

PART A : GENERAL INTELLIGENCE AND REASONING

Directions : In questions no. 1 to 6, select the related word/letters/number from the given alternatives.

1. TEKCUB : BUCKET :: TCEJORP : ?

- (A) CEJTORP (B) JORPTCE
(C) REJECT (D) PROJECT

2. 1234 : 4132 :: 5678 : ?

- (A) 8675 (B) 8567
(C) 8765 (D) 8576

3. 7 : 53 :: ? : 173

- (A) 22 (B) 18
(C) 13 (D) 14

4. Metaphysics : Creation :: Epistemology : ?

- (A) Creator (B) Soul
(C) Knowledge (D) Logic

5. Sea : Ship :: ?

- (A) Railway tracks : Train
(B) Sky : Birds
(C) Road : People
(D) River : Transport

6. MPRV : SOPT :: RPMV : ?

- (A) POST (B) OSTP
(C) PSOT (D) SOTP

Directions : In questions no. 7 to 12, select the one which is different from the other three alternatives.

7. (A) 50 (B) 63
(C) 55 (D) 49

8. (A) (25, 42) (B) (29, 92)
(C) (18, 81) (D) (17, 71)

9. (A) IJL (B) XGT
(C) NPM (D) BHK

10. (A) CEKTRIC (B) SNINET
(C) SCHAMOT (D) LABLOTOF

11. (A) Bracelet (B) Locket
(C) Armlet (D) Bangles

12. (A) Umpire (B) Bowler
(C) Batsman (D) Goalkeeper

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

. b d d _ . d . e b d _ e . d d

- (A) e b d e d b (B) e e h d d b
(C) e e b d d d (D) e d e b d b

14. Which one of the given responses would be a meaningful order of the following ?

1. Deca 2. Octa
3. Hepta 4. Nona
5. Hexa

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

15. Arrange the following words as per order in the English dictionary :

1. Transfixed 2. Tranquilizer
3. Transaction 4. Transparency
5. Trampoline

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

Directions : In questions no. 16 to 18, a series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

16. 4, 7, 12, 21, ?
 (A) 39 (B) 42
 (C) 30 ~~(D) 38~~
17. 91, 273, 455, 637, ?, 9911
 (A) 819 ~~(B) 1011~~
 (C) 899 (D) 10011
18. AGMS, TNHE, CIOU, ?
~~(A) VPJD~~ (B) MNOP
 (C) XRLF (D) WQKE
19. Vikas takes 15 seconds to stand up from the ground and 11 seconds to sit on the ground. He has to continue this process for some time. Within 93 seconds, how many times must he have stood up?
 (A) 5 times (B) 4 times
~~(C) 3 times~~ (D) 6 times
20. A mother's age is thrice that of her daughter's age. Six years ago, the mother's age was five times that of the daughter's age. What was the daughter's age 6 years ago?
 (A) 30 years (B) 36 years
 (C) 6 years ~~(D) 12 years~~
21. A man pointing to a woman said, "She is the widow of my only uncle's brother's son." How is the woman related to the man?
 (A) Niece
~~(B) Sister-in-law~~
 (C) Aunt
 (D) Sister
22. In a certain code, BUILDER is written as JVCKSFE. How is SEALING written in that code?
 (A) TFBKHOJ (B) BFTKHOJ
 (C) BTFKHOJ (D) JOHKBFT
23. If 'SWTFP' is coded as '15467' and 'KSLFF' is coded as '21366', then how can 'KTLFP' be coded?
 (A) 21675 (B) 22637
~~(C) 24367~~ (D) 21342
24. In a certain code '482' means 'Life is beautiful', '875' means 'Gold is costly' and '236' means 'Ornaments are beautiful'. Which of the following is the code for 'Life' ?
~~(A) 4~~ (B) 5
 (C) 2 (D) 8
25. From the given alternative words, select the word which *cannot* be formed using the letters of the given word.
 RAPPROCHEMENT
 (A) PHANTOM (B) CEMENT
~~(C) REPRESENT~~ (D) REPROACH
26. From the given alternative words, select the word which can be formed using the letters of the given word.
 OMNIPRESENT
~~(A) PRESIDENT~~ (B) ERASER
 (C) TENSION (D) ESCORT
27. How many meaningful English words of three or more letters, can be formed from the word "TONE" beginning with "N" and without repeating any letter?
~~(A) 3~~ (B) 4 or more
 (C) 1 (D) 2

28. In the following problem, '=' stands for '+', '+' stands for '-', 'x' stands for '=', '-' stands for '>', '>' stands for '+', '<' stands for 'x', '+' stands for '<'. Find the wrong identity.

(A) $5 + 3 < 4 \times 8 + 3$

~~(B)~~ $5 > 3 = 4 + 18 + 3$

~~(C)~~ $5 < 3 + 4 \times 8 > 3$

(D) $5 > 3 + 4 + 8 + 3$

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

$$13 * 5 * 5 * 15 * 5 * 5$$

(A) = - + + x (B) = x + - +

(C) - + = - + ~~(D)~~ x + = x -

30. What should come in place of the question mark ?

$$45 + 15 \times ? + 6 = 15$$

~~(A)~~ 03 (B) 09

(C) 11 (D) 06

31. Find out the related number to complete the equation.

If $879 = 8$ and $625 = 1$, 785 is equivalent to what ?

~~(A)~~ 6 (B) 0

(C) 9 (D) 7

Directions : In questions no. 32 to 34, select the missing number from the given responses.

32. 12 54 ?

19 18 17

83 74 55

(A) 98 ~~(B)~~ 42

(C) 36 (D) 48

33. 20 15 30

28 25 42

36 36 ?

(A) 46 (B) 72

(C) 84 ~~(D)~~ 54

34. 15 11 25

05 07 02

07 06 07

82 83 ?

(A) 75 (B) 65

~~(C)~~ 64 (D) 57

35. A man travels 8 km to the West, turns to the left and then travels 6 km. How far is he from the starting point ?

(A) 5 km (B) 20 km

(C) 10 km (D) 15 km

36. A statement is given followed by two conclusions, I and II. You have to consider the statement to be true, even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions can definitely be drawn from the given statement. Indicate your answer.

Statement :

Earth revolves round the Sun, and not the Sun revolves round the Earth.

Conclusions :

I. Only the Earth revolves round the Sun.

II. The Sun does not revolve round the Earth but the other planets.

~~(A)~~ Both conclusions are correct

(B) Neither conclusion I nor II is correct

(C) Only conclusion I is correct

(D) Only conclusion II is correct

37. If South-East becomes North and North-East becomes West and all directions change accordingly, then what will be the new direction for East ?

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

(C) East (D) West

38. I. All plants in the garden are flowering plants.
 II. Some plants in the garden are dogwood.
 III. All dogwood in the garden are flowering plants.

If Statements I and II are true, then Statement III is

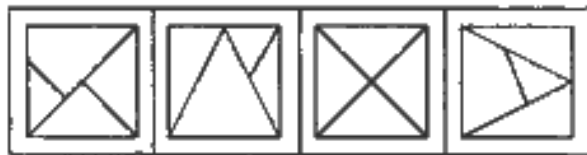
- (A) Uncertain (B) Vague
 (C) True (D) False

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

Question figure :



Answer figures :



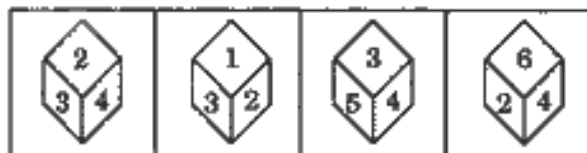
- (A) (B) (C) (D)

40. How many rectangles are there in the given figure ?



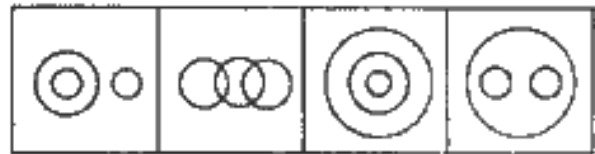
- (A) 6 (B) 9
 (C) 26 (D) 25

41. Four positions of a dice are given below. Identify which number is on the face opposite 2.



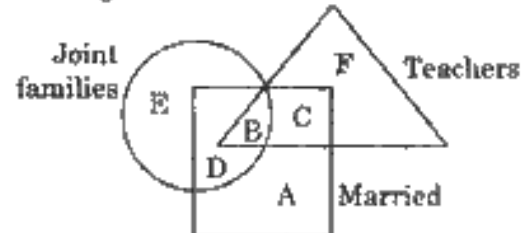
- (A) 5 (B) 6
 (C) 3 (D) 4

42. Choose one of the diagrams which best represents the relationship among Mangoes, Apples, Fruits.



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

43. In the following diagram, the triangle Δ represents the school teachers, the square \square represents the married persons and the circle \circ represents the persons living in joint families. Which region represents married persons living in joint families but not working as school teachers ?



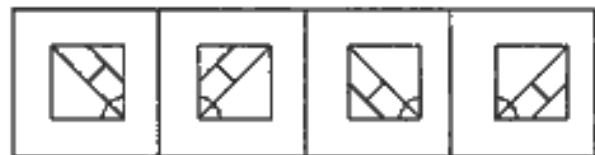
- (A) D (B) F
 (C) A (D) C

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

Question figure :

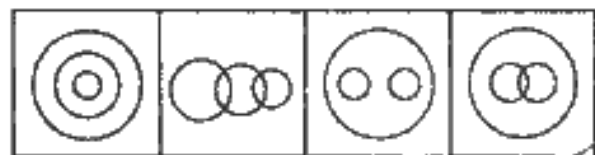


Answer figures :



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

45. Which of the following diagrams represents the correct relationship between Men, Old men and Bachelors ?



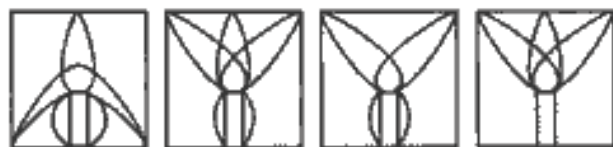
- (A) (B) (C) (D)

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

Question figure :



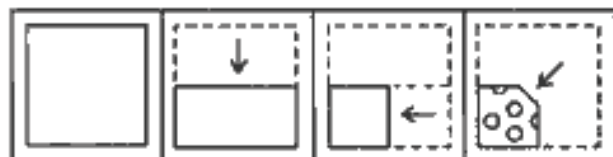
Answer figures :



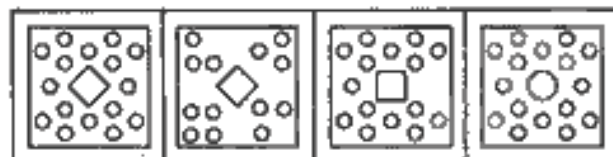
(A) (B) (C) (D)

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 figures :



Answer figures :



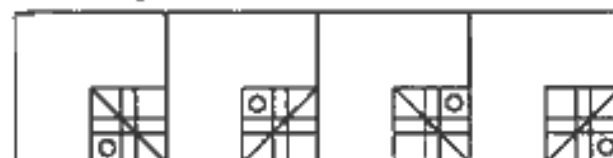
(A) (B) (C) (D)

48. Complete the missing portion of the question figure selecting from the alternatives given.

Question figure :



Answer figures :



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

49. 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. 'U' can be represented by 02, 23, 41, etc. and 'S' can be represented by 59, 66, 88, etc. Similarly, you have to identify the set for the given word :

DARE

Matrix I

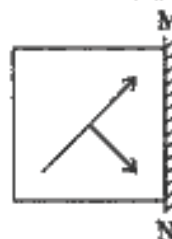
	0	1	2	3	4
0	D	R	U	N	K
1	N	K	D	R	U
2	K	D	R	U	N
3	U	N	K	D	R
4	R	U	N	K	D

Matrix II

	5	6	7	8	9
5	L	A	V	E	S
6	E	S	L	A	V
7	V	E	S	L	A
8	A	V	E	S	L
9	S	L	A	V	E

- (A) 12, 67, 22, 87
 (B) 33, 78, 40, 58
 (C) 21, 55, 13, 99
 (D) 44, 85, 34, 65
50. If a mirror is placed on the line MN, then which of the answer figures is the correct image of the question figure ?

Question figure :



Answer figures :



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

PART B : GENERAL AWARENESS

51. Sovereignty is an essential element of
(A) Association
 (B) Independent nation
(C) Nation
(D) State
52. Under the new electoral reforms, voter's identity cards were suggested by
(A) R.K. Trivedi
(B) S.L. Shakhdar
(C) R.V.S. Peri Sastri
 (D) T.N. Seshan
53. The main purpose for the grant of Fundamental Rights to the Indian citizens is
(A) protection of individual liberty
(B) to establish socialist society
(C) establishment of democratic government
 (D) to ensure independence of judiciary
54. The British East India Company's first 'Presidency' in India was
(A) Hughli (B) Masulipatnam
(C) Madras (D) Surat
55. Who among the following started the general use of stone for monuments ?
(A) Bindusara
 (B) Asoka
(C) Chandragupta Maurya
(D) Bimbisara
56. Who established the Chisti order in India ?
 (A) Shaikh Muin-ud-din Chisti
(B) Hamid-ud-din Nagauri
(C) Nizam-ud-din Auliya
(D) Salim Chisti
57. The number of firms in monopoly is
(A) Three (B) Four
 (C) One (D) Two
58. FDI limit in Indian Private Sector Banks was (as on 1st January, 2007)
(A) 74% (B) 86%
 (C) 26% (D) 51%
59. Non-material goods are
(A) Labour (B) Organisation
 (C) Capital (D) Services
60. When saving exceeds investment, the income flow
(A) remains same
(B) becomes negative
 (C) rises
(D) declines
61. Development means Economic growth plus
(A) Inflation (B) Deflation
(C) Price stability (D) Social change
62. The Constitution of India is
(A) a medium sized constitution
(B) an evolved constitution
 (C) one of the bulkest constitutions
(D) one of the briefest constitutions
63. The surrender of titles and honorary offices was a principle for which one of the following movements ?
 (A) Khilafat Movement
(B) Bhakti Movement
(C) Quit India Movement
(D) Non Cooperation Movement

64. The Information Technology capital of India is
 (A) Mumbai (B) Coimbatore
~~(C) Bangalore~~ (D) Cochin
65. Upasikas were
 (A) lay-members of Buddhism
 (B) lay-members of Jainism
~~(C) monks and nuns of Jainism~~
 (D) monks and nuns of Buddhism
66. Who founded the Ramakrishna Mission (1896)?
 (A) Gopal Krishna Gokhale
 (B) Ishwar Chandra Vidyasagar
~~(C) Ramakrishna Paramahansa~~
~~(D) Narendra Nath Datta (Swami Vivekananda)~~
67. The natural disaster of 'Drought' is taken care of by
 (A) Ministry of Civil Aviation
 (B) Ministry of Health and Family Welfare
~~(C) Ministry of Agriculture~~
 (D) Ministry of Home Affairs
68. The study "Science of Small" is known as
 (A) Nanotechnology
~~(B) Cosmology~~
 (C) Molecular Biology
 (D) Microbiology
69. The major impact of globalisation on Indian agriculture is the development of
 (A) Pesticide technology
~~(B) Machine technology~~
 (C) Biotechnology
 (D) Fertilizer technology
70. The inflorescence of wheat is
 (A) Raceme (B) Catkin
~~(C) Spike~~ (D) Panicle
71. Agar-agar is prepared from.
 (A) Algae (B) Lichens
~~(C) Fungi~~ (D) Bryophyte
72. In India, the most important source of energy is
 (A) Nuclear power
 (B) Hydroelectric power
 (C) Petroleum
~~(D) Coal~~
73. A fertilized egg is known as
 (A) Oospore
~~(B) Conidiospore~~
 (C) Zoospore
 (D) Zygote
74. Who isolated the virus causing mosaic disease in tobacco in the form of crystals?
 (A) Dr. Stanley ~~(B) Mayer~~
 (C) Louis Pasteur (D) Robert Koch
75. The book which contains information on rare plants is called as
 (A) ~~Green book~~ (B) Yellow book
 (C) Blue book (D) Red book
76. *Statements :*
 1. In Gymnosperms, seeds are enclosed in fruits.
 2. Dicots and monocots are included under Angiosperms.
 (A) Both Statements 1 and 2 are correct.
~~(B) Both Statements 1 and 2 are incorrect.~~
~~(C) Statement 1 is correct, but Statement 2 is incorrect.~~
 (D) Statement 1 is incorrect, but Statement 2 is correct.

77. The Green Embassy Award-2012 in India was bagged by the Embassy of
~~(A) U.K.~~
 (B) Japan
 (C) U.S.A.
 (D) Sweden
78. The major pesticidal properties are present in the seed of
 (A) Mango ~~(B) Drumstick~~
 (C) Neem ~~(D) Lotus~~
79. On which of the following principles does a rocket work?
 (A) Conservation of Momentum
 (B) Conservation of Inertia
~~(C) Conservation of Mass~~
 (D) Conservation of Energy
80. An intrinsic semiconductor at absolute zero temperature is a
 (A) superconductor (B) good conductor
~~(C) perfect insulator~~ (D) None of the above
81. The value of g on the Earth's surface changes due to
 (A) both rotation and shape of the Earth
 (B) rotation of the Earth only
~~(C) shape of the Earth only~~
 (D) None of the above
82. The scanning of uterus in determining the sex of the child is preferred more with ultrasonic waves rather than with X-rays. It is because
 (A) X-rays are more harmful than the ultrasonic waves
~~(B) X-rays cannot give as clear a picture as that of ultrasonic waves~~
 (C) X-ray scanning is more expensive than ultrasonic scanning
 (D) None of the above
83. "MIPS" is a measure of the speed of
~~(A) CPU~~ (B) Printer
 (C) Floppy Disk (D) Hard Disk
84. What is the role of a primary key?
~~(A) A key that uniquely identifies a row~~
 (B) Password to open a database table
 (C) A key that uniquely identifies a table
 (D) None of the above
85. When chlorine is added to ethylene we get
~~(A) Ethylidene chloride~~
 (B) Ethylene chlorohydrin
 (C) Ethyl chloride
 (D) Ethylene chloride
86. Aqua Regia contains
 (A) ~~3 parts of conc. HCl + 1 part of conc. HNO₃~~
 (B) 3 parts of conc. HCl + 1 part of conc. H₂SO₄
 (C) 3 parts of conc. H₂SO₄ + 1 part of conc. HNO₃
 (D) None of these
87. In the ordinary fire extinguisher, carbon dioxide is generated by the reaction of
 (A) Sodium carbonate and dilute HCl
~~(B) Sodium bicarbonate and dilute H₂SO₄~~
 (C) Limestone and dilute H₂SO₄
 (D) Marble powder and dilute HCl
88. Starch is an example of
 (A) Polysaccharide
~~(B) Oligosaccharide~~
 (C) Monosaccharide
 (D) Disaccharide

89. Which of the following is *not* correct ?
 (A) NMA – National Monuments Authority
 (B) SIT – Special Investigation Team
 (C) BSF – British Security Force
 (D) ASI – Archaeological Survey of India
90. The 'Arjuna' and the 'Dronacharya' awards are associated with the field of
 (A) Music and Dance
 (B) Literature
 (C) Sports and Games
 (D) Art and Culture
91. Chief producer(s) of Jute in the world is
 (A) India and Bangladesh
 (B) Scotland
 (C) India
 (D) Bangladesh
92. Who is the author of "The Wonder That Was India" ?
 (A) D.D. Kosambi
 (B) A.L. Basham
 (C) B.K. Thapar
 (D) R.S. Sharma
93. Identify the Buddhist Goddess.
 (A) Sanghamitra
 (B) Gotami
 (C) Manjushri
 (D) Tara
94. Which of the following oils is gaining popularity as a cooking option in India ?
 (A) Olive
 (B) Coconut
 (C) Pongamia
 (D) Peanut
95. Which of the following is most injurious to the growing population of India ?
 (A) Opium (B) Datura
 (C) Ganja (D) Tobacco
96. A greenhouse gas "PFTBA" (Perfluorotributylamine), more harmful than CO₂, was recently reported by the scientists of
 (A) University of the West Indies
 (B) NASA
 (C) University of Chicago
 (D) University of Toronto
97. The chronological order of Lok Sabha General Elections 2014 was
 (A) 16th (B) 17th
 (C) 14th (D) 15th
98. Who among the following actresses is the tallest in height ?
 (A) Deepika Padukone
 (B) Preity Zinta
 (C) Huma Qureshi
 (D) Katrina Kaif
99. Valentine's Day is celebrated in the month of
 (A) March
 (B) April
 (C) January
 (D) February
100. Ants can lift weight up to how many times their body weight ?
 (A) 500 times
 (B) 5000 times
 (C) 5 times
 (D) 50 times

PART C : QUANTITATIVE APTITUDE

101. If the distance from the centroid to any of the vertices of an equilateral triangle is $2\sqrt{3}$ cm, then the area of the triangle will be
 (A) $18\sqrt{3}$ sq. cm (B) $4\sqrt{3}$ sq. cm
 (C) 18 sq. cm (D) $9\sqrt{3}$ sq. cm
102. A trader allows two successive discounts of 20% and 10%. If he gets ₹ 108 for an article, find its marked price.
 (A) ₹ 150 (B) ₹ 138
 (C) ₹ 130 (D) ₹ 140
103. The list price of a digital electronic watch is ₹ 800. A customer gets two successive discounts on the list price, the 1st being of 10%. Calculate the 2nd discount, if the customer pays ₹ 612 for it.
 (A) 15% (B) 12%
 (C) 14% (D) 13%
104. An automobile dealer buys an old motorcycle marked at ₹ 25,000 with 20% and 5% off successively. He spends ₹ 1,000 on its repairs and sells the motorcycle for ₹ 25,000. Find his gain percent.
 (A) 25% (B) 28%
 (C) 20% (D) 30%
105. The ratio of the sides of a triangle are 3 : 4 : 5. If the perimeter of the triangle is 36 cm, then the sides are
 (A) 9 cm, 12 cm, 15 cm
 (B) 10 cm, 12 cm, 14 cm
 (C) 3 cm, 4 cm, 5 cm
 (D) 8 cm, 12 cm, 16 cm
106. A purse contains 225 currency notes consisting of 5-rupee, 10-rupee and 50-rupee currencies in the ratio 3 : 7 : 5 respectively. Out of this, ₹ 25 is spent and the left out money is exchanged for 500-rupee currency notes. Then the number of 500-rupee currency notes is
 (A) 10 (B) 20
 (C) 15 (D) 5
107. The number of numbers between 140 and 259, both included, which are divisible by 7 is
 (A) 18 (B) 16
 (C) 17 (D) 37
108. The LCM of $\frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}$ is
 (A) $\frac{10}{7} = 10/7$ (B) $\frac{60}{4} = 15$
 (C) $\frac{60}{2} = 30$ (D) $\frac{120}{2} = 60$
109. 24 men complete a job by working 7 hours per day for 27 days. 14 men will complete the same work by working 9 hours per day for
 (A) 36 days (B) 20 days
 (C) 25 days (D) None of the above
110. A can do a piece of work in 24 days, B in 32 days and C in 64 days. All begin to do it together but A leaves after 6 days and B leaves 6 days before the completion of the work. The total number of days they worked for is
 (A) 16 days (B) 24 days
 (C) 20 days (D) 8 days
111. A village road is to be constructed by a team of 250 workers. After 12 days it was found that only $\frac{2}{7}$ th part of the work was completed. To complete the rest in another 25 days, how many more workers should be employed?
 (A) 55 workers (B) 50 workers
 (C) 53 workers (D) 52 workers
112. Find the altitude of a rhombus whose area is 42 cm^2 and perimeter 140 cm.
 (A) 10 cm (B) 8 cm
 (C) 12 cm (D) 14 cm
113. If three sides of a right-angled triangle are $(2q + 1)$ cm, $(2q - 1)$ cm and $2q$ cm respectively, then the area of the triangle is
 (A) 6 sq. cm (B) $6q$ sq. cm
 (C) 2 sq. cm (D) $2q$ sq. cm

127. The difference between the exterior and interior angles at a vertex of a regular polygon is 150° . The number of sides of the polygon is
 (A) 24 (B) 28
 (C) 10 (D) 15
128. In a triangle ABC, $\angle B = 60^\circ$, $\angle C = 40^\circ$ and AD and AE are respectively the bisector of $\angle A$ and the perpendicular drawn to BC. The $\angle EAD$ is
 (A) 20° (B) 10°
 (C) 40° (D) 30°
129. O is the orthocentre of the triangle ABC. If $\angle BOC = 100^\circ$, then $\angle BAC$ is
 (A) 90° (B) 80°
 (C) 70° (D) 60°
130. Two circles touch each other externally at P. AB is a common tangent to the circles touching them at A and B. The measure of $\angle APB$ is
 (A) 90° (B) 75°
 (C) 45° (D) 60°
131. Three sides of a triangle are $a^2 - 1$, $a^2 + 1$ and $2a$ respectively. Then the greatest angle of the triangle is
 (A) 60° (B) 30°
 (C) 90° (D) 45°
132. If $x + y = 4$, $x - y = 3$, find out the value of $16xy(x^2 + y^2)$.
 (A) 600 (B) 125
 (C) 175 (D) 350
133. Find the coefficient of x^2 in the expansion of $(x^2 + x + 1)(x^2 - x + 1)$.
 (A) +2 (B) -2
 (C) +1 (D) -1
134. The vertical angles of two isosceles triangles are same and the ratio of their areas is 9 : 16. Then the ratio of their heights is
 (A) 3 : 4 (B) 4 : 3
 (C) 9 : 16 (D) 16 : 9
135. AD is the perpendicular drawn from A upon the side BC of $\triangle ABC$. If $AD^2 = BD \cdot DC$, then the value of $\angle BAC$ is
 (A) 60° (B) 90°
 (C) 30° (D) 45°
136. If

$$\tan^2 \frac{\pi}{4} - \cos^2 \frac{\pi}{3} = x \sin \frac{\pi}{4} \cos \frac{\pi}{4} \tan \frac{\pi}{3},$$
 then $x =$
 (A) $\frac{1}{2}$ (B) $\frac{\sqrt{3}}{2}$
 (C) -1 (D) $\sqrt{2}$
137. The value of $(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \operatorname{cosec} \theta)$ is
 (A) -2 (B) 2
 (C) -1 (D) 1
138. The value of $\sin \theta$ and $\cos \theta$ is always less than 1 in $0 < \theta < 90^\circ$. Then the value of $\sin \theta + \cos \theta$ is
 (A) 0
 (B) always equal to 1
 (C) always less than 1
 (D) always greater than 1
139. $\sin^2 22^\circ + \sin^2 68^\circ + \cot^2 68^\circ$ is equal to
 (A) $\sin^2 68^\circ \cot^2 68^\circ$
 (B) $\sin^2 22^\circ \tan^2 68^\circ$
 (C) $\operatorname{cosec}^2 22^\circ \cot^2 68^\circ$
 (D) $\sin^2 22^\circ \cot^2 68^\circ$
140. In a triangle ABC, the external bisectors of $\angle B$ and $\angle C$ meet at O. If $\angle A = 70^\circ$, then the value of $\angle BOC$ is
 (A) 33° (B) 22°
 (C) 55° (D) 44°

141. Evaluate : $\sin^6 \theta + \cos^6 \theta + 3 \sin^2 \theta \cos^2 \theta$

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

142. A kite is flying at a height of 75 m from the level ground, attached to a string inclined at 60° to the horizontal. The length of the string is

- (A) $50\sqrt{2}$ m (B) $\frac{50}{\sqrt{2}}$ m
(C) $50\sqrt{3}$ m (D) $\frac{50}{\sqrt{3}}$ m

143. If $\sin^2 x + \sin^2 y = 1$, then the value of $\cot(x+y)$ is (assume that $0 < x, y < 90^\circ$)

- (A) 0 (B) 2
(C) 1 (D) $3/2$

Directions : Study the following table carefully and answer the questions no. 144 to 147.

Various foodgrains sold by various farmers at various prices (₹ per kg)					
Farmers	Rice	Corn	Bajra	Paddy	Jowar
A	30	22.5	22	24	18
B	36	28	24.5	25	24
C	40	24	21	26	20.5
D	34.5	27.5	28	25	25
E	36	32	30	28.5	27

144. If farmer A sells 350 kg of rice, 150 kg of corn and 250 kg of jowar, how much would he earn ?

- (A) ₹ 15,585 (B) ₹ 18,375
(C) ₹ 19,425 (D) ₹ 18,500

145. Earnings on 150 kg of paddy sold by farmer B are approximately what percent of the earnings on the same amount of rice sold by the same farmer ?

- (A) 73 (B) 60
(C) 65 (D) 69

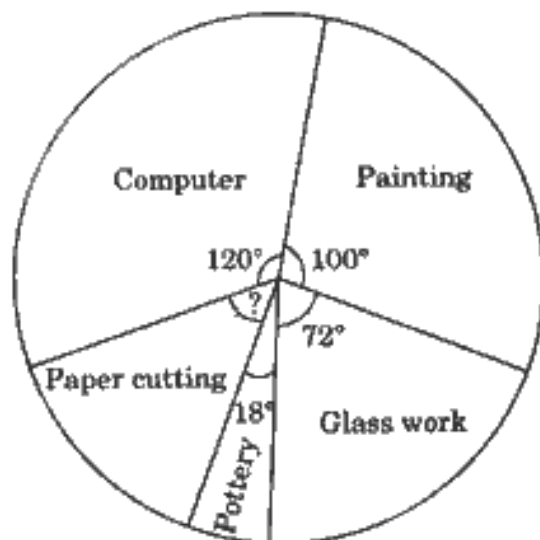
146. If farmer D and farmer E, both sell 240 kg of Bajra each, what would be the respective ratio of their earnings ?

- (A) 14 : 15 (B) 13 : 15
(C) 15 : 14 (D) 11 : 13

147. What is the average price per kg of Bajra sold by all the farmers together ?

- (A) ₹ 25.00 (B) ₹ 23.40
(C) ₹ 25.10 (D) ₹ 24.50

Directions : The following pie chart shows the different angles of sectors corresponding to the number of students in various classes in a "Hobby School" having 540 total number of students. Study the pie chart and answer the questions no. 148 to 150.



148. The percentage of students attending the "glass work" class is

- (A) 45% (B) 60%
(C) 30% (D) 20%

149. The ratio of the students attending the computer class to painting class is

- (A) 5 : 4 (B) 3 : 2
(C) 6 : 5 (D) 4 : 3

150. The number of students attending the paper cutting class is

- (A) 80 (B) 75
(C) 70 (D) 65

PART D : ENGLISH COMPREHENSION

Directions : In questions no. 151 to 155, some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the oval (●) corresponding to the appropriate letter (A, B, C). If a sentence is free from error, blacken the oval corresponding to (D) in the Answer Sheet.

151. All day / I was putting on / a sweater. / No error.
 (A) (B) (C) (D)
152. It is the duty of all citizen to do his utmost / to defend the hard-won / freedom of the country. /
 (A) (B) (C)
- No error.
 (D)
153. My best friend / and advisor have / made this suggestion. / No error.
 (A) (B) (C) (D)
154. The guidance / as well as the love of a mother / was wanting. / No error.
 (A) (B) (C) (D)
155. The accident happen / partly because they were having / an argument in the car. / 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 oval (●) in the Answer Sheet.

156. Anjali's performance in the drama was _____ than Deepali's but not as good as Vaishali's.
 (A) good (B) excellent
 (C) better (D) best
157. Neither the famine _____ the subsequent fire was able to destroy the spirit of the people.
 (A) and (B) with
 (C) nor (D) or
158. Judging by what he tells me, I don't think he has made a good impression _____ the manager of the company where he works.
 (A) on (B) at
 (C) to (D) for
159. Everyone was astonished _____ the referee's decision.
 (A) on (B) with
 (C) by (D) at
160. Of all the friends I have had, he is the most helpful and _____ arrogant.
 (A) more (B) most
 (C) less (D) the least

Directions : In questions no. 161 to 163, 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. Aberration
 (A) intensification (B) deviation
 (C) rationality (D) justification
162. Morose
 (A) angry (B) annoyed
 (C) gloomy (D) irritated
163. Capable
 (A) adept (B) smart
 (C) competent (D) intelligent

Directions : In questions no. 164 to 166, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

164. Callous
 (A) honest (B) frank
 (C) compassionate (D) gentle
165. Best
 (A) bad (B) cheap
 (C) worst (D) excellent
166. Many
 (A) few (B) some
 (C) one (D) scarce

Directions : In questions no. 167 to 171, 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.

167. To be in two minds

- (A) to work on somebody else's advice
- (B) to be in a critical state
- (C) to be dominated by someone else
- (D) to be uncertain

168. I don't believe a word he says. He's full of hot air.

- (A) a fool (B) a rogue
- (C) a pompous man (D) a liar

169. The new semester system introduced by the university is likely to run into rough weather.

- (A) meet a storm
- (B) confuse one and all
- (C) encounter difficulties
- (D) fail

170. During the meeting, he was asked to suggest ideas but he could not think of one off the top of his head.

- (A) without proper thought and investigation
- (B) spontaneously at that moment
- (C) because his creativity was blocked
- (D) because he was thinking too many things at the same time

171. Do not give way to their unjust demands.

- (A) enter (B) protest
- (C) yield (D) declare

Directions : In questions no. 172 to 181, a sentence/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.

172. My sister works as a teacher in a municipal school.

- (A) works in (B) taught in
- (C) teaches in (D) No improvement

173. Harriett ought to be at home by now.

- (A) is to have been home by now
- (B) were ought to be home by now
- (C) was to have been at home by now
- (D) No improvement

174. He is amazingly cheerful considering all he have had to go through.

- (A) all he go through
- (B) all he has had to go through
- (C) all he had go through
- (D) No improvement

175. The school boy had to explain the reason that he was late.

- (A) why (B) about why
- (C) on why (D) No improvement

176. We had to call out our picnic because of the rain.

- (A) call up (B) call off
- (C) call in (D) No improvement

177. Priya presented her undefensible arguments before the committee.

- (A) untenable (B) unthinkable
- (C) indefensible (D) No improvement

178. Which part of the country do you come from ?

- (A) heal (B) hale
- (C) hail (D) No improvement

179. The sale of arms is illegal and will be punished by law.

- (A) punishable in law
- (B) punishable by law
- (C) punishable through law
- (D) No improvement

180. Prem Das was known to be openly honest in all his dealings.

- (A) transparently (B) transparent
- (C) clearly (D) No improvement

181. We look forward to see you in our midst.

- (A) to seeing (B) to have seen
- (C) of seeing (D) No improvement

Directions : In questions no. 182 to 188, out of the four alternatives, choose the one which can be substituted for the given words/sentences and indicate it by blackening the appropriate oval (●) in the Answer Sheet.

182. Deeply worried or agitated

- (A) ignorant (B) distraught
(C) shocked (D) maniac

183. Persons working together in the same institution

- (A) colleagues (B) staff
(C) contemporary (D) brethren

184. One who does not believe in God

- (A) polytheist (B) atheist
(C) theist (D) monotheist

185. There was a peaceful settlement of the matter between the two parties.

- (A) friendship (B) solidarity
(C) compromise (D) understanding

186. O. Henry is the pen name used by William Sydney Porter.

- (A) synonym (B) antonym
(C) acronym (D) pseudonym

187. A person who collects postage stamps

- (A) philologist (B) phonologist
(C) philatelist (D) phrenologist

188. A person who has had one or more limbs cut off

- (A) amputee (B) truncation
(C) dissemination (D) curtailment

Directions : In questions no. 189 to 190, four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

189. (A) Mundane (B) Mondiane
(C) Mondane (D) Mundain

190. (A) Philately (B) Philataly
(C) Filataly (D) Fillataly

Directions : In questions no. 191 to 200, you have two brief passages with 5 questions following each passage. Read the passages carefully and choose the best answer to each question out of the four alternatives and mark it by blackening the appropriate oval (●) in the Answer Sheet.

Passage I (Q. Nos. 191 to 195)

Global warming is a very serious issue that is concerning every rational being on earth. Changes in rainfall and plant distribution as a result of global warming affect the migratory routes, feeding behaviour and mating habits of many birds. The rise in temperature might also lead to a change in ocean currents which might change their direction. The result will be the disruption of the entire marine ecosystem. Due to the warming of the Arctic region, huge amount of methane which is now frozen under the ocean shall escape into the air with the continuous melting of the region. This will cause a vicious cycle as methane is a green house gas that traps heat in the atmosphere and the added emissions might increase the warming process. The damage done can only be negated now by making every individual environment conscious. This might help in making us hope to gift a green earth to our future generation which now appears to face the threat of extinction.

191. What is the antonym of 'rational' ?

- (A) unrational
(B) irrational
(C) stupid
(D) foolish

192. What is a very serious issue according to the author ?

- (A) Feeding behaviour
(B) Changes in rainfall and feeding behaviour
(C) Global warming
(D) Changes in rainfall

193. According to the author,
- (A) warming of the Arctic region will release methane into the atmosphere
 - (B) warming of the Arctic region will preserve methane
 - (C) melting of the Arctic region will preserve methane
 - (D) melting of the Arctic region was long foreseen
194. What appears to face a threat of extinction today?
- (A) Marine ecosystem
 - (B) Our green earth
 - (C) The migratory birds
 - (D) The green house gases
195. What might lead to a change in ocean currents?
- (A) Disruption of marine ecosystem and rise in temperature
 - (B) Regulation of temperature
 - (C) Disruption of marine ecosystem
 - (D) Rise in temperature

Passage II (Q. Nos. 196 to 200)

Fleas are perfectly designed by nature to feast on anything containing blood. Like a shark in the water, fleas are ideally equipped to do what they do, making them very difficult to defeat. The body of a flea is covered by a tough, tile-like plate called Sclerite, therefore making it impossible to squish it. Its body is also waterproof and shock resistant thus making it highly resistant to sprays and chemicals. Fleas are best jumpers and can reproduce rapidly. Fleas are intimidating opponents. The best way to control fleas is to take steps to prevent an infestation from ever occurring.

196. According to the passage, fleas are resistant to sprays and chemicals because they
- (A) reproduce very rapidly
 - (B) cannot be squished
 - (C) have waterproof bodies
 - (D) are excellent jumpers
197. Using the information in the passage as a guide, it can be concluded that
- (A) humans do not pay much attention to the fleas
 - (B) fleas have many physical disadvantages
 - (C) humans do not possess the physical characteristics of the flea
 - (D) fleas have certain physical advantages in life
198. The primary purpose of this passage is to
- (A) relate the problems that can result from a flea infestation
 - (B) explain why a flea infestation is hard to control
 - (C) educate the readers about the physical characteristics of fleas
 - (D) compare fleas to other members of the animal kingdom
199. The author's tone in the passage is
- (A) informative
 - (B) opinionated
 - (C) concerned
 - (D) passionate
200. Fleas are difficult to squish because they
- (A) are best jumpers
 - (B) are difficult to defeat
 - (C) have sclerite covering their body
 - (D) are shock resistant