

FCI Grade-3 Question Paper

PART – (a)

GENERAL INTELLIGENCE

Directions : In Question Nos. 1 to 9 select the related word/letters/number from the given alternatives.

1. Student : Book :: Postman : ?
(A) Delivery (B) Bicycle
(C) Uniform (D) Mail
2. Illiteracy : Education :: Drought : ?
(A) Well (B) Rain
(C) Dam (D) River
3. Carpenter : Furniture :: ?
(A) Book : Author
(B) Magazine : Editor
(C) Cook : Soup
(D) Dam : Engineer
4. LOM : NMK :: PKI : ?
(A) RIH (B) SHG
(C) RIG (D) RHG
5. JTIS : HRGQ :: FPEO : ?
(A) DNCM (B) DCNQ
(C) CNDM (D) CNDQ
6. BAD : CBE :: ? : IVSU
(A) GOOD (B) HSPR
(C) HALT (D) HURT
7. 5 : 30 :: 8 : ?
(A) 14 (B) 50
(C) 69 (D) 80

8. 12 : 30 :: 20 : ?

- (A) 48 (B) 32
(C) 35 (D) 42

9. 3 : 28 :: 5 : ?

- (A) 179 (B) 126
(C) 124 (D) 125

Directions : In Question Nos. 10 to 18 select the one which is different from the other three responses.

10. (A) Cement (B) Glue
(C) Gum (D) Lock
11. (A) Biography (B) Photography
(C) Λιθογραφία (D) Χειρογραφία
12. (A) Petrol – Car (B) Coal – Engine
(C) Smoke – Fire (D) Oil – Lamp
13. (A) 23 (B) 25
(C) 19 (D) 17
14. (A) 6121 (B) 7364
(C) 1036 (D) 2710
15. (A) 21 – 98 (B) 45 – 210
(C) 7 – 29 (D) 27 – 126
16. (A) EBD (B) IFH
(C) QNO (D) YVX

SPACE FOR ROUGH WORK

17. (A) BQCR (B) DSET
(C) FUGV (D) HWIY
18. (A) AEIU (B) BCDF
(C) AOIU (D) OIAE

Directions : In Question Nos. 19 and 20, which one of the given responses would be a meaningful order of the following words in ascending order ?

19. 1. Child 2. Profession
3. Marriage 4. Infant
5. Education
(A) 1, 3, 5, 2, 4 (B) 2, 1, 4, 3, 5
(C) 4, 1, 5, 2, 3 (D) 5, 4, 1, 3, 2
20. 1. Plastering 2. Painting
3. Foundation 4. Walls
5. Ceiling
(A) 1, 2, 3, 4, 5 (B) 3, 4, 1, 2, 5
(C) 3, 4, 5, 1, 2 (D) 5, 4, 3, 2, 1
21. If the following words are arranged according to English Dictionary, which word will be on third place ?
(A) KNOW (B) KNACK
(C) KNIT (D) KNOB
22. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?
_ bc c _ a abc _ ba ab _
(A) acbc (B) abac
(C) abcc (D) acac

Directions : In Question Nos. 23 to 26, choose the correct alternative from the given ones that will complete the series :

23. ACE, BDF, CEG, ?
(A) CED (B) DFH
(C) DEM (D) HED
24. AZBY, CXDW, EVFU, ?
(A) SHTG (B) GXHW
(C) GTHS (D) STHO
25. 33, 48, 65, 84, ?, ?
(A) 105, 128 (B) 99, 110
(C) 101, 118 (D) 105, 126
26. 2, 10, 26, 50, ?
(A) 74 (B) 50
(C) 78 (D) 82
27. Find the wrong number in the given number series :
2, 10, 30, 68, 120, 222
(A) 68 (B) 120
(C) 30 (D) 222
28. Savitha introduced a boy as the son of the only daughter of the father of her maternal uncle. How is boy related to Savitha ?
(A) Brother (B) Son
(C) Nephew (D) Son-in-law

SPACE FOR ROUGH WORK

29. A father is three times as old as his son. Eight years ago, the father was five times as old as his son. What is the present age of the son ?

- (A) 12 years (B) 14 years
(C) 16 years (D) 20 years

30. From following alternatives select the word which cannot be formed using the letters of the given word :

DEPARTMENT

- (A) PART (B) TREAT
(C) MATURE (D) TAME

31. From the following alternatives select the word which can be formed using the letters of the given word :

EXPERIENCE

- (A) EXPIRE (B) PERCIEVE
(C) EMPIRE (D) EXPENSE

32. If E = 5 and TEA = 26 then TEACHER = ?

- (A) 75 (B) 59
(C) 60 (D) 57

33. In certain code COMPUTER is written as OCPMTURE. In that code which alternative will be written as OHKCYE ?

- (A) HCOKEY (B) HYKOCE
(C) HOCKEY (D) HOYECK

34. X stands for +, Z stands for ÷, Y stands for −, and P stands for ×, then what is the value of $10 P 2 X 5 Y 5$?

- (A) 10 (B) 15
(C) 20 (D) 25

35. Some equations are solved on the basis of a certain system. Find out the correct answer for the unsolved equation on that basis.

If $3 \div 5 = 5$, $4 \div 7 = 8$, $8 \div 7 = 6$ then, what should $9 \div 6$ be ?

- (A) 4 (B) 9
(C) 5 (D) 6

36. Select the correct combination of mathematical signs to replace * signs and to balance the given equation :

$28 * 4 * 9 * 16$

- (A) $\div + =$ (B) $+ \div =$
(C) $- \times +$ (D) $- = \times$

SPACE FOR ROUGH WORK

Directions : In Question Nos. 37 & 38, find the missing number from the given responses.

37. 8 15 22
 29 ? 43
 50 57 64

- (A) 34 (B) 50
(C) 33 (D) 36

38. 7 9 3
 8 3 5
 2 5 ?
 112 135 900

- (A) 6 (B) 70
(C) 60 (D) 65

39. A man starts from his house and walked straight for 10 metres towards North and turned left and walked 25 metres. He then turned right and walked 5 metres and again turned right and walked 25 metres.

Which direction is he facing now ?

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

40. A and B start walking from the same point. A goes North and covers 3 km, then turns right and covers 4 kms. B goes west and covers 5 kms, then turns right and covers 3 kms. How far apart are they from each other ?

- (A) 10 km (B) 9 km
(C) 8 km (D) 5 km

41. Five persons A, B, C, D and E are sitting in a row facing you such that D is on the left of C and B is on the right of E. A is on the right of C and B is on the left of D. If E occupies a corner position, then who is sitting in the centre ?

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

42. If Ram's house is located to the South of Krishna's house and Govinda's house is to the East of Krishna's house, in what direction is Ram's house situated with respect to Govinda's house ?

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

SPACE FOR ROUGH WORK

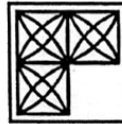
Directions : In Question Nos. 43 & 44, two statements are given followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You are to decide which of the given conclusions, if any, follow from the given statements. Indicate your answer.

43. **Statements :** 1. All children are students.
2. All students are players.
- Conclusions :** I. All cricketers are students.
II. All children are players.
- (A) Only conclusion I follows.
(B) Only conclusion II follows.
(C) Both conclusions I and II follow.
(D) Neither conclusion I nor II follows.

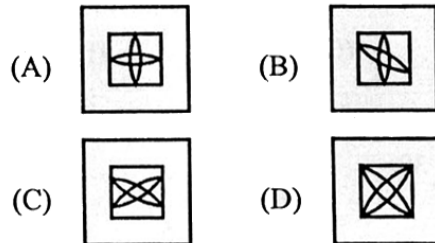
44. **Statements :** 1. No teacher comes to the school on a bicycle.
2. Anand comes to the school on a bicycle.
- Conclusions :** I. Anand is not a teacher.
II. Anand is a student.
- (A) Conclusion I alone can be drawn.
(B) Conclusion II alone can be drawn.
(C) Both Conclusions can be drawn.
(D) Both Conclusions can not be drawn.

45. Which answer figure will complete the pattern in the question figure ?

Question Figure



Answer Figures :

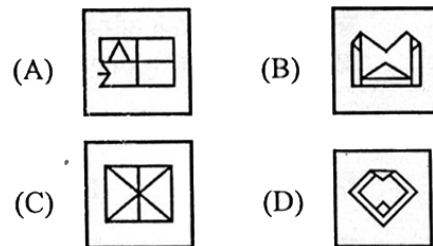


46. Select the answer figure in which the question figure is hidden/embedded.

Question Figure



Answer Figures :



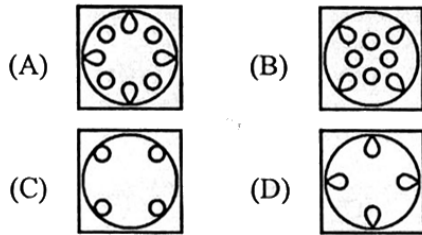
SPACE FOR ROUGH WORK

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

Question Figure



Answer Figures :

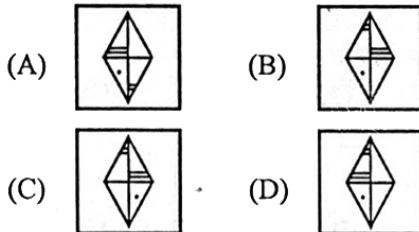


48. Which of the answer figure is exactly the mirror image of the given figure, when the mirror is held on the line AB ?

Question Figure



Answer Figures :



49. In the following question a word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, e.g., 'F' can be represented by 14, 21, etc. and 'E' can be represented by 20, 32, etc. Identify the set for the word FIRE.

MATRIX - I

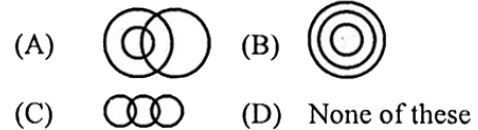
	0	1	2	3	4
0	D	E	F	I	N
1	I	N	D	E	F
2	E	F	I	N	D
3	N	D	E	F	I
4	F	I	N	D	E

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) 21, 22, 88, 33
 (B) 14, 10, 69, 14
 (C) 33, 34, 76, 22
 (D) 02, 03, 57, 01

50. Which one of the following diagrams best depicts the relationship among people, women and mothers ?



SPACE FOR ROUGH WORK

For VH Candidates Only

45. Which single letter when suffixed to the following words will form new words ?
CAR MAR PAR TABLE
(A) D
(B) E
(C) T
(D) None or more than one letter
46. In a row of boys, Manish is 9th from the left and Suresh is 9th from the right. When they interchange their positions, Suresh becomes 18th from the right. What will be the Manish's new position from the left ?
(A) 9th
(B) 16th
(C) 18th
(D) 20th
47. How many 5's are there in the following number series which are preceded by 3 but not followed by 8.
4 5 8 3 2 7 3 5 1 7 8 9 3 5 8 3 1 3 5 2
(A) 4
(B) 3
(C) 2
(D) 1
48. A day-after-tomorrow will be X-Mas day. What will be the day on New-year-day if today is Monday ?
(A) Monday
(B) Thursday
(C) Wednesday
(D) Tuesday
49. The heights of three towers are in the ratio 5 : 6 : 7. If a spider takes 15 minutes to climb the smallest tower, how much time will it take to climb the highest one.
(A) 15 minutes
(B) 18 minutes
(C) 21 minutes
(D) 54 minutes
50. In an examination Ravi scores 8 marks less than 80% of full marks and Amit gets 5 marks more than 70% of full marks. Ravi gets 2 marks more than Amit. How many marks does Ravi get ?
(A) 220
(B) 120
(C) 112
(D) 96

SPACE FOR ROUGH WORK

PART – (b)
GENERAL AWARENESS

51. The value of a commodity expressed in terms of money is known as
(A) Price (B) Utility
(C) Value (D) Wealth
52. The Planning Commission of India was established in the year
(A) 1947 (B) 1949
(C) 1950 (D) 1952
53. Green Revolution was started in
(A) 1960 (B) 1970
(C) 1980 (D) 1990
54. The term of the Finance Commission is
(A) Ten years
(B) Five years
(C) Six years
(D) Three years
55. Reserve Bank of India was Nationalised in
(A) 1948 (B) 1947
(C) 1949 (D) 1950
56. Who was the Chairman of the Constituent Assembly?
(A) Dr. B.R. Ambedkar
(B) Dr. Rajendra Prasad
(C) Jawahar Lal Nehru
(D) Vallabh Bhai Patel
57. Which one of the following methods is used to ascertain the public opinion on important legislation?
(A) Initiative
(B) Recall
(C) Referendum
(D) None of the above
58. Fundamental Duties were added to the Constitution by
(A) 24th Amendment
(B) 39th Amendment
(C) 42nd Amendment
(D) 44th Amendment
59. The final authority to interpret our Constitution is the
(A) President
(B) Parliament
(C) Prime Minister
(D) Supreme Court
60. Compared with Society, the scope of State activity is
(A) Wider
(B) Narrow
(C) Just equal
(D) No comparison between the two
61. Seleucus Nicator was defeated by
(A) Asoka
(B) Chandragupta Maurya
(C) Bindu Sara
(D) Brihadratha
62. The striking feature of the Indus Valley Civilization was
(A) Urban Civilization
(B) Agrarian Civilization
(C) Mesolithic Civilization
(D) Paleolithic Civilization
63. The Governor-General who abolished the practice of Sati was
(A) Dalhousie
(B) Ripon
(C) William Bentinck
(D) Curzon

64. The famous Bhakti Saint who belonged to the royal family of Mewar was
(A) Chaitanya
(B) Andal
(C) Meerabai
(D) Ramabai
65. After Alexander's death the Eastern part of his empire came under
(A) Seleucus Nicator
(B) Menander
(C) Rudradaman
(D) Kanishka
66. The Thar Express goes to
(A) Afghanistan
(B) Bangladesh
(C) Pakistan
(D) Myanmar
67. The product used for manufacturing of Industrial alcohol is
(A) Khandasari
(B) Bagasse
(C) Molasses
(D) Paper-pulp
68. Guwahati is situated on the bank of the river
(A) Teesta
(B) Brahmaputra
(C) Hooghly
(D) Sone
69. Kanchenjunga is situated in
(A) Nepal
(B) Sikkim
(C) West Bengal
(D) Himachal Pradesh
70. With which set of following countries has Arunachal Pradesh common border ?
(A) Bhutan, Bangladesh & China
(B) Myanmar, Bangladesh & China
(C) Bhutan, China & Myanmar
(D) Bhutan, Bangladesh & Myanmar
71. The green colour of the leaves is due to the presence of
(A) Proteins
(B) Lipids
(C) Chlorophyll
(D) Carbohydrates
72. The edible part of an onion is
(A) Modified root
(B) Aerial flower
(C) Aerial stem
(D) Fleshy leaves
73. To which group of blood an universal recipient belongs ?
(A) A group
(B) B group
(C) O group
(D) AB group
74. The normal body temperature of human beings is
(A) 96.4 °F
(B) 97.4 °F
(C) 98.4 °F
(D) 99.4 °F
75. Columba livia is the scientific name of
(A) Pigeon
(B) Snake
(C) Rabbit
(D) Shark

76. Bones are pneumatic in
(A) Fishes
(B) Amphibians
(C) Reptiles
(D) Birds
77. Name the process of production of energy in the Sun
(A) Nuclear fission
(B) Radioactivity
(C) Nuclear fusion
(D) Ionization
78. A spherical ball made of steel when dropped in mercury container will
(A) sink in mercury
(B) will be on the surface of mercury
(C) will be partly immersed in mercury
(D) will dissolve in mercury
79. The sounds having a frequency of 20 Hertz to 20,000 Hertz are known as
(A) Audible sounds
(B) Ultrasonics
(C) Infrasonics
(D) Megasonics
80. Eclipses occur due to which optical phenomena ?
(A) Reflection
(B) Refraction
(C) Rectilinear propagation
(D) Diffraction
81. Which of the following produces highest amount of energy upon oxidation ?
(A) Protein
(B) Fat
(C) Glucose
(D) An alkane
82. Pure water is bad conductor of electricity because it is
(A) feebly ionized
(B) not volatile
(C) a very good solvent
(D) a non-polar solvent
83. Where is National Chemical Laboratory (NCL) located ?
(A) Chandigarh
(B) Bhavnagar
(C) Pune
(D) Panaji
84. The metals commonly used for electroplating are
(A) Gold, Sodium & Chromium
(B) Chromium, Copper & Nickel
(C) Nickel, Lead & Chromium
(D) Gold, Sodium & Potassium
85. Which of the following in automobile exhaust can cause cancer ?
(A) Oxides of nitrogen
(B) Carbon monoxide
(C) Lead
(D) Polycyclic hydrocarbons
86. Bleaching powder is used in drinking water as a/an
(A) disinfectant
(B) antibiotic
(C) antiseptic
(D) coagulant
87. Gamma rays have greatest similarity with
(A) α -rays (B) β -rays
(C) X-rays (D) U.V.-rays
88. In the absence of ozone layer, which rays will enter into atmosphere ?
(A) Infrared
(B) Visible
(C) Ultraviolet
(D) X-rays

89. Where are programs and data to be used by the computer available ?
(A) Processing Unit
(B) Output
(C) Storage
(D) Input
90. In HTML, and tags display the enclosed text in
(A) black colour
(B) background
(C) bold
(D) bright
91. Who invented chloroform as anaesthetic ?
(A) James Simpson
(B) Edward Jenner
(C) Alexander Fleming
(D) Christian Barnard
92. The Nobel Prize for Chemistry for the year 2011 has been awarded to
(A) Saul Perlmutter, Brian P. Schmidt & Adam G. Riess
(B) Bruce A. Beutler, Jules A. Hoffmann & Ralph M. Steinman
(C) Christopher A. Sims & Thomas J. Sargent
(D) Dan Schechtman
93. Sebastian Vettel won the Formula 1 Indian Grand Prix held at Greater Noida on October 30, 2011. This was also his _____ win of the season.
(A) 10th (B) 11th
(C) 12th (D) 13th
94. Of which of the following States of India is Kuchipudi a dance-drama ?
(A) Orissa
(B) Andhra Pradesh
(C) Kerala
(D) Tamil Nadu
95. With which of the following was Satyajit Ray associated ?
(A) Classical dance
(B) Journalism
(C) Classical music
(D) Direction of films
96. Census data released on July 15, 2011 reflects that 13.48 percent urban population lives in
(A) Uttar Pradesh
(B) Bihar
(C) Maharashtra
(D) Rajasthan
97. National Social Assistance Programme is aimed at providing
(A) financial support to Scheduled Castes and Scheduled Tribes
(B) old age pension to very poor
(C) insurance for the poor
(D) All of the above
98. As per studies, the Tummalapalle mine in Andhra Pradesh could have Uranium reserve of
(A) 1 lakh tonnes
(B) 1.5 lakh tonnes
(C) 2 lakh tonnes
(D) 2.5 lakh tonnes
99. Which of the following is a famous Assamese festival ?
(A) Makar Sakranti
(B) Yugadi
(C) Onam
(D) Rongali Bihu
100. The least populated State in India is
(A) Arunachal Pradesh
(B) Sikkim
(C) Mizoram
(D) Uttarakhand

PART – (c)

QUANTITATIVE APTITUDE

101. If $\sqrt{4096} = 64$ then value of $\sqrt{40.96} + \sqrt{.4096} + \sqrt{.004096} + \sqrt{.00004096}$
- (A) 7.09 (B) 7.1014
(C) 7.1104 (D) 7.12
102. The value of $\frac{1}{15} + \frac{1}{35} + \frac{1}{63} + \frac{1}{99} + \frac{1}{143}$ is
- (A) $\frac{5}{39}$ (B) $\frac{4}{39}$
(C) $\frac{2}{39}$ (D) $\frac{7}{39}$
103. When simplified $(256)^{-\left(4-\frac{3}{2}\right)}$ is
- (A) 8 (B) $\frac{1}{8}$
(C) 2 (D) $\frac{1}{2}$
104. The number $2.\dot{5}\dot{2}$, when written as a fraction and reduced to lowest terms, the sum of the numerator and denominator is
- (A) 7 (B) 29
(C) 141 (D) 349
105. If the square root of x is the cube root of y , then the relation between x and y is
- (A) $x^3 = y^2$ (B) $x^2 = y^3$
(C) $x = y$ (D) $x^6 = y^5$
106. A and B together can complete a work in 12 days. A alone can complete in 20 days. If B does the work only half a day daily, then in how many days A and B together will complete the work ?
- (A) 10 days (B) 20 days
(C) 11 days (D) 15 days
107. A can do a piece of work in 70 days and B is 40% more efficient than A. The number of days taken by B to do the same work is
- (A) 40 days (B) 60 days
(C) 50 days (D) 45 days
108. A right circular cylinder, a hemisphere and a right circular cone stand on the same base and have the same height. The ratio of their volumes is then
- (A) 3 : 6 : 1 (B) 3 : 4 : 1
(C) 3 : 2 : 1 (D) 4 : 3 : 1
109. A cylinder has 'r' as the radius of the base and 'h' as the height. The radius of base of another cylinder, having double the volume but the same height as that of the first cylinder must be equal to
- (A) $\frac{r}{\sqrt{2}}$ (B) 2r
(C) $r\sqrt{2}$ (D) $\sqrt{2}r$

SPACE FOR ROUGH WORK

110. Area of the base of a pyramid is 57 sq. cm. and height is 10 cm, then its volume in cm^3 , is
 (A) 570 (B) 390
 (C) 190 (D) 590
111. If the length of the diagonal of a cube is $8\sqrt{3}$, then its surface area is
 (A) 192 cm^2 (B) 512 cm^2
 (C) 768 cm^2 (D) 384 cm^2
112. The area of a circle inscribed in a square of area 2 m^2 is
 (A) $\frac{\pi}{4} \text{ m}^2$ (B) $\frac{\pi}{2} \text{ m}^2$
 (C) $\pi \text{ m}^2$ (D) $2\pi \text{ m}^2$
113. If the numerical value of the perimeter of an equilateral triangle is $\sqrt{3}$ times the area of it, then the length of each side of the triangle is
 (A) 2 unit (B) 3 unit
 (C) 4 unit (D) 6 unit
114. An equilateral triangle is drawn on the diagonal of a square. The ratio of the area of the triangle to that of the square is
 (A) $\sqrt{3} : 2$ (B) $\sqrt{2} : \sqrt{3}$
 (C) $2 : \sqrt{3}$ (D) $1 : \sqrt{2}$
115. For a certain article, if discount is 25% the profit is 25%. If the discount is 10%, then the profit is
 (A) 50% (B) 40%
 (C) 30% (D) $33\frac{1}{3}\%$
116. The price that Akbar should mark on a pair of shoes which costs him ₹ 1,200 to gain 12% after allowing a discount of 16% (in rupees) is
 (A) 1344 (B) 1433
 (C) 1600 (D) 1500
117. If $y : x = 4 : 15$, then the value of $\left(\frac{x-y}{x+y}\right)$ is
 (A) $\frac{11}{19}$ (B) $\frac{19}{11}$
 (C) $\frac{4}{11}$ (D) $\frac{15}{19}$
118. Some carpenters promised to do a job in 9 days but 5 of them were absent and remaining men did the job in 12 days. The original number of carpenters was
 (A) 24 (B) 20
 (C) 16 (D) 18
119. One third of a certain journey is covered at the rate of 25 km/hour, one-fourth at the rate of 30 km/hour and the rest at 50 km/hour. The average speed for the whole journey is
 (A) 35 km/hour
 (B) $33\frac{1}{3}$ km/hour
 (C) 30 km/hour
 (D) $37\frac{1}{12}$ km/hour

SPACE FOR ROUGH WORK

120. The average of two numbers is 62. If 2 is added to the smallest number, the ratio between the numbers becomes 1 : 2. The difference of the numbers is
 (A) 62 (B) 40
 (C) 84 (D) 24
121. The cost price of 25 articles is equal to the selling price of 20 of them. The gain or loss percent is given by
 (A) 20% loss (B) 25% gain
 (C) 60% loss (D) 75% gain
122. A shopkeeper makes a profit of 20% even after giving a discount of 10% on the marked price of an article. If marked price is ₹ 500/- then the cost price of the article is
 (A) ₹ 350 (B) ₹ 375
 (C) ₹ 425 (D) ₹ 475
123. If 40% of $(A + B) = 60\%$ of $(A - B)$ then $\frac{2A - 3B}{A + B}$ is
 (A) $\frac{7}{6}$ (B) $\frac{6}{7}$
 (C) $\frac{5}{6}$ (D) $\frac{6}{5}$
124. A number is first increased by 10% and then it is further increased by 20%. The original number is increased altogether by
 (A) 30% (B) 15%
 (C) 32% (D) 36%
125. If a train runs at 40 km/hour, it reaches its destination late by 11 minutes. But if it runs at 50 km/hour, it is late by 5 minutes only. The correct time (in minutes) for the train to complete the journey is
 (A) 13 (B) 15
 (C) 19 (D) 21
126. A tree increases annually by $\frac{1}{8}$ th of its height. By how much will it increase after 2 years, if it stands today 64 cm height?
 (A) 72 cm (B) 74 cm
 (C) 75 cm (D) 81 cm
127. If $2^{x+3} = 32$, then the value of 3^{x+1} is equal to
 (A) 27 (B) 81
 (C) 72 (D) 9
128. If $x + \frac{1}{x} = 2$, $x \neq 0$ then value of $x^2 + \frac{1}{x^3}$ is equal to
 (A) 1 (B) 2
 (C) 3 (D) 4
129. If $\frac{a}{b} + \frac{b}{a} = 1$, $a \neq 0$, $b \neq 0$ the value of $a^3 + b^3$ is
 (A) 0 (B) 1
 (C) -1 (D) 2
130. If $a^2 + b^2 + c^2 + 3 = 2(a + b + c)$ then the value of $(a + b + c)$ is
 (A) 2 (B) 3
 (C) 4 (D) 5

SPACE FOR ROUGH WORK

131. If $\frac{2P}{P^2 - 2P + 1} = \frac{1}{4}$, $P \neq 0$, then the value of $P + \frac{1}{P}$ is
 (A) 4 (B) 5
 (C) 10 (D) 12

132. The ortho centre of a right angled triangle lies
 (A) outside the triangle
 (B) at the right angular vertex
 (C) on its hypotenuse
 (D) within the triangle

133. The angles of a triangle are $(x + 5)^\circ$, $(2x - 3)^\circ$ and $(3x + 4)^\circ$. The value of x is
 (A) 30 (B) 31
 (C) 29 (D) 28

134. Two line segments PQ and RS intersect at X in such a way $XP = XR$. If $\angle PSX = \angle RQX$, then one must have
 (A) $PR = QS$
 (B) $PS = RQ$
 (C) $\angle XSQ = \angle XRP$
 (D) $\text{ar}(\triangle PXR) = \text{ar}(\triangle QXS)$

135. AD is the median of a triangle ABC and O is the centroid such that $AO = 10$ cm. The length of OD in cm is
 (A) 4 (B) 5
 (C) 6 (D) 8

136. The external bisector of $\angle B$ and $\angle C$ of $\triangle ABC$ (where AB & AC extended to E and F respectively) meet at point P. If $\angle BAC = 100^\circ$, then the measure of $\angle BPC$ is
 (A) 50° (B) 80°
 (C) 40° (D) 100°

137. If $\tan(2\theta + 45^\circ) = \cot 3\theta$ where $(2\theta + 45^\circ)$ and 3θ are acute angles, then the value of θ is
 (A) 5° (B) 9°
 (C) 12° (D) 15°

138. One flies a kite with a thread 150 metres long. If the thread of the kite makes an angle of 60° with the horizontal line, then the height of the kite from the ground (assuming the thread to be in a straight line) is
 (A) 50 metres (B) $75\sqrt{3}$ metres
 (C) $25\sqrt{3}$ metres (D) 80 metres

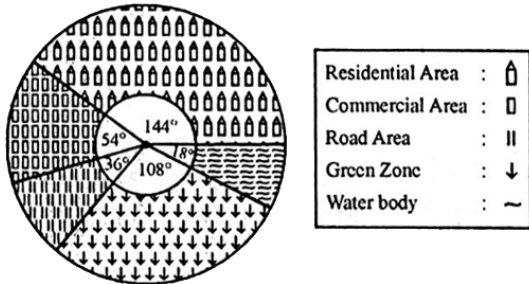
139. If θ be acute angle and $\cos \theta = \frac{15}{17}$, then the value of $\cot(90^\circ - \theta)$ is
 (A) $\frac{2\sqrt{8}}{15}$ (B) $\frac{8}{15}$
 (C) $\frac{\sqrt{2}}{17}$ (D) $\frac{8\sqrt{2}}{17}$

140. If $\sec^2 \theta + \tan^2 \theta = \frac{7}{12}$, then $\sec^4 \theta - \tan^4 \theta =$
 (A) $\frac{7}{12}$ (B) $\frac{1}{2}$
 (C) $\frac{5}{12}$ (D) 1

141. If $\cos x + \cos y = 2$, the value of $\sin x + \sin y$ is
 (A) 0 (B) 1
 (C) 2 (D) -1

SPACE FOR ROUGH WORK

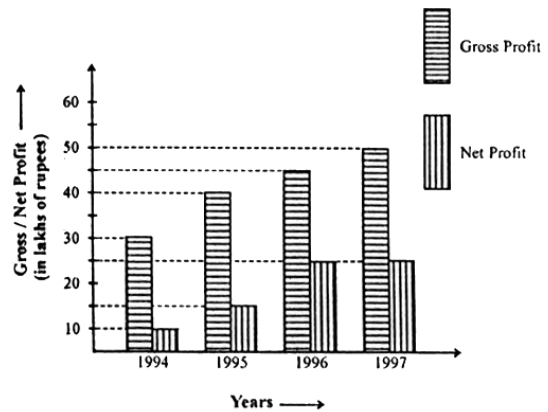
The following Pie-chart shows the land distribution of a housing complex. If the total area of the complex is 5 acres, examine the pie chart and answer the questions (142 to 145) :



142. The ratio of area allotted for residential and road purpose is
 (A) 1 : 4 (B) 4 : 1
 (C) 3 : 8 (D) 8 : 3
143. The percentage of the total area allotted for water body and green zone together is
 (A) 35% (B) 30%
 (C) 45% (D) 40%
144. Land allotted for green zone is greater than that for commercial purpose by
 (A) $\frac{3}{2}$ acres (B) $\frac{2}{3}$ acres
 (C) $\frac{4}{3}$ acres (D) $\frac{3}{4}$ acres
145. The total land allotted for residential and commercial purpose is
 (A) $2\frac{1}{4}$ acres (B) $4\frac{1}{2}$ acres
 (C) $2\frac{3}{4}$ acres (D) $2\frac{1}{2}$ acres

Study the following bar graph and answer the questions 146 to 150 :

Gross Profit and Net Profit of a company in lakhs of rupees for the years 1994-1997 :



146. The year in which the gross profit is double the net profit
 (A) 1997 (B) 1995
 (C) 1996 (D) 1994
147. The percentage of net profit of 1995 as compared to the gross profit in that year is
 (A) 25.5% (B) 35.5%
 (C) 37.5% (D) 42.5%
148. The difference of average gross profit and average net profit calculated for four years is
 (A) ₹ 18.75 lakhs (B) ₹ 19.75 lakhs
 (C) ₹ 20.5 lakhs (D) ₹ 22.5 lakhs
149. The ratio of gross profit to net profit in a year was greatest in the year
 (A) 1994 (B) 1995
 (C) 1996 (D) 1997
150. For the entire four years as shown, the ratio of total gross profit to total net profit is
 (A) 13 : 4 (B) 11 : 6
 (C) 11 : 5 (D) 9 : 4

SPACE FOR ROUGH WORK

**For Visually Handicapped
Candidates Only**

142. A, B and C started a business. A invests one-third as much as B invests and B invests 2 times of what C invests. If they made a profit of ₹ 5,500, then A's profit is
 (A) ₹ 1,000 (B) ₹ 1,500
 (C) ₹ 500 (D) ₹ 2,000
143. A bicycle rider covers his onwards journey from A to B at 10 km/hr and during the return journey from B to A, he covers the same distance at 8 km/hr. If he finishes the onward and return journey in $4\frac{1}{2}$ hours then the total distance covered by him during the entire journey is
 (A) 30 km (B) 40 km
 (C) 50 km (D) 20 km
144. If the numerator of a fraction is increased by 20% and the denominator is diminished by 20%, the value of the fraction is $\frac{4}{5}$. The sum of numerator and denominator of the original fraction is
 (A) 13 (B) 9
 (C) 23 (D) 22
145. x varies inversely as the cube root y . x is 6 when y is 125. The value of x , when y is 27, is
 (A) 10 (B) 12
 (C) 3.6 (D) 11

146. If two successive discounts be 10% and 10%, then the single equivalent discount will be
 (A) 20% (B) 19%
 (C) 18% (D) $10\frac{9}{10}\%$
147. The radius of a cycle wheel is 35 cm, How many revolutions, will it make to cover a distance of 1.1 km?
 (Take $\pi = \frac{22}{7}$)
 (A) 50 (B) 100
 (C) 500 (D) 200
148. In any regular polygon with n sides each internal angle is
 (A) $\left(\frac{n-4}{n}\right)90^\circ$ (B) $(2n-4)90^\circ$
 (C) $\left(\frac{2n-4}{n}\right)90^\circ$ (D) $\left(2-\frac{n}{2}\right)90^\circ$
149. A man gave $\frac{1}{5}$ th worth of his property to his daughter and $\frac{1}{4}$ th to his son. Then half of the balance amount was invested in a bank and the remaining amount was given to his wife. If his wife got ₹ 1,10,000, then the value of the property is
 (A) ₹ 6,00,000 (B) ₹ 5,00,000
 (C) ₹ 4,00,000 (D) ₹ 3,00,000
150. Value of $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{2}}}}$ is
 (A) $\frac{5}{8}$ (B) $\frac{8}{13}$
 (C) $\frac{13}{8}$ (D) $\frac{8}{7}$

SPACE FOR ROUGH WORK

PART – (d)
ENGLISH LANGUAGE

Directions : In Question Nos. 151 to 155, some part 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. Neither of them / are / good. /
(A) (B) (C)
No error.
(D)
152. Due to me being a new comer /
(A)
I was unable / to get a good house. /
(B) (C)
No error.
(D)
153. The circulation of The Statesman /
(A)
is greater than / that of any newspaper. /
(B) (C)
No error.
(D)
154. In the garden /
(A)
were the more beautiful flowers /
(B)
and silver bells. / No error.
(C) (D)
155. The poet / describes about /
(A) (B)
the spring season. / 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. The news was _____ good to be true.
(A) very
(B) too
(C) so
(D) as
157. How much longer _____ this book ?
(A) you are needing
(B) will you be needing
(C) will you have needed
(D) have you needed
158. _____ you hear the President's speech ?
(A) Have
(B) Has
(C) Had
(D) Did
159. I _____ to the movies with some friends last night.
(A) have gone
(B) went
(C) am gone
(D) am going
160. She has only _____ friends.
(A) fewer
(B) less
(C) more
(D) a few

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. magnificent
 (A) magnanimous (B) modest
 (C) generous (D) splendid
162. spirited
 (A) heated (B) drunk
 (C) enthusiastic (D) possessed
163. gloomy
 (A) misty (B) obscure
 (C) murky (D) shadowy
164. grumble
 (A) to scold (B) to complain
 (C) to sheer (D) to fight
165. crude
 (A) unrefined (B) cruel
 (C) rude (D) savage

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. detest
 (A) test (B) dislike
 (C) like (D) interest
167. intentional
 (A) accidental (B) undecided
 (C) concentrated (D) broken
168. commence
 (A) start (B) schedule
 (C) conclude (D) dissolve
169. expand
 (A) contract (B) contrast
 (C) consist (D) controvert
170. prosperity
 (A) propriety (B) property
 (C) adversity (D) perspicacity

Directions : In Question Nos. 171 to 175, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

171. to speak one's mind.
 (A) To be frank and honest
 (B) To think aloud
 (C) To talk about one's ideas
 (D) To express one's thoughts
172. to make a mountain of a molehill
 (A) to make advantage of a small thing
 (B) to give great importance to little things
 (C) to get into trouble
 (D) to see a thing with prejudiced mind
173. hand in glove
 (A) in close relationship
 (B) non-cooperative
 (C) critical
 (D) on bad terms
174. to add fuel to the fire
 (A) to make matters bright
 (B) to cause additional anger
 (C) to bring matters to a conclusion
 (D) to start a revolt
175. Wear and tear
 (A) a brand name
 (B) damage
 (C) lot of sorrow
 (D) a warning

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) and (C) which may improve the sentence. Choose the correct alternative. In case no improvement is needed your answer is (D).

176. A pair of shoes have been purchased by me.
(A) has been
(B) has being
(C) would been
(D) no improvement
177. When I shall go to Agra, I shall visit the Taj Mahal.
(A) have gone
(B) shall travel
(C) go
(D) no improvement
178. You must apologise with him for this.
(A) to
(B) of
(C) for
(D) no improvement
179. Since he worked hard he failed to secure good grades.
(A) As
(B) When
(C) Though
(D) No improvement
180. The minister agreed will answer questions on television.
(A) to answer
(B) for answering
(C) with answering
(D) no improvement

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Directions : In Question Nos. 181 to 185, out of the four alternatives, choose the one which can be substituted for the given sentence and indicate it by blackening the appropriate rectangle [■] in the Answer Sheet.

181. A person who loves wealth and spends as little money as possible.
(A) Curmudgeon
(B) Money-grabber
(C) Scrimp
(D) Miser
182. State of anxiety or dismay causing mental confusion.
(A) Constriction
(B) Consternation
(C) Concentration
(D) Contraction
183. A person who is fluent in two languages.
(A) Versatile
(B) Expert
(C) Bilingual
(D) Knowledgeable
184. One who eats human flesh.
(A) Maneater
(B) Cannibal
(C) Beast
(D) Savage
185. The quality of being politely firm and demanding.
(A) assertive
(B) bossy
(C) aggressive
(D) lordy

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Directions : In Question Nos. 186 to 190, groups of four words are given. In each group, one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

186. (A) independance
(B) independence
(C) independens
(D) indepandance
187. (A) hypocrisy (B) hypocresy
(C) hipocrisy (D) hipocrecy
188. (A) aeroplane (B) airoplane
(C) aeroplain (D) airoplain
189. (A) loanly (B) lonly
(C) lonelic (D) lonely
190. (A) cerimony (B) ceremoney
(C) ceremony (D) cerimoney

Directions : In the following passage 191 to 200, 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. Mark your answer in the Answer Sheet.

“Quit India” came not from the lips but the aching hearts of millions. In this open rebellion, the Indian 191 reached its climax. The British were not only 192 by it, but also were obliged to quit unilaterally. The importance of Quit India can be 193 from Lord Linlithgow’s statement, “I am engaged here in meeting by far the most 194 rebellion since that of 1857, the gravity and extent of which we have so far

195 from the world for reasons of military security.” Still more significant was Churchill’s gloomy disclosure to the King Emperor that, “the idea of 196 of power had become an admitted 197 in the minds of British party leaders,” although his public statements were diametrically opposite. The 198 created by Quit India made the British 199 that they could no longer keep India in 200.

191. (A) freedom (B) patriotism
(C) liberation (D) revolution
192. (A) threatened (B) inspired
(C) attacked (D) impressed
193. (A) diffused (B) gauged
(C) established (D) determined
194. (A) trivial (B) magnificent
(C) serious (D) auspicious
195. (A) excluded (B) elicited
(C) prevented (D) concealed
196. (A) transfer (B) seizure
(C) grabbing (D) retainment
197. (A) tactics (B) fantasy
(C) inevitability (D) occurrence
198. (A) violence (B) taboos
(C) vengeance (D) anarchy
199. (A) imagine (B) pretend
(C) realise (D) anxious
200. (A) power (B) bondage
(C) exile (D) suspense