then, he took a 45° turn to his left and travelled 1 km. Where would he be now with respect to the starting point ?
- (A) South region
(B) South East region
(C) North West region
(D) South West region
35. Reena walks 4 km East and then cycles 10 km North, turns to the left and covers 4 km and once again turns to the North and moves 2 km. How far is she from the starting point ?
- (A) 8 km (B) 12 km
(C) 10 km (D) 14 km

Directions : In question no. 36, two statements are followed by two assumptions I and II. You have to consider the statements to be true, even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, definitely follows from the given statements.

36. **Statements :**

1. Parental role in the education of their children is very significant.
2. All parents must realise this.

Conclusions :

- I. Parentless children cannot develop to their maximum potential.
- II. Parents can help their children in their education.

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

37. Find out the number which does **not** belong to the group of ABCD.

(A) $\frac{4}{5} \frac{112}{8}$

(B) $\frac{7}{3} \frac{22}{2}$

(C) $\frac{3}{5} \frac{48}{4}$

(D) $\frac{5}{3} \frac{24}{2}$

Directions : In questions no. 38 to 40, select the missing number from the given responses.

38. $\begin{matrix} 8 & (14) & 15 \\ 13 & (18) & 22 \\ 25 & (?) & 41 \end{matrix}$

- (A) 14 (B) 32
(C) 33 (D) 42

39. $\begin{matrix} 5 & 7 & 4 & 39 \\ 6 & 9 & 5 & 59 \\ 7 & 11 & ? & 83 \end{matrix}$

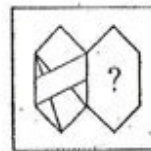
- (A) 4 (B) 8
(C) 6 (D) 7

40. $\begin{matrix} 8 & 16 & 10 \\ 2 & 8 & 5 \\ 4 & ? & 9 \\ 8 & 5 & 11 \end{matrix}$

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

Directions : In question no. 41, which answer figure will complete the question figure?

41. **Question figure :**



Answer figures :



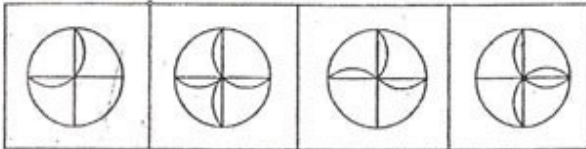
- (A) (B) (C) (D)

42. Select the answer figure in which the question figure is hidden.

Question figure :



Answer figures :



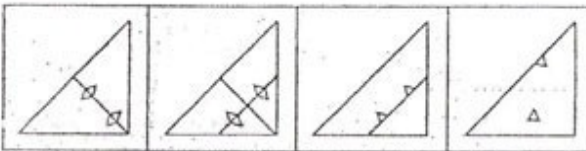
(A) (B) (C) (D)

43. A triangular sheet of paper has been folded and punched as shown in the figure. You have to figure out from amongst the four response figures, how it will appear when opened ?

Question figures :



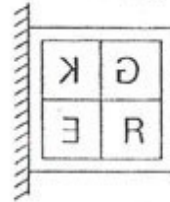
Answer figures :



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

44. Which of the answer figures is exactly the mirror image of the given figure, when the mirror is held as shown ?

Question figure :



Answer figures :



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

45. 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 the 2 matrices given below. The columns and rows of matrix I are numbered from 0 to 4 and that of matrix II from 5 to 9. A letter from these matrices can be represented first by its row and next column number. e.g. 'F' can be represented by 14, 21, etc. 'S' can be represented by 58, 96, etc. Similarly, identify the word TRIP.

MATRIX I

	0	1	2	3	4
0	D	E	F	I	N
1	I	N	D	E	F
2	E	F	I	N	D
3	N	D	E	F	I
4	F	I	N	D	E

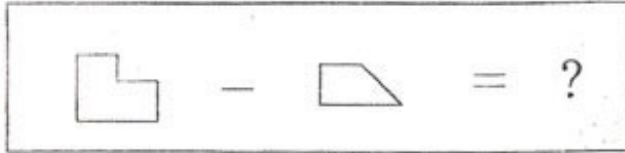
MATRIX II

	5	6	7	8	9
5	O	P	R	S	T
6	S	T	O	P	R
7	P	R	S	T	O
8	T	O	P	R	S
9	R	S	T	O	P

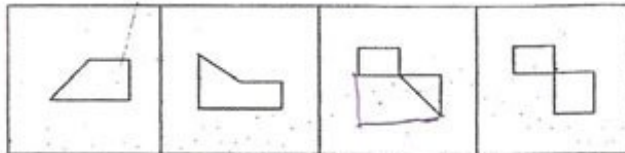
- (A) 85, 88, 33, 89 (B) 66, 69, 40, 69
(C) 78, 76, 21, 76 (D) 59, 57, 41, 56

46. In the question, one part of the problem figure is subtracted. Select the option that shows the correct shape after subtraction.

Question figure :



Answer figures :



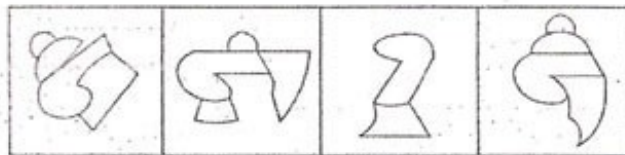
(A) (B) (C) (D)

47. Identify the answer figure from which the pieces given in question figure have been cut.

Question figure :

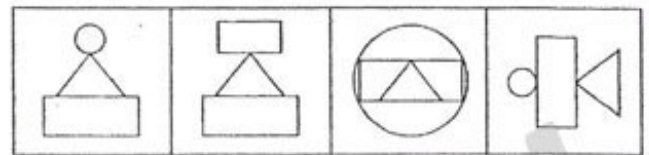


Answer figures :



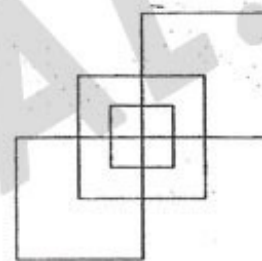
(A) (B) (C) (D)

48. If a person has intelligence, character and position, which figure represents all of these ?



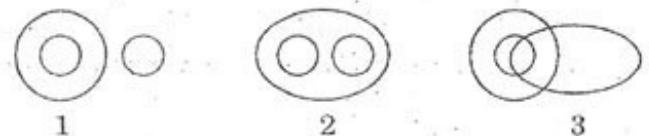
(A) (B) (C) (D)

49. How many squares are there in a given figure ?

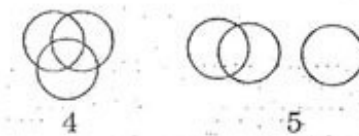


(A) 10 (B) 11
(C) 12 (D) 13

50. Which figure represents the relationship among Hockey players, Rubber balls, Poets ?



1 2 3



4 5

(A) 2 (B) 5
(C) 1 (D) 4

PART - B : GENERAL KNOWLEDGE & GENERAL AWARENESS

51. 'Economic Survey of India' is published every year by
- Ministry of Commerce
 - C.S.O.
 - Ministry of Finance
 - Ministry of Economic Affairs
52. When labour supply curve bends backward,
- income becomes an inferior commodity
 - work becomes an inferior commodity
 - leisure becomes an inferior commodity
 - people become lazy at higher wage level
53. The term 'food security' implies
- sufficient supplies of food at affordable prices
 - abundance of food with assurance to enjoy
 - availability of food of superior and nutritious quality
 - balanced food with secure conditions
54. Which one of the following is an example for derived demand ?
- Rice
 - Textiles
 - Cosmetics
 - Cement
55. Which one of the following factors does *not* shift the demand curve for a product to the right ?
- Successful advertising
 - A fall in the price of its complements
 - A rise in the price of its substitutes
 - A fall in the price of the product itself
56. Who among the following makes laws in India ?
- President and the Council of Ministers
 - Supreme Court and the High Courts
 - President and the two Houses of Parliament
 - Lok Sabha and Rajya Sabha
57. The Indian Constitution envisages not only a democratic form of government but also a democratic society, because it is infused with the spirit of
- Justice
 - Liberty
 - Equality
 - Fraternity
- Which is the correct answer code ?
- (i) and (ii)
 - (ii) and (iii)
 - (i) and (iii)
 - (i), (ii), (iii) & (iv).
58. Which of the following methods is used in the election of members of the Lok Sabha ?
- Communal Representation
 - Functional Representation
 - Proportional Representation
 - Territorial Representation
59. Which one of the following States enjoys the distinction of being the first linguistic State of India ?
- West Bengal
 - Andhra Pradesh
 - Tamil Nadu
 - Punjab

60. The Central Government gives grants-in-aid to the States out of the Consolidated Fund of India on the basis of the recommendations of the
- (A) Planning Commission
(B) Union Finance Minister
(C) Finance Commission
(D) National Development Council
61. What was the other name of Nana Sahib ?
- (A) Ramachandra Panduranga
(B) Dhondu Pant
(C) Tantia Tope
(D) Kunwar Singh
62. Match the following literary works with their authors :
- | | |
|-----------------------|-------------------|
| a. Kavirajamarga | 1. Mahaviracharya |
| b. Adipurana | 2. Sakatayana |
| c. Ganitasarasamgraha | 3. Amoghavarsha |
| d. Amoghavriti | 4. Jinasena |
- | | | | |
|-------|---|---|---|
| a | b | c | d |
| (A) 3 | 4 | 2 | 1 |
| (B) 4 | 3 | 1 | 2 |
| (C) 3 | 4 | 1 | 2 |
| (D) 2 | 1 | 3 | 4 |
63. Who was the Russian leader when the Indo-Soviet Treaty of Friendship and Co-operation was signed between India and Russia ?
- (A) Nikita Khrushchev
(B) Leonid Brezhnev
(C) Yuri Andropov
(D) Mikhail Gorbachev
64. 'Kesari' was
- (A) an organisation for social reform started by Tilak
(B) an English language paper owned by S.N. Banerjee
(C) a Marathi newspaper
(D) a Tamil weekly
65. The greatest Portuguese Governor who laid the real foundation of Portuguese power in India was
- (A) Almeda
(B) Albuquerque
(C) Francis Drake
(D) Vasco-da-Gama
66. Land jutting out into the sea is called
- (A) Strait
(B) Peninsula
(C) Isthmus
(D) Island
67. The Kulu Valley is situated between the mountain ranges of
- (A) Ladakh and Pir Panjal
(B) Lesser Himalayas and Siwalik
(C) Dhauladhar and Pir Panjal
(D) Ranjoti and Nanga Parbat
68. Which of the following is the leading sediment transporting river in India ?
- (A) Ganges (B) Indus
(C) Brahmaputra (D) Yamuna
69. Match the following :
- | | |
|--------------------|-------------------------------|
| a. Tiruchirappalli | 1. Locomotives |
| b. Visakhapatnam | 2. Tank factory |
| c. Avadi | 3. Heavy Electricals Industry |
| d. Chittaranjan | 4. Ship building |
- | | | | |
|-------|---|---|---|
| a | b | c | d |
| (A) 1 | 2 | 4 | 3 |
| (B) 4 | 3 | 1 | 2 |
| (C) 3 | 4 | 2 | 1 |
| (D) 2 | 1 | 3 | 4 |

70. Which of the following statements is correct ?
 (A) Capacity of air to hold moisture decreases with a rise in temperature of air
 (B) The air pressure decreases with an increase in temperature
 (C) Absolute humidity is expressed in grams per cubic metre of air
 (D) With an ascent of every 165 metres, the temperature is reduced by 1°C
71. The most dangerous consequence of excessive deforestation is
 (A) loss of forest wealth
 (B) loss of many valuable plants
 (C) destruction of wild animal habitats
 (D) soil erosion
72. A plant bearing both male and female flowers is called
 (A) Bisexual
 (B) Dioecious
 (C) Monoecious
 (D) Monogamous
73. Photosynthesis needs
 (A) Sunlight (B) Water
 (C) Chlorophyll (D) All the above
74. 'Jhum' is
 (A) a folk dance
 (B) the name of a river
 (C) a tribe in the North-East of India
 (D) a type of cultivation
75. The most important stimulant in tea leaves is
 (A) Brucine (B) Caffeine
 (C) Phenylalanine (D) Theine
76. Quinine is obtained from a plant. What part of the plant yields the drug ?
 (A) Leaves
 (B) Fruits
 (C) Root
 (D) Stem bark
77. The computer memory holds data
 (A) bytes (B) program
 (C) registers (D) bits
78. Which one of the following is a mobile operating system ?
 (A) WINDOWS-NT
 (B) WINDOWS-XP
 (C) BREW-OS
 (D) Symbian-OS
79. Match the following :
- | <u>Alloy</u> | <u>Composition</u> |
|------------------|-------------------------|
| a. Bronze | 1. Lead, antimony, tin |
| b. Brass | 2. Copper, zinc, nickel |
| c. German Silver | 3. Copper, zinc |
| d. Type metal | 4. Copper, tin |
- | | a | b | c | d |
|-----|---|---|---|---|
| (A) | 1 | 4 | 3 | 2 |
| (B) | 2 | 1 | 4 | 3 |
| (C) | 3 | 2 | 1 | 4 |
| (D) | 4 | 3 | 2 | 1 |
80. Pressure cooker is fast in cooking rice because
 (A) it lets the steam escape
 (B) it does not let the heat energy escape easily
 (C) high pressure crushes the hard covering of rice grains
 (D) high pressure raises the boiling point of water

81. It is not advisable to sleep under a tree at night because of the
 (A) release of less oxygen
 (B) release of more oxygen
 (C) release of carbon dioxide
 (D) release of carbon monoxide
82. It takes more time to cook potatoes on mountain tops because the
 (A) atmospheric pressure is high
 (B) atmospheric pressure is low
 (C) temperature at the top of the mountain is lower than at sea level
 (D) temperature at the top of the mountain is higher
83. The calorie requirement of the body increases in winter as compared to summer because more calories are necessary to
 (A) make more fat in the body
 (B) compensate for falling hair
 (C) sustain body temperature
 (D) break more proteins
84. Water and ice crystals are in equilibrium at 0°C . When pressure is applied to this system
 (A) water changes to vapour
 (B) more amount of ice is formed
 (C) more of ice becomes water
 (D) no effective change occurs
85. Match the following :
- | | |
|--------------------|----------------|
| a. Copper sulphate | 1. Fertiliser |
| b. Penicillin | 2. Insecticide |
| c. Urea | 3. Fungicide |
| d. Malathion | 4. Antibiotic |
-
- | | a | b | c | d |
|-----|---|---|---|---|
| (A) | 1 | 2 | 3 | 4 |
| (B) | 2 | 4 | 1 | 3 |
| (C) | 3 | 4 | 1 | 2 |
| (D) | 4 | 3 | 2 | 1 |
86. Heavy water implies
 (A) water which is used in heavy industries
 (B) deuterated water
 (C) water which has maximum density
 (D) water which contains SO_4^{2-} and Cl^- of calcium and magnesium
87. When plant diversity is maintained in natural habitat, the conservation is called
 (A) in vivo (B) in vitro
 (C) ex situ (D) in situ
88. Flyash is the environmental pollutant generated by
 (A) Fertilizer plant
 (B) Cement industry
 (C) Thermal power plant
 (D) Flour mills
89. What does the term 'Lithosphere' refer to ?
 (A) Plants and animals
 (B) Interior of the Earth
 (C) Crust of the Earth
 (D) None of the above
90. Which of the following has been found useful to check water pollution caused by industrial effluents ?
 (A) Water hyacinth
 (B) Elephant grass
 (C) Parthenium
 (D) Both (B) and (C)

91. Which part of throat in men is called Adam's apple ?
 (A) Cricoid cartilage
 (B) Larynx
 (C) Bronchi
 (D) Thyroid cartilage
92. Tummalapalli in Andhra Pradesh has come on the world map for discovery of
 (A) largest tungsten mines
 (B) largest uranium mines
 (C) largest coal mines
 (D) largest mica mines
93. GSLV Project of India is connected with
 (A) Agriculture development
 (B) Conservation of river water
 (C) Banking system
 (D) Missile engines for space programmes
94. Rajiv Gandhi Khel Ratna Award for 2011 was conferred on
 (A) Gagan Narang
 (B) M.S. Dhoni
 (C) Sania Mirza
 (D) Sushil Kumar
95. Man Booker Prize for 2011 was won by _____ for his work 'The Sense of An Ending'.
 (A) Julian Barnes
 (B) Vikas Swarup
 (C) Aravind Adiga
 (D) V.C. Govindaraj
96. The human body remains uncrushed even under high atmospheric pressure mainly due to presence of
 (A) strong will power
 (B) strong musculature
 (C) tough skeleton system
 (D) fluid in the cells
97. Which country is hosting the 2012 Olympic Games ?
 (A) U.K. (B) Germany
 (C) U.S.A. (D) South Korea
98. Which Union Territory is at the bottom of the child-sex ratio as per the 2011 census (provisional data) ?
 (A) Dadra and Nagar Haveli
 (B) Daman and Diu
 (C) Chandigarh
 (D) Andaman and Nicobar Islands
99. Which of the following is the rank of India in Human Development Report 2010 prepared by the UNO ?
 (A) 100 (B) 113
 (C) 116 (D) 119
100. FCCBs have become a popular route to raise capital by several companies. The full form of the FCCBs is
 (A) Foreign Currency Convertible Bonds
 (B) Foreign Countries' Convertible Bonds
 (C) Foreign Companies' Convertible Bonds
 (D) None of the above

PART - C : QUANTITATIVE APTITUDE

101. The number of times 2 is used while writing the numbers from 1 to 100 is
(A) 21 (B) 20
(C) 19 (D) 18
102. If $0.38 \times 7.2 = 2.736$, then 38×0.0072 is
(A) 2736 (B) 0.2736
(C) 27.36 (D) 273.6
103. If the product of two numbers is 2160 and the HCF is 6, then the ratio of HCF and LCM is
(A) 21 : 60 (B) 60 : 21
(C) 1 : 60 (D) 60 : 1
104. The next term of the sequence 3, 14, 39, ... is
(A) 42 (B) 53
(C) 65 (D) 84
105. The value of $\frac{\sqrt{0.2304} + \sqrt{0.1764}}{\sqrt{0.2304} - \sqrt{0.1764}}$ is
(A) 6 (B) 28
(C) 18 (D) 15
106. P and Q can finish a work in 15, 10 days respectively. Q starts the work and leaves it after 5 days. The number of days in which P can complete the work is
(A) $6\frac{1}{2}$ days (B) $7\frac{1}{2}$ days
(C) 8 days (D) 9 days
107. A tank can be filled by pipe A in 2 hours and by pipe B in 3 hours. An outlet C can empty the tank in 6 hours. If all the three are opened simultaneously, the tank will be filled in
(A) 1 hour (B) $1\frac{1}{2}$ hours
(C) 2 hours (D) $1\frac{1}{3}$ hours
108. The difference (in rupees) in discounts between two successive discounts of 8% each and a single discount of 16% on ₹ 1,000 is
(A) 64 (B) 6.40
(C) 4.60 (D) 46
109. If a shopkeeper marks the price of goods 50% more than their cost price and allows a discount of 40%, what is his gain or loss percent?
(A) Gain 10% (B) Gain 15%
(C) Loss 15% (D) Loss 10%
110. Two numbers are in the ratio 9 : 16. If each number is increased by 15, then the ratio becomes 2 : 3. The numbers are
(A) 18 and 32 (B) 24 and 36
(C) 36 and 48 (D) 27 and 48
111. The weights of zinc, copper and aluminium in an alloy are in the ratio 2 : 3 : 7. In the alloy weighing 48 kg, the difference in weights of zinc and aluminium is
(A) 5 kg (B) 16 kg
(C) 20 kg (D) 4 kg

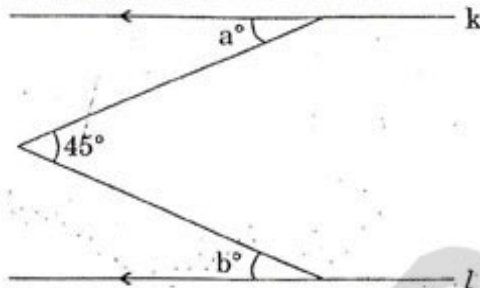
112. A cricketer scored 180 runs in the first test and 258 runs in the second. How many runs should he score in the third test so that his average score in the three tests would be 230 runs ?
 (A) 210 (B) 245
 (C) 270 (D) 252
113. The average weight of 8 persons is increased by 2.5 kg when one of them whose weight is 56 kg is replaced by a new man. The weight of the new man is
 (A) 20 kg (B) 64 kg
 (C) 58.5 kg (D) 76 kg
114. A bought a computer system for ₹ 40,000 and sold it to B at a loss of 4%. If B sold it to C for ₹ 40,320, profit percent for B is
 (A) 4 (B) 5
 (C) 3 (D) 6
115. The difference between the selling price of a shirt sold at profits 15% and 17% is ₹ 3. Then the cost price of the shirt is
 (A) ₹ 200 (B) ₹ 150
 (C) ₹ 175 (D) ₹ 180
116. Out of a total population of 5,000 people in a village, men increased by 10% and women by 15%. Now the total population becomes 5,600 in a year. The women population in the village was originally
 (A) 2,000 (B) 3,000
 (C) 4,000 (D) 3,500
117. Ratan's expenditure and savings are in the ratio 5 : 1. If his salary is increased by 25% and savings by 15%, the percentage increase in his expenditure is
 (A) 18% (B) 27%
 (C) 28% (D) 32%
118. Cyclist A started his journey on cycle at 7:30 a.m. at a speed of 8 km/hr. After 30 minutes, cyclist B started from the same place but with a speed of 10 km/hr. At what time did B overtake A ?
 (A) 8 a.m. (B) 10 a.m.
 (C) 9 a.m. (D) 9.30 a.m.
119. If the simple interest on a certain sum of money for three years is ₹ 225 and the compound interest on the same sum at the same rate for 2 years is ₹ 153, then the principal invested, in rupees, is
 (A) 1,500 (B) 2,250
 (C) 3,000 (D) 1,875
120. If from a point inside an equilateral triangle, the lengths of perpendiculars on the sides are 5 cm, 10 cm, and 15 cm. respectively, then the height of the triangle is
 (A) 10 cm (B) 30 cm
 (C) 40 cm (D) 20 cm
121. The areas of a square and a rectangle with equal perimeter are denoted by S and R respectively. Which one of the following is correct ?
 (A) $S = R$ (B) $S > R$
 (C) $S < R$ (D) $S = 2R$

122. If the radius of a circle is increased by 10%, then percentage of increase of its area is
 (A) 12 (B) 15
 (C) 17 (D) 21
123. Semi-vertical angle of a right circular cone is 30° . If the ratio of the numerical value of the volume and slant surface area be $1 : 3$, the radius of the base is
 (A) 1 unit (B) 2 units
 (C) $\sqrt{3}$ unit (D) 3 units
124. If the height and radius of a hemisphere and a right circular cylinder are respectively equal, then ratio of the volume of the hemisphere and the cylinder is
 (A) $2 : 3$ (B) $3 : 2$
 (C) $1 : 2$ (D) $1 : 1$
125. Each of the five angles of a polygon is equal to 172° and the other angles are 160° each. The number of sides of the polygon is
 (A) 20 (B) 21
 (C) 22 (D) 23
126. The volume of a solid hemisphere is numerically equal to its total surface area. Its radius is
 (A) 3 units (B) $1\frac{1}{2}$ units
 (C) $4\frac{1}{2}$ units (D) 9 units
127. If $x = 2t$ and $y = \frac{2t-1}{3}$, then what is the value of t for which $x = y$ holds?
 (A) $\frac{1}{4}$ (B) $-\frac{1}{2}$
 (C) $\frac{1}{3}$ (D) $-\frac{1}{4}$
128. If x and y be two real numbers and $x + y = 8$, then the greatest value of xy is
 (A) 12 (B) 15
 (C) 16 (D) 18
129. If $x = \sqrt{\frac{\sqrt{5}+1}{\sqrt{5}-1}}$, value of $x^2 + x - 1$ is
 (A) $\sqrt{5}$ (B) 2
 (C) $-\sqrt{5}$ (D) 0
130. The value of k for which the system of equations $x + 2y = 5$, $3x + ky + 15 = 0$ has no solution, is
 (A) 6 (B) -6
 (C) 2 (D) -2
131. Equations of the straight lines containing two sides of a right-angled triangle are given by $y = x$ and $y = 0$. Of the following, the equation which **cannot** represent the third side is
 (A) $x = 5$ (B) $x = 2$
 (C) $x = 0$ (D) $x = -3$

132. If in any triangle ABC, the base BC is produced in both ways, the sum of the exterior angles at B and C is

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

133. In the figure below, lines k and l are parallel. The value of $a^\circ + b^\circ$ is



(A) 45° (B) 100°
 (C) 180° (D) 360°

134. SR is a direct common tangent to the circles of radii 8 cm and 3 cm respectively, their centres being 13 cm apart. If the points S and R are the respective points of contact, then the length of SR is

(A) 12 cm (B) 11 cm
 (C) 17 cm (D) 10 cm

135. The bisector of the angle BAC of a triangle APC intersects the side BC at the point D and meets the circumcircle of the ΔABC at E. Then, it is always true that $AB \cdot AC + DE \cdot AE =$

(A) AD^2 (B) AE^2
 (C) CE^2 (D) CD^2

136. In ΔABC , $\angle B = 90^\circ$, $\angle C = 45^\circ$ and D is the midpoint of AC. If $AC = 4\sqrt{2}$ units, then BD is

(A) $2\sqrt{2}$ units (B) $4\sqrt{2}$ units
 (C) $\frac{5}{2}$ units (D) 2 units

137. $\sin^2 21^\circ + \sin^2 69^\circ$ is equal to

(A) 1 (B) 0
 (C) $2 \sin^2 21^\circ$ (D) $2 \sin^2 69^\circ$

138. The angles of elevation of the top of a tower from two points at a distance x and y from the foot of the tower are complementary. The height of the tower is

(A) $\sqrt{\frac{x}{y}}$ (B) $\sqrt{x+y}$
 (C) \sqrt{xy} (D) $\frac{x}{y}$

139. The value of

$$\sin^2 5^\circ + \sin^2 25^\circ + \sin^2 45^\circ + \sin^2 65^\circ + \sin^2 85^\circ$$

is equal to

(A) 1.5 (B) 2
 (C) 2.5 (D) 3

140. If $\sin(A + B) = 1$ and $\cos(A - B) = \frac{\sqrt{3}}{2}$, where A and B are positive acute angles with $A \geq B$, then A and B are

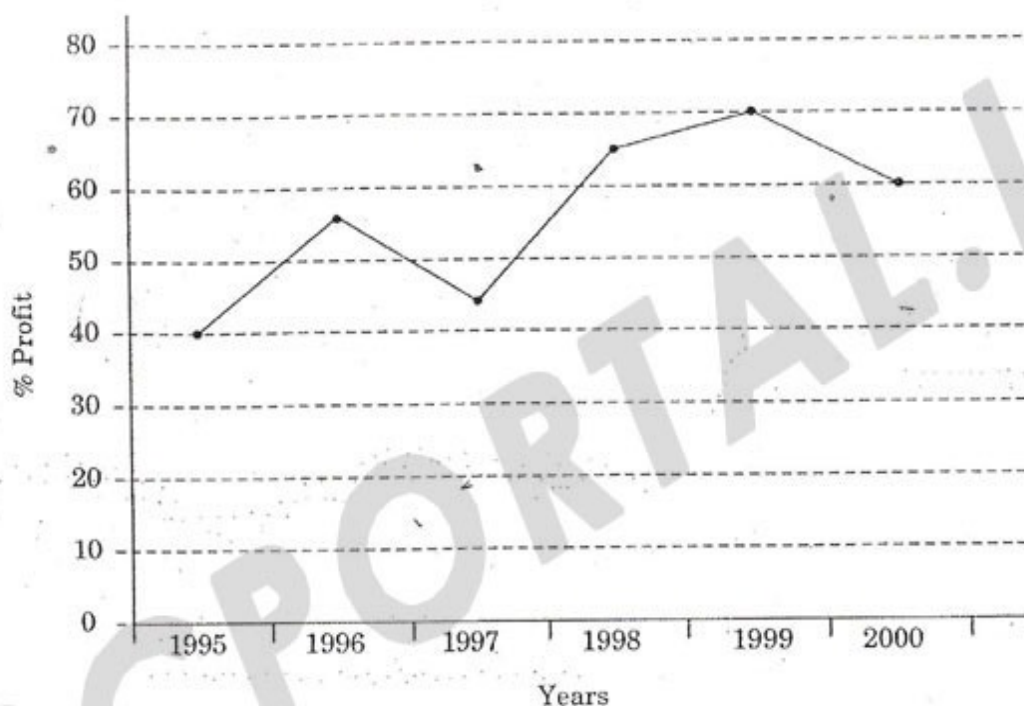
(A) $A = 75^\circ$, $B = 15^\circ$
 (B) $A = 60^\circ$, $B = 30^\circ$
 (C) $A = 45^\circ$, $B = 45^\circ$
 (D) None of these

141. If $3 \sin^2 \alpha + 7 \cos^2 \alpha = 4$, then the value of $\tan \alpha$ is (where $0 < \alpha < 90^\circ$)

(A) $\sqrt{2}$ (B) $\sqrt{5}$
 (C) $\sqrt{3}$ (D) $\sqrt{6}$

Directions : The following line-graph gives the annual percent profit earned by a company during the period 1995 – 2000. Study the line-graph and answer the questions no. 142 to 145.

$$\% \text{ Profit} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$



142. Profit earned by the company is maximum in the year

- (A) 1995 (B) 1999
(C) 2000 (D) 1997

143. The period in which the profit of the company has increased fastest is

- (A) 1997 – 98 (B) 1995 – 96
(C) 1998 – 99 (D) 1996 – 97

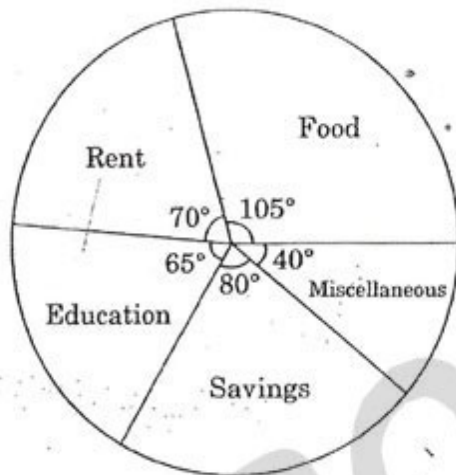
144. The range of profit made by the company is (in percentile)

- (A) 25 (B) 20
(C) 15 (D) 30

145. The expenditure of the company during the year 1995 was ₹ 20 thousand crores. Then the income of the company in that year was (in thousand crore ₹)

- (A) 15 (B) 28
(C) 25 (D) 12

Directions : Monthly budget plan of a man, having monthly income ₹ 18,000, is given below in the pie-chart. Study the pie-chart and answer the questions no. 146 to 150.



146. Monthly expenditure on food, in rupees, is

- (A) 3,500 (B) 5,250
(C) 4,000 (D) 3,250

147. Monthly savings is more than the monthly expenditure on education by

- (A) ₹ 750 (B) ₹ 500
(C) ₹ 700 (D) ₹ 450

148. Monthly expenditure on education is less than that on rent by

- (A) ₹ 750 (B) ₹ 500
(C) ₹ 250 (D) ₹ 200

149. Expenditure on rent is more than that on miscellaneous purpose by

- (A) $25\frac{1}{3}\%$ (B) $42\frac{6}{7}\%$
(C) 62.5% (D) 75%

150. Monthly expenditure on miscellaneous, in rupees, is

- (A) 2,000 (B) 3,500
(C) 2,500 (D) 3,250

PART - D : ENGLISH COMPREHENSION

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 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. Who wouldn't be triumphant / in their success / at the examination ? / No error.
(A) (B) (C) (D)
152. I dared / Mohan fights / a duel. / No error.
(A) (B) (C) (D)
153. All of you except Sheena / have done the homework / properly. / No error.
(A) (B) (C) (D)
154. The summit began / on a much voiced / optimism note. / No error.
(A) (B) (C) (D)
155. The concentration of human and material resources at a few centres / have resulted in / large scale migration of rural population to urban areas. / No error.
(A) (B) (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 rectangle [■] in the Answer Sheet.

156. A rare audio tape released by the court at the end of the hearing showed many judges asking _____ they should intervene at all.
(A) weather (B) whether
(C) if only (D) only if
157. Rita _____ her home-work yet.
(A) does not do (B) did not do
(C) has not done (D) will not do
158. Many modern methods of agriculture _____ thousands of years ago.
(A) began (B) originated
(C) sprang (D) started
159. He is utterly _____ at the end of the day.
(A) worn through (B) worn out
(C) worn away (D) worn on
160. People should refrain _____ evil deeds.
(A) to do (B) in doing
(C) from doing (D) doing

Directions : In questions no. 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. Periphery

- (A) edge (B) terminus
(C) circle (D) boundary

162. Exonerate

- (A) negate (B) charge
(C) absolve (D) execute

163. Exquisite

- (A) quizzical (B) exciting
(C) exact (D) wonderful

164. Comprehensive

- (A) alternative (B) inclusive
(C) adhesive (D) expensive

165. Clandestinely

- (A) financially (B) systematically
(C) secretly (D) openly

Directions : In questions no. 166 to 170, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

166. Nibble

- (A) devour (B) consume
(C) swallow (D) munch

167. Jeopardy

- (A) safety (B) comfort
(C) pleasure (D) stability

168. Hindrance

- (A) approval (B) approbation
(C) assistance (D) authorization

169. Precedence

- (A) succession (B) supersession
(C) subordination (D) seclusion

170. Misdemeanour

- (A) humility (B) courtesy
(C) adventure (D) cowardice

Directions : In questions no. 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. Ravi wants to blaze a trail in his activities.

- (A) initiate work and be a pioneer
(B) blow the trumpet
(C) be supported
(D) be the centre of attraction

172. Their friendship lasted without a cloud to the end of his life.

- (A) without trouble
(B) without romance
(C) without concealment
(D) without stigma

173. She took a wrong decision by not marrying this gentleman. She doesn't know that beauty is only skin deep.

- (A) physical touch is not important
(B) physical beauty is not important
(C) physical charm is important
(D) internal beauty is not important

174. The officials played ducks and drakes with the public money.

- (A) collected (B) squandered
(C) spent (D) preserved

175. Suman held court with the studio audience.

- (A) took to the court of law
(B) had a formal discussion with
(C) tried to please to gain support
(D) entertained with interesting funny stories

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

176. Very little rice was found in the pot after all the guests had eaten.
 (A) stored (B) remained
 (C) was cooked (D) No improvement
177. The policeman captured the first car that approached and ordered the driver to take the injured child to the hospital.
 (A) caught (B) commandeered
 (C) interrupted (D) No improvement
178. He won't hear you provided you shout.
 (A) unless (B) in case
 (C) as long as (D) No improvement
179. The ship is at the anchor and the sailors are now at ease.
 (A) at anchor (B) at an anchor
 (C) at its anchor (D) No improvement
180. They objected to the plan on the grounds that it was too expensive.
 (A) refused (B) declined
 (C) disagreed (D) No improvement

Directions : In questions no. 181 to 185, out of the four alternatives, choose the one which can be substituted for the given words/sentence.

181. Something which is not in harmony
 (A) Smooth (B) Quiet
 (C) Cacophonous (D) Noisy
182. A list of books
 (A) Anthology (B) Glossary
 (C) Catalogue (D) Index
183. Man with womanly habits and manners
 (A) Bovine (B) Suave
 (C) Effeminate (D) Gay
184. Something unusual or strange, having peculiar notions
 (A) Dramatic (B) Reasonable
 (C) Whimsical (D) Aggressive
185. A study of words and the way words develop
 (A) Philology (B) Phonology
 (C) Phraseology (D) Phonography

Directions : In questions no. 186 to 190, there are four different words out of which one is correctly spelt. Find the correctly spelt word and indicate it by blackening the appropriate rectangle [■] in the Answer Sheet.

186. (A) holocaust (B) holocast
 (C) holocost (D) halocaust
187. (A) reverantial (B) reverential
 (C) revarential (D) reverentiel
188. (A) meteculous (B) meticulous
 (C) metikyulus (D) meticolus
189. (A) souvenir (B) suvenire
 (C) suvenir (D) souviener
190. (A) flabergast (B) flabergust
 (C) flabbergast (D) flabbergust

Directions : (Questions no. 191 to 200). In the following passage, some of the words have been left out. First read the passage over and try to understand what it is about. Then fill in the blanks with the help of the alternatives given. Blacken the appropriate rectangle in the Answer Sheet.

The League of Nations was 191 in 1919. It became ineffective and the UNO began to 192 from October 24th, 1945. The Second World War 193 in 1939. It caused great 194 to human lives and property. As a 195 of use of atom bombs, many people were 196 and many others became 197. The world leaders feared that another world war would 198 the entire world. It was a question of the 199 of mankind. To ensure peace and 200 the world leaders established a world organisation, the UNO.

191. (A) created

(B) formed

(C) made

(D) opened

192. (A) start

(B) operate

(C) function

(D) commence

193. (A) broke in

(B) broke out

(C) broke into

(D) broke up

194. (A) wastage

(B) calamity

(C) loss

(D) disturbance

195. (A) result

(B) cause

(C) reason

(D) matter

196. (A) destroyed

(B) killed

(C) mutilated

(D) disabled

197. (A) disabled

(B) disadvantaged

(C) unfit

(D) handicapped

198. (A) perish

(B) demolish

(C) jeopardize

(D) destroy

199. (A) continuity

(B) survival

(C) presence

(D) existence

200. (A) tranquility

(B) security

(C) safety

(D) order