PART I : GENERAL INTELLIGENCE

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

1. Doctor : Hospital : : Teacher : ?
(A) Field (B) Laboratory
(C) School (D) Industry

2. 1st Prime Minister of India : Pt. Jawaharlal Nehru : : 1st President of India : ?
(A) Dr. S. Radhakrishnan
(B) Dr. Rajendra Prasad
(C) Dr. Zakir Hussain
(D) Dr. A.P.J. Abdul Kalam

3. International Literacy Day : September 8 : : International Women's Day : ?
(A) March 8 (B) June 26
(C) April 22 (D) November 4

4. ZX : AC : : VT : ?
(A) EG (B) DF
(C) AB (D) AE

5. ABCXYZ : DEFUVW : : GHIRST : ?
(A) JNOPKL (B) MNOLKJ
(C) JKLOPQ (D) JOKPLN

6. ACE : BDF : : MOQ : ?
(A) NPR (B) NZV
(C) MZU (D) MVT

7. 8 : 23 : : 48 : ?
(A) 90 (B) 138
(C) 168 (D) 112

8. 5 : 28 : : 8 : ?
(A) 40 (B) 64
(C) 25 (D) 67

9. CAT : 3120 : : MAT : ?
(A) 1312 (B) 10120
(C) 13120 (D) 12120

Directions : *In questions no. 10 to 17, find the odd word/letters/number from the given alternatives.*

10. (A) Asia (B) Canada
(C) Europe (D) Africa

11. (A) Violin (B) Sitar
(C) Flute (D) Piano

12. (A) Metre (B) Inch
(C) Litre (D) Yard

13. (A) STU (B) MLN
(C) QRS (D) XYZ

14. (A) 1, 2, 4, 7 (B) 2, 3, 4, 9
(C) 3, 2, 4, 8 (D) 4, 2, 3, 9

15. (A) 9, 10 (B) 24, 25
(C) 2, 3 (D) 20, 21

16. (A) 83 (B) 64
(C) 56 (D) 98

17. (A) Ocean (B) Waterfall
(C) Pond (D) River

18. Which one of the given responses would be a meaningful order of the following ?
1. House 2. Palace
3. Bungalow 4. Hut
(A) 1, 2, 3, 4 (B) 2, 3, 1, 4
(C) 3, 2, 1, 4 (D) 4, 1, 3, 2

19. Arrange the following in ascending order :
1. Centimetre 2. Kilometre
3. Decimetre 4. Metre
(A) 1, 3, 4, 2 (B) 2, 4, 3, 1
(C) 3, 1, 2, 4 (D) 4, 2, 1, 3

SPACE FOR ROUGH WORK / रफ़ कार्य के लिए स्थान

Directions : *In questions no. 20 and 21, which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?*

20. m_m_am_a_

(A) amam (B) ammm

(C) amaa (D) mama

21. a_ba_b_b_a_b

(A) abaab (B) aabba

(C) bbabb (D) abbab

Directions : *In questions no. 22 to 27, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.*

22. ICE, JDF, KEG, LFH, ?

(A) MIG (B) MHG

(C) MGI (D) HHI

23. EFGH, MNOP, QRST, ?

(A) QRTS

(B) VLMN

(C) UVWX

(D) JIKH

24. BY, GT, LO, ?, VE

(A) PJ (B) QJ

(C) QK (D) QP

25. 1, 8, 17, 30, ?, 76

(A) 39 (B) 49

(C) 59 (D) 69

26. 12, 8, 14, 6, 16, ?

(A) 18 (B) 32

(C) 5 (D) 4

27. 1, 6, 13, 22, 33, ?

(A) 47 (B) 43

(C) 46 (D) 44

28. Ann is 300 days older than Varun and Sandeep is 50 weeks older than Ann. If Sandeep was born on Tuesday, on which day was Varun born ?

(A) Monday

(B) Thursday

(C) Tuesday

(D) Friday

29. Hema was twice as old as Geeta 10 years ago. How old is Geeta today, if Hema will be 40 years old 10 years henceforth ?

(A) 25 years

(B) 20 years

(C) 15 years

(D) 35 years

30. From the given alternatives, select the word which can be formed using the letters of the given word.

IMMEASURABLE

(A) BAILABLE

(B) BLUE

(C) MEAT

(D) BIBLE

31. In a code language 'FORGE' is written as 'FPTJI'; how should 'CULPRIT' be written in the same code ?

(A) CVNSVNZ

(B) CSJNPGR

(C) CVMQSTU

(D) CXOSULW

32. The question given below is based upon the following set of codes :

Digit	:	1	3	5	4	6	0	8	7	2
Code	:	A	O	Z	L	D	T	N	H	Q

Find the code for 21500.

(A) SLPHO (B) SHLPO

(C) SLOPH (D) QAZTT

33. If $2 \times 16 = 8$; $8 \times 8 = 1$; $6 \times 12 = 12$, then $12 \times 144 = \underline{?}$

(A) 11 (B) 12

(C) 16 (D) 24

34. Some equations are solved on the basis of a certain system. Using the same, solve the unsolved equation.

If $10 - 3 = 12$, $12 - 4 = 13$, $14 - 5 = 14$, then $16 - 6 = \underline{?}$

(A) 10 (B) 15

(C) 16 (D) 18

Directions : *In questions no. 35 to 37, select the missing number from the given responses.*

35.

2	4
256	16

3	1
1	81

5	4
256	?

(A) 125 (B) 25

(C) 625 (D) 1225

36.

1	3	7
2	4	4
4	5	9
3	2	3
50	70	?

(A) 23 (B) 115

(C) 118 (D) 220

37.

13	9	24
11	?	6
16	20	10

(A) 11 (B) 20

(C) 19 (D) 16

38. Mr. Das started his journey from his hou straight to his friend's house at a distance 12 km. On returning he walked 8 km in t same route and turned right and walk 4 km, then he turned to his left and walk 4 km. Finally he turned to his left and walk 2 km. How far was he from his house ?

(A) 8 km

(B) 4 km

(C) 6 km

(D) 2 km

39. Seeta and Geeta started walking from point A. Seeta walks 6 km towards North a then takes a right turn and walks 3 km. S then takes a right turn towards South a walks for 6 km. She again takes a left tu and walks 3 km, and reaches a point B. Ge walks for 3 km towards West and takes a l turn and walks for 6 km; she takes a left tu and walks 9 km, and she reaches at a point How far is the point B from point C ?

(A) 3 km

(B) 4 km

(C) 9 km

(D) 6 km

SPACE FOR ROUGH WORK / रफ़ कार्य के लिए स्थान

40. Which conclusion is true with respect to the given statements ?

Statements :
Anand is an artist.
Artists are beautiful.

Conclusions :

(A) All beautiful persons are artists.

(B) Anand is beautiful.

(C) Anand is not beautiful.

(D) Beautiful persons are not artists.

41. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then how is A related to D ?

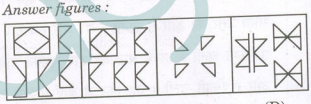
(A) Grandmother (B) Grandfather

(C) Daughter (D) Granddaughter

42. Select the appropriate answer figure from which the question figure is formed.

Question figure :

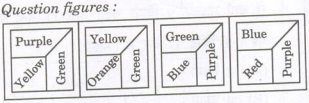
Answer figures :



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

43. Which colour is opposite to purple ?

Question figures :

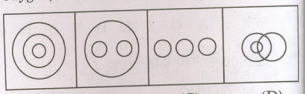


(A) Blue (B) Orange

(C) Red (D) Green

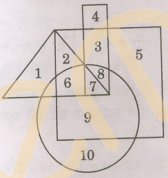
44. Identify the diagram that best represents the relationship among the classes given below.

Oxygen, Carbon dioxide and Atmosphere



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

45. Which statement is true with respect to the Venn diagram ?



(A) 6, 7 and 8 are in all the figures.

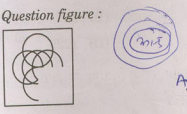
(B) 1, 5 and 9 are in all the figures.

(C) 1, 9 and 10 are in all the figures.

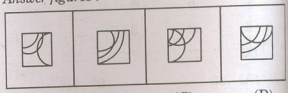
(D) 1, 2 and 6 are in the triangle.

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

Question figure :



Answer figures :

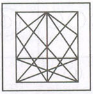


(A) (B) (C) (D)

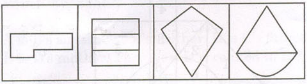
SPACE FOR ROUGH WORK / रफ़ कार्य के लिए स्थान

47. Which of the answer figures is embedded in the question figure ?

Question figure :



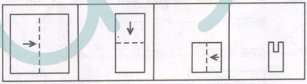
Answer figures :



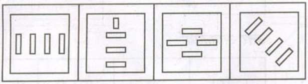
(A) (B) (C) (D)

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

Question figures :



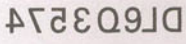
Answer figures :

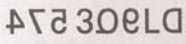


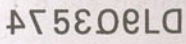
(A) (B) (C) (D)

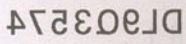
49. Identify the alternative which resembles the mirror-image of the given word.

DL9Q3574

(A) 

(B) 

(C) 

(D) 

50. A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in the two matrices given below. The columns and rows of Matrix I are numbered from 1 to 5 and that of Matrix II are numbered from 6 to 10. A letter from these matrices can be represented *first by its row* and *next by its column*, e.g., 'A' can be represented by 11, 23, etc., and 'G' can be represented by 67, 78, etc. Similarly, you have to identify the set for the word given below :

BEE

Matrix I

	1	2	3	4	5
1	A	B	C	D	E
2	E	D	A	B	C
3	B	C	D	E	A
4	D	A	E	C	D
5	C	E	B	A	B

Matrix II

	6	7	8	9	10
6	F	G	H	I	J
7	J	I	G	H	F
8	F	H	I	J	G
9	G	J	F	G	I
10	H	E	J	F	E

(A) 12, 15, 41

(B) 12, 21, 15

(C) 12, 15, 33

(D) 21, 12, 22

SPACE FOR ROUGH WORK / रफ़ कार्य के लिए स्थान

FOR VISUALLY HANDICAPPED / CEREBRAL PALSY CANDIDATES ONLY

Directions : *In questions no. 42 to 45, select the related word from the given alternatives.*

42. Earth : Planet : : Milky-Way : ?

(A) Satellite

(B) Galaxy

(C) Moon

(D) Sun

43. Homicide : Human : : Fratricide : ?

(A) Father

(B) Farmer

(C) Friend

(D) Brother

44. Cricket : Stadium : : Gambling : ?

(A) Bar

(B) Gym

(C) Casino

(D) Club

45. ? : Hen : : Cub : ?

(A) Eggs, Cat

(B) Meat, Lion

(C) Chicken, Lion

(D) Chicken, Den

Directions : *In questions no. 46 and 47, find the odd number from the given alternatives.*

46. (A) 235
(B) 343
(C) 457
(D) 678

47. (A) 7359
(B) 1593
(C) 9175
(D) 3781

48. Which of the following is a leap year ?

(A) 1400

(B) 1700

(C) 1800

(D) 2000

49. If the figures are arranged in a sequence, which figure will be in the middle ?

Figures : Triangle, Hexagon, Quadrilateral, Angle, Pentagon

(A) Quadrilateral

(B) Angle

(C) Triangle

(D) Pentagon

50. Insert the arithmetical signs in the following numerical figures :

5, 3, 8, 6 = 138

(A) × − +

(B) × + ×

(C) × × +

(D) + + ×

SPACE FOR ROUGH WORK / रफ़ कार्य के लिए स्थान

PART II : ENGLISH COMPREHENSION

Directions : *In questions no. 51 to 55, 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.*

51. One must learn / to distinguish / good from bad. / No error.
(A) (B) (C) (D)

52. The children / laughed at / the clown. / No error.
(A) (B) (C) (D)

54. Had the plane not been delayed, / I will reach here / in time for the function. / No error.
(A) (B) (C) (D)

54. In India, hill stations / usually have / beautiful sceneries. / No error.
(A) (B) (C) (D)

55. She was ill for five days / when the doctor / was sent for. / No error.
(A) (B) (C) (D)

Directions : *In questions no. 56 to 60, 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.*

56. I think I am _____ young to get married.
(A) much
(B) too
(C) more
(D) very

57. The pilot was not feeling so well before he _____ in his helicopter.
(A) took away
(B) took over
(C) took off
(D) took up

58. I need to buy_____ .
(A) a bread
(B) a loaf of bread
(C) a loaf bread
(D) breads

59. Medical science has _____ almost everything except death.
(A) surrendered
(B) conquered
(C) controlled
(D) crushed

60. To try to solve a problem without enquiring into the problem is like taking a course of treatment without _____ the disease.
(A) curing
(B) prescribing
(C) diagnosing
(D) operating

Directions : *In questions no. 61 to 65, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.*

61. Adequate
- (A) Suitable
- (B) Capable
- (C) Appropriate
- (D) Enough

62. Yearn
- (A) To earn
- (B) To crave
- (C) To regret
- (D) To yawn

63. Transmission
- (A) Administer
- (B) Conveyance
- (C) Connect
- (D) Disconnect

64. Meander
- (A) Blow
- (B) Curve
- (C) Bend
- (D) Wind

65. Jabber
- (A) Eloquent
- (B) Chatter
- (C) Talk
- (D) Speak

Directions : *In questions no. 66 to 70, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.*

66. Transparent
- (A) Opposite
- (B) Opaque
- (C) Raised
- (D) Coloured

67. Consent
- (A) Resent
- (B) Dissent
- (C) Differ
- (D) Recent

68. Carnal
- (A) Civilized
- (B) Spiritual
- (C) Brave
- (D) Friendly

69. Turbulent
- (A) Placid
- (B) Cautious
- (C) Deliberate
- (D) Obedient

70. Squandering
- (A) Discarding
- (B) Saving
- (C) Boarding
- (D) Collecting

Directions : *In questions no. 71 to 75, 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.*

71. The girl took after her father. She is very amiable like him.

(A) similar to

(B) different

(C) behind

(D) takes

72. Your behaviour is simply beyond the pale.

(A) outside commonly accepted standards

(B) beyond sorrow

(C) uninteresting

(D) something acceptable

73. The much hyped event turned out be a nine days' wonder.

(A) an event that lasted for nine days

(B) created awe for nine days

(C) a dazzling spectacle of great value

(D) a dazzling short-lived spectacle of no real value

74. Listening to the lecture was watching grass grow.

(A) very boring

(B) very interesting

(C) very confusing

(D) very informative

75. Suddenly the balloon goes up in the middle of the conversation.

(A) the situation turns unpleasant or serious

(B) a sudden shift in the topic of conversation

(C) the conversation takes a lighter note

(D) an abrupt silence takes place

Directions : *In questions no. 76 to 80, a part of the sentence is underlined. Below are given alternatives to the underlined part at (A), (B), (C) which may improve the sentence. Choose the correct alternative. In case no improvement is needed, your answer is (D). Mark your answer in the Answer Sheet.*

76. The octopus uses its arms for hunting and locomotion.

(A) fins

(B) flippers

(C) tentacles

(D) No improvement

77. It is compulsory for every citizen to help the administration for keep as the city clean.

(A) for upkeep clean the city

(B) for keeping of the city cleanliness

(C) to keep the city clean

(D) No improvement

78. Mr. Sharma has been living in this city since five years.

(A) for

(B) only

(C) from

(D) No improvement

79. Kamal's suggestion was greeted with hoots of laughter.

(A) in

(B) at

(C) on

(D) No improvement

80. I could not help to laugh at the joke.

(A) laughing

(B) laugh

(C) to laughing

(D) No improvement

Directions : *In questions no. 81 to 85, out of the four alternatives, choose the one which can be substituted for the given words / words underlined in the sentence.*

81. The secretary's proposal was adopted with the full agreement of all the members.

(A) Ambitiously (B) Unanimously
(C) Equivocally (D) Vehemently

82. That which makes it difficult to recognize the presence or real nature of something

(A) Camouflage (B) Transparent
(C) Infallible (D) Image

83. Code of diplomatic etiquette and precedence

(A) Formality (B) Statesmanship
(C) Protocol (D) Hierarchy

84. A person who can make himself/herself feel at home in any country

(A) Cosmocrat (B) Cosmesis
(C) Cosmetician (D) Cosmopolitan

85. The Bedouin Arabs are people of no fixed abode.

(A) Barbarians (B) Nomads
(C) Vagabonds (D) Travellers

Directions : *In questions no. 86 to 90, 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.*

86. (A) Spontaneous (B) Spontaneus
(C) Spontenious (D) Spontanous

87. (A) Passanger (B) Symptum
(C) Quarelling (D) Referee

88. (A) Palatible (B) Flexeble
(C) Illegible (D) Invinceble

89. (A) Addept (B) Inferrnal
(C) Ambiguous (D) Confusse

90. (A) Juivinile (B) Juvieline
(C) Juvinile (D) Juvenile

Directions : *In questions no. 91 to 100, in the following passages some of the words have been left out. Read the passages carefully and choose the correct answer to each question out of the four alternatives and fill in the blanks.*

Passage I (Q. No. 91 to 100)

91 looking after the health aspect of the team, Dr. Alka also 92 a few emergency cases 93 included a suspected spinal injury 94 a fall from an oil tanker. She herself had a close 95 with death when she was taking pictures of the 96 atop a German ship. A blizzard could have 97 had the radio officer not pulled her 98 a room. Also 99 the only woman in a 24-member team, she missed the company 100 women.

91. (A) Beside (B) Besides
(C) Despite (D) When

92. (A) attended to (B) attended
(C) looked (D) watched

93. (A) who (B) that
(C) these (D) those

94. (A) because (B) when
(C) caused (D) due to

95. (A) victory (B) brush
(C) bruise (D) fight

96. (A) scenic (B) scenery
(C) scenario (D) seen

97. (A) swept her away (B) sweeping her
(C) swept (D) sweeps her away

98. (A) for (B) at
(C) inside (D) about

99. (A) having (B) being
(C) becoming (D) keeping

100. (A) for (B) with
(C) of (D) about

PART III : QUANTITATIVE APTITUDE

101. The least value of n, such that $(1 + 3 + 3^2 + ... + 3^n)$ exceeds 2000, is

(A) 5 (B) 6

(C) 7 (D) 8

102. The simplified value of $(0{\cdot}2)^3 \times 200 \div 2000$ of $(0{\cdot}2)^2$ is

(A) $\frac{1}{100}$ (B) $\frac{1}{50}$

(C) $\frac{1}{10}$ (D) 1

103. The odd one out from the sequence of numbers 19, 23, 29, 37, 43, 46, 47 is

(A) 23 (B) 46

(C) 37 (D) 19

104. The next number of the sequence $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, \cdots$ is

(A) $\frac{10}{24}$ (B) $\frac{11}{32}$

(C) $\frac{9}{24}$ (D) $\frac{9}{32}$

105. The least number by which 20184 must be multiplied so as to make the product a perfect square is

(A) 2 (B) 3

(C) 5 (D) 6

106. One man or two women or three boys can do a piece of work in 88 days. One man, one woman and one boy will do it in

(A) 44 days (B) 24 days

(C) 48 days (D) 20 days

107. Two pipes A and B can separately fill a tank in 2 hours and 3 hours respectively. If both the pipes are opened simultaneously in the empty tank, then the tank will be filled in

(A) 1 hour 12 minutes

(B) 2 hours 30 minutes

(C) 1 hour 15 minutes

(D) 1 hour 20 minutes

108. The difference between the circumference and diameter of a circle is 150 m. The radius of that circle is (Take $\pi = \frac{22}{7}$)

(A) 25 m (B) 35 m

(C) 30 m (D) 40 m

109. If the radius of a sphere be doubled, then the percentage of increase in volume is

(A) 500% (B) 700%

(C) 600% (D) 800%

110. A merchant offers 8% discount on all his goods and still makes a profit of 15%. If an item is marked ₹ 250, then its cost price is

(A) ₹ 180 (B) ₹ 200

(C) ₹ 230 (D) ₹ 187

111. If in a sale, the discount given on a saree is equal to one-fourth the marked price and the loss due to this discount is 15%, then the ratio of the cost price to the selling price is

(A) 3 : 4 (B) 4 : 3

(C) 10 : 17 (D) 20 : 17

112. Two numbers are in the ratio of 2 : 3. If their sum is 125, find the numbers.

(A) 50, 75 (B) 24, 36

(C) 20, 30 (D) 32, 78

113. A box contains 280 coins of one-rupee, 50-paise and 25-paise. The values of each kind of the coins are in the ratio of 8 : 4 : 3. Then the number of 50-paise coins is

(A) 70 (B) 60

(C) 80 (D) 90

114. The average age of P, Q and R is 5 years more than R's age. If the total ages of P and Q together is 39 years, then R's age is

(A) 12 years (B) 24 years

(C) 16 years (D) 14 years

SPACE FOR ROUGH WORK / रफ़ कार्य के लिए स्थान

115. The average of two numbers is 8 and that of another three numbers is 3. The average of those five numbers is

(A) 7 (B) 5·5
(C) 6 (D) 5

116. A merchant loses 10% by selling an article. If the cost price of the article is ₹ 15, then the selling price of the article is

(A) ₹ 13·20 (B) ₹ 16·50
(C) ₹ 12·30 (D) ₹ 13·50

117. Yogita sold a plasma TV at 20% gain to Shyamla. Shyamla sold it to Deepa at 10% profit. If Deepa had to pay ₹ 33,000 for the plasma TV, find the cost price of the plasma TV for Yogita.

(A) ₹ 30,000 (B) ₹ 25,000
(C) ₹ 35,000 (D) ₹ 40,000

118. If 8% of x = 4% of y, then 20% of x is

(A) 10% of y (B) 16% of y
(C) 40% of y (D) 80% of y

119. At an election there were two candidates. A candidate got 38% vote and lost by 7200 number of votes. The total number of valid votes were

(A) 13000 (B) 13800
(C) 16200 (D) 30000

120. A car travels at a speed of 60 km/hr and covers a particular distance in one hour. How long will it take for another car to cover the same distance at 40 km/hr ?

(A) $\frac{5}{2}$ hours (B) 2 hours
(C) $\frac{3}{2}$ hours (D) 1 hour

121. The compound interest on a sum of money for 2 years is ₹ 615 and the simple interest for the same period is ₹ 600. Find the principal.

(A) ₹ 6,500 (B) ₹ 6,000
(C) ₹ 8,000 (D) ₹ 9,500

122. The perimeter of a triangle is 54 m and sides are in the ratio of 5 : 6 : 7. The area the triangle is

(A) 18 m^2 (B) $54\sqrt{6}$ m^2
(C) $27\sqrt{2}$ m^2 (D) 25 m^2

123. The lengths of two parallel sides of trapezium are 6 cm and 8 cm. If the height the trapezium be 4 cm, then its area is

(A) 28 cm (B) 28 sq. cm
(C) 30 sq. cm (D) 30 cm

124. If the ratio of an external angle and internal angle of a regular polygon is 1 : 1 then the number of sides of the regul polygon is

(A) 20 (B) 18
(C) 36 (D) 12

125. A bicycle wheel has a diameter (including th tyre) of 56 cm. The number of times th wheel will rotate to cover a distance of 2·2 k is (Assume $\pi = \frac{22}{7}$)

(A) 625 (B) 1250
(C) 1875 (D) 2500

126. A tree of height 'h' metres is broken by storm in such a way that its top touches th ground at a distance of 'x' metres from it root. Find the height at which the tree i broken. (Here h > x)

(A) $\frac{h^2 + x^2}{2h}$ metres
(B) $\frac{h^2 - x^2}{2h}$ metres
(C) $\frac{h^2 + x^2}{4h}$ metres
(D) $\frac{h^2 - x^2}{4h}$ metres

127. If $x^2 + ax + b$ is a perfect square, then whic one of the following relations between a and is true ?

(A) $a^2 = b$ (B) $a^2 = 4b$
(C) $b^2 = 4a$ (D) $b^2 = a$

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128. If $a + b + c + d = 4$, then the value of

$$\frac{1}{(1-a)(1-b)(1-c)} + \frac{1}{(1-b)(1-c)(1-d)} + \frac{1}{(1-c)(1-d)(1-a)} + \frac{1}{(1-d)(1-a)(1-b)}$$ is

(A) 0 (B) 5

(C) 1 (D) 4

129. If $t^2 - 4t + 1 = 0$, then the value of $t^3 + \frac{1}{t^3}$ is

(A) 44 (B) 48

(C) 52 (D) 64

130. If $a^{1/3} + b^{1/3} + c^{1/3} = 0$, then a relation among a, b, c is

(A) $a + b + c = 0$

(B) $(a + b + c)^3 = 27abc$

(C) $a + b + c = 3abc$

(D) $a^3 + b^3 + c^3 = 0$

131. If $\sqrt[3]{a} + \sqrt[3]{b} = \sqrt[3]{c}$, then the simplest value of $(a + b - c)^3 + 27abc$ is

(A) -1 (B) 3

(C) -3 (D) 0

132. The side BC of a triangle ABC is extended to D. If $\angle ACD = 120°$ and $\angle ABC = \frac{1}{2} \angle CAB$, then the value of $\angle ABC$ is

(A) 80° (B) 40°

(C) 60° (D) 20°

133. Two circles having radii r units intersect each other in such a way that each of them passes through the centre of the other. Then the length of their common chord is

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

(C) $r\sqrt{5}$ units (D) r units

134. In ΔABC, $\angle A = \angle B = 60°$, $AC = \sqrt{13}$ c
The lines AD and BD intersect at D wi
$\angle D = 90°$. If DB = 2 cm, then the length
AD is

(A) 3 cm (B) 3·5 cm

(C) 4 cm (D) 4·7 cm

135. In ΔABC, the medians AD, BE and C
intersect each other at the point G. If t
area of ΔABC is 36 sq. cm, then the ar
(in sq. cm) of the quadrilateral BDGF is equ
to

(A) 6 (B) 12

(C) 18 (D) 24

136. In ΔABC, D is the mid-point of BC. Length
AD is 27 cm. N is a point on AD such that th
length of DN is 12 cm. The distance of N fro
the centroid of ΔABC is equal to

(A) 3 cm (B) 6 cm

(C) 9 cm (D) 15 cm

137. If $\tan(A + B) = \sqrt{3}$ and $\tan(A - B) = \frac{1}{\sqrt{3}}$, $\angle(A + B) < 90°$, $A \geq B$, then $\angle A$ is

(A) 90° (B) 30°

(C) 45° (D) 60°

138. The value of $\frac{\sin\theta - 2\sin^3\theta}{2\cos^3\theta - \cos\theta}$ is equal to

(A) $\sin\theta$ (B) $\cos\theta$

(C) $\tan\theta$ (D) $\cot\theta$

139. If $r\sin\theta = \frac{7}{2}$ and $r\cos\theta = \frac{7\sqrt{3}}{2}$, then th
value of r is

(A) 4 (B) 3

(C) 5 (D) 7

140. If $\theta + \phi = \frac{\pi}{2}$ and $\sin\theta = \frac{1}{2}$, then the valu
of $\sin\phi$ is

(A) 1 (B) $\frac{1}{\sqrt{2}}$

(C) $\frac{1}{2}$ (D) $\frac{\sqrt{3}}{2}$

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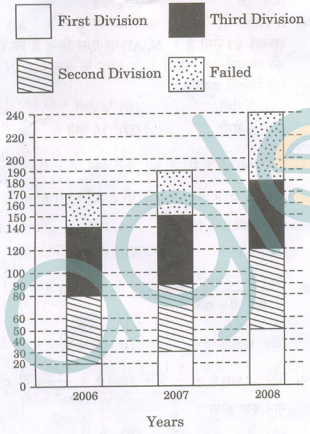
141. The angle of elevation of the top of a tower from a point on the ground is 30° and moving 70 metres towards the tower it becomes 60°. The height of the tower is

(A) 10 metres (B) $\frac{10}{\sqrt{3}}$ metres

(C) $10\sqrt{3}$ metres (D) $35\sqrt{3}$ metres

Directions : *The subdivided bar diagram given below depicts the result of B. Com. students of a college for 3 years. Study the graph and answer the questions no. 142 to 145.*



142. How many percent passed in first division in 2007 ?

(A) $15\frac{15}{19}\%$ (B) $11\frac{13}{17}\%$

(C) $16\frac{2}{3}\%$ (D) $12\frac{1}{2}\%$

143. What was the pass percentage in 2008 ?

(A) $33\frac{1}{3}\%$ (B) $82\frac{6}{17}\%$

(C) 75% (D) 78%

144. What was the number of third divisions in 2006 ?

(A) 60 (B) 140

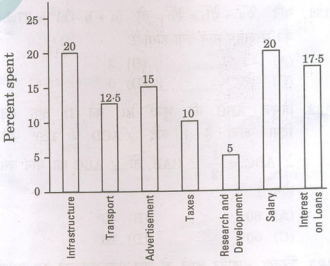
(C) 59 (D) 120

145. In which year, did the college have the best result for B. Com ?

(A) 2007 and 2008 (B) 2008

(C) 2007 (D) 2006

Directions : *The bar-graph given below shows the percentage distribution of total expenditures of a company under various expense heads during 2013. Study the graph and answer the questions no. 146 to 150.*



146. The expenditure on the interest on loans is what percent more than the expenditure on transport ?

(A) 5% (B) 10%

(C) 20% (D) 40%

SPACE FOR ROUGH WORK / रफ़ कार्य के लिए स्थान

147. The ratio of the total expenditure on infrastructure and transport to the total expenditure on taxes and interest on loans is

(A) 5 : 4 (B) 8 : 7

(C) 9 : 7 (D) 13 : 11

148. If the expenditure on advertisement is ₹ 2·10 crores, then the difference between the expenditures on transport and taxes is

(A) ₹ 25 lakhs (B) ₹ 35 lakhs

(C) ₹ 65 lakhs (D) ₹ 95 lakhs

149. If the total amount of expenditure of the company is N times the expenditure on research and development, then the value of N is

(A) 5 (B) 18

(C) 20 (D) 27

150. If the interest on loans amounts to ₹ 2·45 crores, then the total amount of expenditure on advertisement, taxes and research and development is

(A) ₹ 2·4 crores (B) ₹ 4·2 crores

(C) ₹ 5·4 crores (D) ₹ 7 crores

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142. The value of $\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+\frac{1}{30}+\frac{1}{42}$ is

(A) $\frac{5}{14}$ (B) $\frac{1}{14}$

(C) $\frac{2}{17}$ (D) $\frac{3}{14}$

143. What number should be in place of x in 7 : 14 = 15 : x ?

(A) 28 (B) 30

(C) 35 (D) 42

144. A moneylender finds that due to an increase in the rate of interest from 12% to 15%, his yearly income increases by ₹ 1,215. His capital is

(A) ₹ 35,000 (B) ₹ 40,000

(C) ₹ 40,500 (D) ₹ 41,500

145. The difference between the percentage equivalent of $\frac{2}{7}$ and $\frac{2}{13}$, each correct to one place of decimal, is

(A) 13·2 (B) 13·1

(C) 13·3 (D) 13·4

146. The simplified value of

$$\frac{a^2}{(a-b)(a-c)}+\frac{b^2}{(b-c)(b-a)}+\frac{c^2}{(c-a)(c-b)}$$ is

(A) a + b + c (B) $\frac{1}{a+b+c}$

(C) 1 (D) abc

147. The value of

$$\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right)\ldots\left(1-\frac{1}{n}\right)$$ is

(A) $\frac{1}{n}$ (B) $\frac{2}{n}$

(C) $\frac{2(n-1)}{n}$ (D) $\frac{2}{n(n-1)}$

148. If the perimeter of a square be $8\sqrt{2}$ cm, then the length of its diagonal is

(A) 2 cm (B) 4 cm

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

149. If sec θ + cos θ = 7, then the value of $\sec^2\theta+\cos^2\theta$ is

(A) 46 (B) 47

(C) 49 (D) 28

150. The value of $\cot^2\theta-\cos^2\theta$ is equal to

(A) $\cot^2\theta\sin^2\theta$ (B) $\tan^2\theta\cos^2\theta$

(C) $\cos^2\theta\sin^2\theta$ (D) $\cos^2\theta\cot^2\theta$

SPACE FOR ROUGH WORK / रफ़ कार्य के लिए स्थान

PART IV : GENERAL AWARENESS

151. Debenture holders of a company are its

(A) Shareholders (B) Creditors

(C) Debtors (D) Directors

152. Savings rate is relatively low in developed economies because of

(A) Low per capita income

(B) Welfare programmes

(C) Liquidity/Borrowing constraint

(D) High interest rate

153. Maruti cars are mainly based on

(A) Japanese Technology

(B) Korean Technology

(C) Russian Technology

(D) German Technology

154. The terms 'Bull' and 'Bear' are associated with

(A) Banking

(B) Foreign Trade

(C) Stock Market

(D) Internet Trade

155. A currency whose exchange rate is influenced by the government is a/an

(A) Unmanaged Currency

(B) Managed Currency

(C) Scarce Currency

(D) Surplus Currency

156. The State Election Commission conducts, controls and supervises Municipal elections under

(A) Article 240 (1)

(B) Article 241 (2)

(C) Article 243 (K)

(D) Article 245 (D)

157. Which one of the following judgements stated that 'Secularism' and 'Federalism' are the basic features of the Indian Constitution ?

(A) Keshavananda Bharati case

(B) S.R. Bommai case

(C) Indira Sawhney case

(D) Minerva Mills case

158. Which committee was established on Criminal – Politician and Bureaucratic nexus ?

(A) Vohra Committee

(B) Indrajit Gupta Committee

(C) Tarkunde Committee

(D) Santhanam Committee

159. In which year was the Prevention of Terrorism Act (POTA) enacted ?

(A) 2000 (B) 2001

(C) 2002 (D) 2003

160. Who was the Chief Architect of SAARC ?

(A) Zia-ur-Rahman

(B) General Zia-ul-Haq

(C) Rajiv Gandhi

(D) Jayawardene

161. From which among the following rulers has the Government of India borrowed and adopted its symbols ?

(A) Ashoka

(B) Krishnadevaraya

(C) Pulakesin

(D) Kanishka

162. The first Atom bomb was dropped on Hiroshima on

(A) August 6, 1945

(B) August 9, 1945

(C) August 9, 1946

(D) August 6, 1942

163. 6th century B.C. was an age of

(A) Reasoning

(B) Intellectual awakening

(C) Political unrest

(D) Religious ferment

164. 'Indica' was authored by

(A) Kautilya (B) Megasthenes

(C) Aryabhatta (D) Seleucus

165. The slogan of the French Revolution was

(A) One nation, one leader and one flag

(B) Government of the people, by the people and for the people

(C) Liberty, equality and fraternity

(D) None of the above

166. The world's largest island is

(A) Greenland

(B) Madagascar

(C) New Zealand

(D) Sri Lanka

167. The most ideal region for the cultivation of coffee in India is the

(A) Indo-Gangetic Valley

(B) Brahmaputra Valley

(C) Rann of Kutch

(D) Deccan Plateau

168. The humidity of air depends on

(A) Temperature

(B) Location

(C) Weather

(D) All of the above

169. The oilseed which is ***not*** edible

(A) Sunflower (B) Cottonseed

(C) Sesamum (D) Groundnut

170. The 'Masai' is a primitive tribe of

(A) Angola (B) Botswana

(C) Nigeria (D) Tanzania

171. Which fruit has its seed outside ?

(A) Strawberry (B) Banana

(C) Groundnut (D) Cashew nut

172. Tropical rain forest is characterised by

(A) Absence of trees

(B) Least productivity

(C) Maximum biodiversity

(D) Minimum biodiversity

173. Enzymes are

(A) Proteins

(B) Minerals

(C) Oils

(D) Fatty acids

174. The largest cells in mammalian blood are

(A) Erythrocytes

(B) Monocytes

(C) Basophils

(D) Lymphocytes

175. Who proposed Binomial Nomenclature ?

(A) Linnaeus. (B) John Ray

(C) Huxley (D) Aristotle

176. Who proposed Five Kingdom Classification ?

(A) R.H. Whittaker

(B) John Ray

(C) Carolus Linnaeus

(D) H.F. Copeland

177. Which of the following have the same unit ?

(A) Work and power

(B) Torque and moment of inertia

(C) Work and torque

(D) Torque and angular momentum

178. In a particular system, the units of length, mass and time are chosen to be 10 cm, 10 g and 0·1 s respectively. The unit of force in this system will be equivalent to

(A) 0·1 N (B) 1 N

(C) 10 N (D) 100 N

179. Distances of stars are measured in

(A) Galactic unit

(B) Stellar mile

(C) Cosmic kilometer

(D) Light year

180. Loudness of sound depends on

(A) Frequency

(B) Wavelength

(C) Amplitude

(D) Pitch

181. What is the full form of ALU ?

(A) Alternative Logic Unit

(B) Arithmetic Logic Unit

(C) Arithmetic Least Unit

(D) Arithmetic Local Unit

182. The popular search engine "Google" derives its name from the word "Googol". What does the word mean ?

(A) To search

(B) To index

(C) To crawl

(D) The numeral one followed by a hundred zeros

183. Carborundum is another name of

(A) Silicon carbide

(B) Silicon oxide

(C) Calcium carbide

(D) Calcium oxide

184. Number of atoms present in one mole of a gas at STP is

(A) $6{\cdot}023 \times 10^{20}$ (B) $6{\cdot}023 \times 10^{23}$

(C) $6{\cdot}023 \times 10^{-23}$ (D) $6{\cdot}023 \times 10^{-20}$

185. The vitamin which is very labile and easily destroyed during cooking as well as storage is vitamin

(A) D (B) C

(C) B_6 (D) K

186. Number of neutrons in an atom of hydrogen is
(A) One (B) Zero
(C) Two (D) Three

187. The heat value of combustion of Gasoline is
(A) 12600 kJ/kg (B) 14600 kJ/kg
(C) 39400 kJ/kg (D) 47000 kJ/kg

188. When the moon completely covers the sun, it is known as
(A) the Antumbra
(B) the Umbra
(C) the Penumbra
(D) None of these

189. The rhythmic rise and fall of ocean water twice in a day is called
(A) Tide
(B) Ocean current
(C) Wave
(D) Water cycle

190. Why is the South Pole colder than the North Pole ?
(A) High altitude (B) More rainfall
(C) Strong winds (D) Away from the sun

191. Which of the following countries has asked India to return the famous 'Dancing Girl' statue from Mohenjodaro ?
(A) Bangladesh (B) Bhutan
(C) China (D) Pakistan

192. Who invented aeroplane ?
(A) Edison (B) Stevenson
(C) Hoffman (D) Wright Brothers

193. Who developed the model of atomic structure ?
(A) Bohr and Rutherford
(B) Volta
(C) Alfred Nobel
(D) Faraday

194. Which Indian cricketer has written the book, 'One Day Wonders' ?
(A) Kapil Dev (B) Sachin Tendulkar
(C) Sunil Gavaskar (D) Ravi Shastri

195. Which is the holy book of the Sikh religion ?
(A) Bhagwad Gita
(B) Baani
(C) Gurmukhi
(D) Guru Granth Sahib

196. In whose work do we find the character 'Rusty' ?
(A) R.K. Narayan
(B) Ruskin Bond
(C) R.K. Laxman
(D) Rabindranath Tagore

197. Which of the following trophies is ***not*** awarded in cricket ?
(A) Deodhar Trophy
(B) Ashes
(C) Ryder Cup
(D) Ranji Trophy

198. 'Survival of the fittest' was coined by
(A) Darwin (B) Lamarck
(C) Mendel (D) Weismann

199. Which of the following forts was ***not*** built by Akbar ?
(A) Gwalior Fort
(B) Agra Fort
(C) Lahore Fort
(D) Allahabad Fort

200. Name the Japanese art of miniaturisation of trees.
(A) Bonsai (B) Kirigami
(C) Origami (D) Ikebana