TS ICET 27th July 2022 Shift-2

Analytical Ability

Instructions [1 - 20]

In the following questions numbered 1 to 20, a question is followed by data in the form of two statements labelled as (I) and (II). You must decide whether the data given in the statements are sufficient to answer the questions.

1. **If a , b and c are sides of a triangle, is it a right angled triangle?**
   (I) a < b + c.
   (II) a., b, c are consecutive integers.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: D

2. **Is the integer n a prime?**
   (I) $(n+1)^2$ **is even.**
   (II) n + l is prime.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: D

3. **What is the mean height of the students in a class of 40 students?**
   (I) The total of the heights of the students in the class is 42.50 meters.
   (II) The class has equal number of boys and girls.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: A

4. **What is the area of that rectangle?**
   (I) Perimeter of that rectangle is 34 cm .
   (II) Length of the diagonal is 13 cm .

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: C

5. **Is the positive integer n even?**
   (I) $(n+3)^2$ **is divisible by 9.**
   (II) $(n+2)^3$ **is an odd integer.**

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: B

6. **What is the radius of the sphere?**
   (I) Surface area of the sphere is not more than 144n cm^2**.**
   (II) Volume of the sphere is not less than $288\pi cm^3$**.**

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: C

7. **What is the va lue of c?**
   (I) a, b and care real numbers and b + c = d.
   (II) d - b = 50.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: C

8. **What is the common difference of the Arithmetic Progression?**
   (I) The sum of its first 20 terms is 580.
   (II) The eleventh and the sixteenth terms of the Arithmetic Progression are 31 and 46 respectively.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: B

9. **What is the average of p, q, r and s?**
   (I) 3(p + q + s) = 63 and r = 3.
   (II) p + q + r = s + 24.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: A

10. **What is the percentage of defective items produced in the factory?**
    (I) The total number of defective items produced in that factory is 450.
    (II) The ratio of defective items to non-defective items is 50 : 1250.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

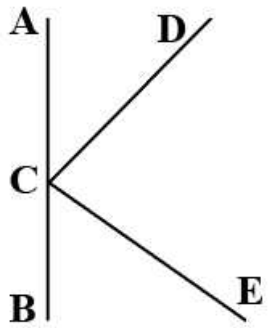
B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: B

11. **If ACB is a straight line, what is the angle $\angle$ ACD ?**
    (I) DC is perpendicular to CE.
    (II)2 $\angle$ ECB = 3 $\angle$ ACD.



A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

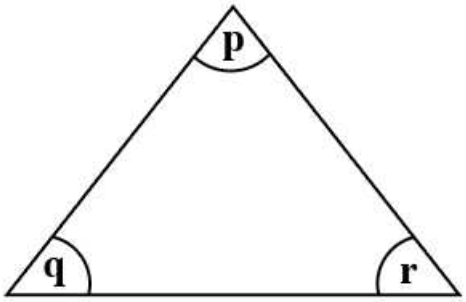
B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: C

12. **What is the value of r in the following triangle?**
(I) $p + q = 110^\circ$
(II) $q + r = 120^\circ$



A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: A

13. **What is the total enrolment of students in the class?**
(I) The number of boys and girls in the class are in the ratio 1 : 4.
(II) The total enrolment of students is a two digit perfect square.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: C

14. **What is the height of the tower AB?**
(I) Seen from a point C in line wit h B t he angle of elevation of A is 30°.
(II) Seen from another point D in line with B the angle of elevation of A is 45°.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: D

15. **What is the rate of simple interest on the tenn deposit?**
(I) The amount deposiited is Rs.50000.
(II) At the end of the term the amount received is Rs.56000.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: D

16. **What is the present age of the mother?**
(I) After five years, the mother will be twice the age of her daughter.
(II) Fifteen years ago the mother was twice the age of her daughter five years ago.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: D

17. **Among the five students A, B, C, D, E each scoring different marks in an examination, who scored the lowest marks?**
(I) D got lower marks than only C and E.
(II) B got higher marks than A

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: C

18. **Is A taller than B?**
(I) C is of the same height as that of A and B.
(II) B is not taller than C

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: A

19. **How many brothers does A have?**
(I) A's father has three children.
(II) A has two sisters.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: C

20. **How is P related to R ?**
(I) A is a brother of P.
(II) R is a brother of A.

A if the statement (I) alone is sufficient to answer the question, but (II) does not answer the question.

B if the statement (II) alone is sufficient to answer the question but (I) does not answer the question.

C if both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient.

D if both the statements (I) and (II) together are not sufficient to answer the question and additional data is required.

Answer: D

Instructions [21 - 30]

In the questions 21 -30, each contains two pairs of groups (of letters or letters and numbers). The pattern that appears in one pair should be followed by the other pair also. Observe the pattern carefully and fill in the blanks appropriately.

21. **MN : HS :: GT : _____**

A BY

B Cx

C DW

D EV

Answer: A

22. **BKEG : YPVT :: CFIL : _____**

A XVRN

B XUOR

C XRUO

D XURO

Answer: D

23. **KNIP : PINK :: _____ : _____**

A READ: DEAR

B FAIL : LIFE

C BARD : DRAB

D ALMS : SLAM

Answer: C

24. **ICET : OIKZ :: _____ : YQOV**

A SKJP

B SKIP

C SLIP

D TKIP

Answer: B

25. **PLAN : MIXK :: MAPLE : _____**

A HNOJX

B HYNIC

C JYNPC

D JXMIB

Answer: D

26. **CAR1 : AYP25 :: DEPS : _____**

A BCM3

B CDN3

C BCN3

D BCN2

Answer: C

27. **ACT : 54 :: DEO : _____**

A 54

B 52

C 5

D 50

Answer: A

28. **⑥ FJ : ▯PT :: _____ : ▯RV**

A ⑧HL

B ⑧IM

C ⑧JN

D ⑧KO

Answer: A

29. **LXM : 12X13 :: UXW : _____**

A 31X33

B 28X30

C 25X21

D 21X23

Answer: D

30. **R▯L : B⑥J :: R _____ T : S▯K**

A ▯

B ▯

C ▯

D ▯

Answer: D

Instructions [31 - 35]

Note : In questions numbered 31 to 35 pick the odd thing out.

31. **8, 15, 23, 35, 48, 63, 80**

A 23

B 15

C 80

D 63

Answer: A

32. **Mars, Saturn, Sun, Mercury, Venus, Neptune, Jupiter**

A Neptune

B Venus

C Mercury

D Sun

Answer: D

33. **Tiger, Lion, Elephant, Bear, Fox, Cheetah, Hyena, Leopard**

A Bear

B Elephant

C Hyena

D Fox

Answer: B

34. **19, 23, 27, 29, 43, 67, 73**

A 19

B 43

C 27

D 73

Answer: C

35. **RUN, WALK, SIT, FIT, JOG, STAND, JUMP**

A RUN

B FIIT

C SIT

D WALK

Answer: B

Instructions [36 - 45]

Note : Each of the questions from 36 to 45 follows a definite pattern, observe the same and fill in the blanks with suitable ones.

36. $50, 40, 33\frac{1}{3}, 28\frac{4}{7}$, _____, $22\frac{2}{9}, 20, 18\frac{2}{11}$

A 25

B $24\frac{1}{8}$

C $23\frac{1}{8}$

D $21\frac{1}{9}$

Answer: A

37. **3, 3, 6, 18, 72, _____, 2160, 15120**

A 296

B 432

C 350

D 360

Answer: D

38. **7, 7, 8, 16, 43, 107, 232, _____**

A 452

B 419

C 396

D 448

Answer: D

39. **8, 20, 40, 70, 112, _____, 240**

A 158

B 168

C 188

D 178

Answer: B

40. **3, S, 9, 15, _____, 33, 45, 59**

A 21

B 23

C 25

D 24

Answer: B

41. **1, 1, 2, 3, 5, 8, 13, 21, _____**

A 28

B 29

C 31

D 34

Answer: D

42. **5, 8, 13, _____, 29, 40, 53**

A 16

B 20

C 22

D 24

Answer: B

43. **1, 2, 2, 9, 3, 28, 4, _____, 5, 126**

A 68

B 65

C 63

D 60

Answer: B

44. **4096, 1024, 512, 384, _____, 480, 720**

A 460

B 420

C 394

D 384

Answer: D

45. **1, 4, 10, 22, 46, 94, _____**

A 120

B 140

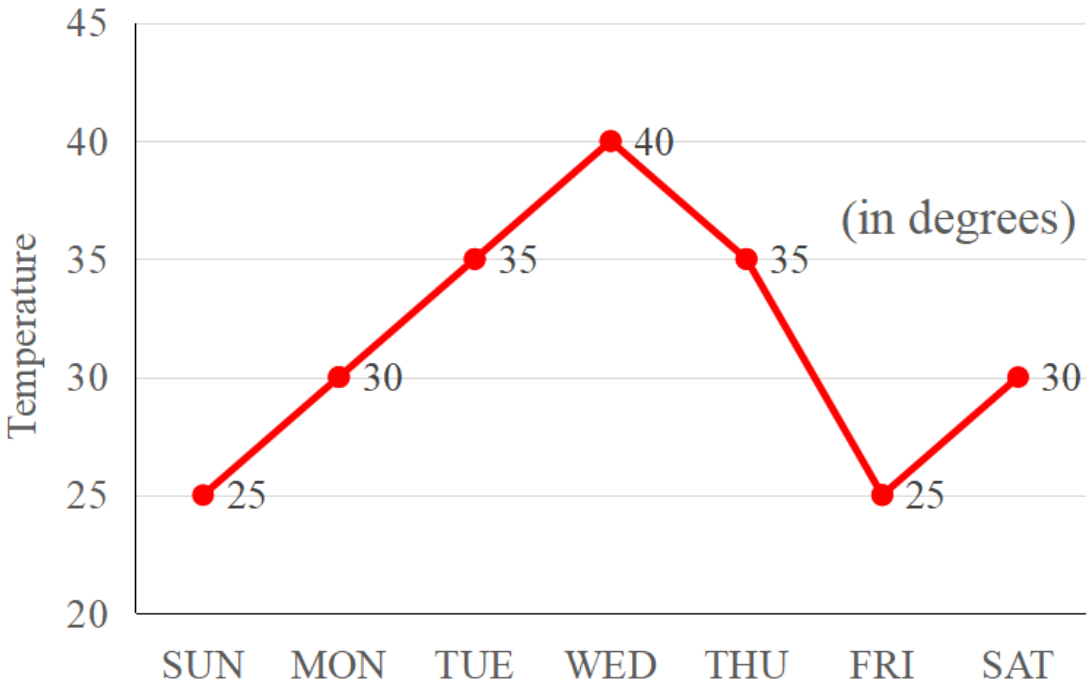
C 170

D 190

Answer: D

Instructions [46 - 48]

Temperatures on different days of a week in Hyderabad are given in the following graph. Based on this data answer the questions 46-48.



46. **The average temperature in that week is (in degrees)**

A $32\frac{1}{7}$

B 32

C $31\frac{3}{7}$

D $31\frac{1}{7}$

Answer: C

47. **The number of days in that week in which the temperature is nearer to the average temperature of the week its**

A 1

B 2

C 3

D 4

Answer: B

48. **On which day the temperature was maximum and by how much more than the average temperature of the week (in degrees)?**

A Wednesday, $8\frac{3}{7}$

B Tuesday, $3\frac{3}{7}$

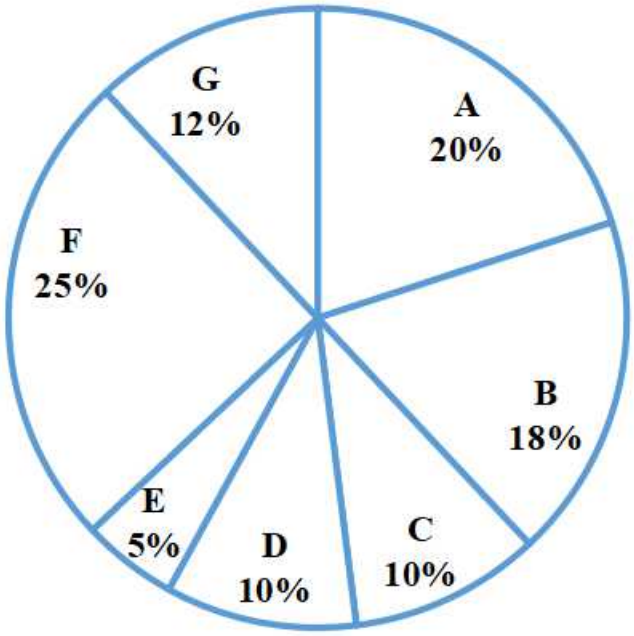
C Thursday, $8\frac{4}{7}$

D Wednesday, $3\frac{4}{7}$

Answer: D

Instructions [49 - 51]

The expenditure incurred by a company under seven major heads A, B, C, D, E, F and G in an year is depicted as percentages and shown in the following Pie chart. Based on the data answer the questions 49 to 51.



49. **If the total expenditure in the year is Rs.600 crores then the amount spent under the heads C, F and G put together (in crores of rupees) is**

A 470

B 360

C 282

D 180

Answer: C

50. **The ratio of the expenditures spent under the heads A and G together to that is spent under the rest of the heads together is**

A 17 : 9

B 8 : 17

C 12 : 27

D 34 : 19

Answer: B

51. **The sum of angles (in degrees) of the sectors which show the expenditure towards heads F and A is**

A 150

B 180

C 152

D 162

Answer: D

Instructions [52 - 55]

170 children went to an amusement park where they could take three different rides A, B and C. It was known that 40 of them took all the three rides and 110 of them took at least two of the three rides. Each ride costs ten rupees and the total receipts of the amusement park were Rs.2900 through these children. Based on this information, answer the questions from 52 to 55.

52. **How many children took exactly two rides each?**

A 80

B 75

C 70

D 68

Answer: C

53. **How many children took only one ride each?**

A 70

B 65

C 60

D 50

Answer: C

54. **What is the number of children who took at most two rides among the three rides?**

A 130

B 125

C 140

D 135

Answer: A

55. **The receipts of the amusement park through the children who took exactly one ride among the three rides is (in rupees)**

A 620

B 680

C 650

D 600

Answer: D

Instructions [56 - 60]

In a certain code, n^{th} letter in t he English alphabet is coded as $(n+4)(mod26)^{th}$ letter if n is even and (n - 4) $(mod26)^{th}$ letter if n is odd. The inverse process is used for decoding.
Using this information answer the questions from 56 to 60.

56. **Code for SEVEN is**

A OBZBR

B OASAR

C OAYAR

D OAZAR

Answer: D

57. **ICET is coded as**

A EXAY

B EYIX

C EYAX

D EYAP

Answer: C

58. **Which word is coded as GOVERN?**

A KSRINK

B KSRINJ

C KSRIMJ

D KSRJNI

Answer: B

59. **PAGES is coded as**

A TWCAO

B TWKAO

C TWCAP

D TWCBO

Answer: A

60. **Which word is coded as MANGO?**

A QEJOS

B QEJKT

C QEIKS

D QEJKS

Answer: D

61. **If LETTER is coded as MAVVAS, then QUESTION is coded as**

A ROATUEIP

B ROATUEJP

C ROATVEIP

D ROATVOIP

Answer: C

62. **If CODING is coded as GSHMRK then the code for EXAM IN is**

A IBEQMR

B IAEQMR

C IBERMR

D IBEPMR

Answer: A

63. **In a certain code FAMOUS is coded as PERSON and PERVIN is coded as CLIMAT. Then the code for SAFFRON is**

A NERRIST

B OIUUSTN

C OISSUTN

D INEPPIST

Answer: D

64. **If 15789 is coded as XTZAL and 2346 i1s coded as NPSU, then 8156894 is coded as**

A ACTUALS ACTUALS

B EXTRACT (2) EXTRACT

C ACTUARY (3) ACTUARY

D AXTUALS(4) AXTUALS

Answer: D

65. **If TSICET is coded as STCITE, then EXERCISE is coded as**

A XEREJCES

B XEREICSE

C XERECIES

D XEREICES

Answer: D

66. **If today is Sunday, what day was it 260 days ago?**

A Sunday

B Saturday

C Friday

D Thursday

Answer: B

67. **The smaller angle between the hours hand and minutes hand when the time is 3 : 48 pm is (in degrees)**

A 114

B 174

C 186

D 116

Answer: B

68. **The time between 5 pm and 6 pm on a day at which the two hands of the clock will be at an angle of $97\frac{1^\circ}{2}$ for the first time.**

A 5 hours $9\frac{6}{11}$ min

B 5 hours 35 min

C 5 hours $47\frac{3}{11}$ min

D 5 hours 45 min

Answer: A

69. **Define the Blood relationships in a family as follows.**
(i) A + B $\Rightarrow$ A is brother of B.
(iii) A - B $\Rightarrow$ A is mot her of B.
(iiii1) A $\times$ B $\Rightarrow$ A is sister of B.
What is the relationship between P and S in P + Q - S?

A P is the sister of mother of S.

B P is the brother of S.

C P is the sister of S.

D P is the brother of mother of S.

Answer: D

70. **Two busses arrived at a depot at 11 am and 2 pm with delayed timings of 18 minutes and 38 minutes respectively. What is the difference in their scheduled times of arrival on minutes)?**

A 150

B 155

C 160

D 162

Answer: C

71. **There are 3 doctors having clinics in the same building. Doctor A is available between 11 AM and 3 PM on Monday, Thursday, Friday and Sunday. Doctor B is available on Tuesday, Thursday and Sunday between 10AM and 2 PM while Doctor C is available on Monday, Wednesday and Thursday between 9 AM and 12 Noon and on Friday, Saturday and Sunday between 2 PM and 4 PM. On which day at which time all the 3 doctors are available?**

A Sunday 2PM to 4PM

B Thursday 11 AM to 12 Noon

C Tuesday 10 AM to 12 Noon

D No day

Answer: D

72. **Six friends A, B, C, D, E and F are sitting in a row on a bench. C is left most and E is right most. If A is between D and F and B is between F and E. Who is sitting immediate right to A?**

A F

B D

C B

D E

Answer: A

73. **For positive integers m, n define in $m \oplus n = 2m - n$ and $m * n = m + 3n$ then $(2 \oplus 3) * (4 \oplus 5)$ =**

A 12

B 9

C 11

D 10

Answer: D

74. **If $x * y = x + y + xy$ and $p\phi q = \frac{p+q}{p-q}$, then $(5\phi 3)(14\phi 12)$**

A 17

B 52

C 72

D 69

Answer: D

75. **If a $\otimes b = (a + b - 1)^2 - 1$, then $(1 \otimes 2) \otimes (3 \otimes 3)$ =**

A 675

B 625

C 575

D 525

Answer: A

Mathematical Ability

76. **If $p = \frac{a-b}{a+b}, q = \frac{b-c}{b+c}, r = \frac{c-a}{c+a}$, then $\frac{1+p}{1-p}, \frac{1+q}{1-q}, \frac{1+r}{1-r}$ =**

A 1

B 2

C 3

D 4

Answer: A

77. $\left[1-\left\{1-\left(1+\frac{5}{7}\right)^{-1}\right\}^{-1}\right]^{-1}$

A $\frac{5}{7}$

B $-\frac{5}{7}$

C $-\frac{7}{5}$

D $\frac{7}{5}$

Answer: B

78. **p : q = 2 : 3; q : r = 4: 5· r : s = 3 : 7 $\Rightarrow$ p : q : r : s =**

A 24 : 45 : 36 : 105

B 24 : 36 : 45 : 105

C 24 : 36 : 45 : 90

D 24 : 36 : 54 : 105

Answer: B

79. **Rs.14700 is divided among P,Q, and R such that P got half as much as Q and Q got half as much as R. Then the amount P got (in rupees) is**

A 2100

B 2800

C 3500

D 4200

Answer: A

80. $\sqrt[4]{17+12\sqrt{2}}$ =

A $1+\sqrt{3}$

B $1+\sqrt{2}$

C $2+\sqrt{2}$

D $2+\sqrt{3}$

Answer: B

81. **If $x = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$, then $x + \frac{1}{x}$ =**

A $5 + \sqrt{6}$

B 12

C 10

D $5 - \sqrt{6}$

Answer: C

82. **If 2^{α} divides 7680, then the largest value of α is**

A 11

B 10

C 8

D 9

Answer: D

83. **The remainder obtained when 4^{1000} is divided by 7 is**

A 4

B 2

C 1

D 0

Answer: A

84. **The GCD of two numbers is 23 and their sum is 184. The numbers are**

A 92, 92

B 63, 121

C 69, 115

D 64, 120

Answer: C

85. **What is the greatest possible length of a scale (in cm) that can be used to measure exactly three cloths of lengths 3m, 5.1 m and 12.9m?**

A 60

B 30

C 90

D 15

Answer: B

86. **The average of 5 consecutive even integers is 38. What is the product of first and the fifth numbers?**

A 1248

B 1284

C 1482

D 1428

Answer: D

87. $1+\frac{1}{1+\frac{1}{1+2}}$

A $\frac{5}{3}$

B $\frac{3}{5}$

C $\frac{2}{5}$

D $\frac{5}{2}$

Answer: B

88. **The gratest among** $\frac{1}{2}, \frac{2}{3}, \frac{3}{5}, \frac{3}{4}$ **is**

A $\frac{1}{2}$

B $\frac{2}{3}$

C $\frac{3}{4}$

D $\frac{3}{5}$

Answer: C

89. **The desending order of the numbers** $\frac{7}{8}, \frac{5}{6}, \frac{3}{4} and \frac{8}{9}$ **is**

A $\frac{8}{9}, \frac{7}{8}, \frac{3}{4}, \frac{5}{6}$

B $\frac{8}{9}, \frac{7}{8}, \frac{5}{6}, \frac{3}{4}$

C $\frac{7}{8}, \frac{8}{9}, \frac{5}{6}, \frac{3}{4}$

D $\frac{8}{9}, \frac{3}{4}, \frac{7}{8}, \frac{5}{6}$

Answer: B

90. **The gross income of a person is Rs.22 lakhs. A part of the income is exempted from the tax. The rest of the income is taxed at 30%. If his income after deduction of tax is 19 lakhs, what is the income (in lakhs) exempted from tax?**

A 10

B 11

C 12

D 15

Answer: C

91. **Three candidates A, B, C contested an election and got 4450, 12000 and 3550 votes respectively. What is the percentage of the total votes polled by B?**

A 38%

B 45%

C 50%

D 60%

Answer: D

92. **A man sold an article at a profit of 12%. Had he sold it Rs.180 more, 18% would have been gained. What is the cost price of the article (in rupees)?**

A 2800

B 3000

C 3200

D 3600

Answer: B

93. **The cost price of 10 articles is equal to the selling price of the same 12 articles. What is the outcome of this transaction?**

A $\frac{50}{6}\%$ loss

B $\frac{50}{3}\%$ profit

C $\frac{50}{3}\%$ loss

D $\frac{50}{6}\%$ profit

Answer: C

94. **In a business P, Q and R invested Rs.6000, Rs.8000 and Rs.12000 respectively. What is the share of Q in the total profit of Rs.10400 (in rupees)?**

A 3600

B 2400

C 1600

D 3200

Answer: D

95. **A, B and C started a business with investments in the ratio 1 : 3 : 5. After 4 months, B and C withdrew half of their investments. At the end of the year, if C's share of profit is Rs.6000, then B's share of profit (in Rs.) is**

A 3800

B 3600

C 3540

D 3460

Answer: B

96. **Two pipes P and Q can separately fill cistern in 6 hours and 8 hours respectively, while a third pipe R can empty it in 12 hours. If all the three pipes are opened together, then the time taken to fill the cistern is**

A 4 hrs. 36 min.

B 4 hrs. 48 min.

C 4 hrs. 12 min.

D 4 hrs. 40 min.

Answer: B

97. **An electric pump can fill a tank in 2 hours. Because of a leak in the bottom, it took 3 hours to fill the tank. In how much time the leak can drain all the water of the full tank?**

A 6 hours

B 5 hours

C 6 hours 30 mins

D 5 hours 30 mins

Answer: A

98. **A car covers a certain distance at 80 kmph and returns the same distance at 60 kmph. What is the average speed for the whole journey (in kmph)?**

A $70\frac{2}{7}$

B $66\frac{4}{7}$

C $64\frac{3}{7}$

D $68\frac{4}{7}$

Answer: D

99. **A man walks along the diagonal of a square field at the rate of 8 kmph for 36 minutes. What is area of the square field (in sq. kms) ?**

A 11.25

B 10.52

C 11.52

D 12.64

Answer: C

100. **P can do a piece of work in 24 days, Q in 30 days and R in 60 days. In how many days all the three together can do that work?**

A $11\frac{4}{11}$

B $10\frac{10}{11}$

C $9\frac{10}{11}$

D $10\frac{8}{11}$

Answer: B

101. **Persons A and B undertook to do a work for Rs.8000. A alone can do it in 6 days while B alone can do it in 8 days. With the help of C, if they finished that job in 3 days, then C's share in the remuneration is (in rupees)**

A 1000

B 1200

C 1400

D 800

Answer: A

102. **The area of trapezium (in sq. m) whose parallel sides are of lengths are 40m and 30m and having equal non parallel sides each of 13 meters length is**

A 640

B 560

C 420

D 380

Answer: C

103. **A path of width 3 meters is laid on all borders inside a rectangular garden, whose length and breadth are 40 meters and 20 meters respectively. The total are a of the path, in square meters, is**

A 284

B 248

C 324

D 264

Answer: C

104. **The volume of a cuboid is $36m^3$. If its length and breadth are 6rn and 3m respectively, then the total surface area of the cuboid is**

A 68

B 76

C 64

D 72

Answer: D

105. **The weight of a solid metallic sphere of radius 4 cm is 4 kg. The weight of a hallow sphere made with the same metal with outer diameter of 16cm and inner diameter of 12 cm is,**

A 20.5 kg

B 18.5 kg

C 16.5 kg

D 15.5 kg

Answer: B

106. **The height of a cylindrical pillar is 28 meters and its radius is 3 meters. The cost of painting around the pillar at Rs.8 per sq.meter (in rupees) is**

A 3244

B 4224

C 4284

D 4264

Answer: B

107. **If the area of an equilateral triangle i1s $9\sqrt{3}cm^2$, then its perimeter, in centimeters, is**

A 21

B 12

C 15

D 18

Answer: D

108. **If the diagonals of a rhombus are 20 cm and 15 cm, then its area, in sq. cm, is**

A 220

B 150

C 180

D 210

Answer: B

109. 49^{2022} **ends in the digit**

A 7

B 3

C 9

D 1

Answer: D

110. **If** $13x = 10(mod 28)$**, then** x **=**

A 10

B 13

C 18

D 28

Answer: C

111. **If A = {1, 2, 3, 4, 5, 6, 7, 8}, then the number of subsets of A containing 5, 6 and 7 is**

A 128

B 16

C 64

D 32

Answer: D

112. **For three sets A, B and C, if n(A) = 20, n(B - A) = 16 and n(C - (A $\cup$ B)) = 24, then n(A $\cup$ B $\cup$ C) =**
(n(A) denotes the number of elements in A)

A 56

B 64

C 60

D 48

Answer: C

113. $a+b=5 \Rightarrow a^3+b^3+15ab$=

A 625

B 125

C 150

D 225

Answer: B

114. **If $ax+b$ is added to the polynomial $4x^4+2x^3-2x^2+x-1$, then it is divisible by x^2+2x-3. The value of 2a + b =**

A 57

B 52

C 67

D 62

Answer: A

115. **If x^3+10x^2+ax+b is exactly divisible by $x+1$ as well as $x-1$, then (a, b) =**

A (1, -10)

B (- 1, - 10)

C (1, 10)

D (- 1,10)

Answer: B

116. **The remainders when the polynomial $f(x)$ is divided by $(x-2)$ and $(x-3)$ are 6 and 4 respectively. Then the remainder of $f(x)$ when divided by (x^2-5x+6) is**

A $-2x+10$

B $2x+10$

C $-2x+5$

D $2x+5$

Answer: A

117. **The sum of a two digit number and the number obtained by revising the order of its digits is 121 and the digits differ by 3. Then the number is**

A 64

B 46

C 74

D 72

Answer: C

118. **If $\frac{48}{x+y}-\frac{6}{x-y}=10$ and $\frac{15}{x+y}+\frac{4}{x-y}=9$, then $(x,y)=$**

A (1, 2)

B (-1, - 2)

C (2, 1)

D (- 2, -1)

Answer: C

119. $\sqrt{(x^2-2x-15)(x^2-5x-24)(x^2-13x+40)}=$

A $(x+3)(x-5)(x+8)$

B $(x-3)(x-5)(x-8)$

C $(x+3)(x-5)(x-8)$

D $(x+3)(x+5)(x-8)$

Answer: C

120. **The interior angles of a regular polygon are in Arithmetic Progression. The smallest angle of the polygon is 120° and the difference of consecutive angles is 5°. Then the number of sides of the polygon is**

A 8 or 14

B 9 or 12

C 8 or 15

D 9 or 16

Answer: D

121. **If the fifth term of a Geometric Progression is 7, then the product of its first 9 terms**

A 7^7

B 7^9

C 7^{18}

D 7^{21}

Answer: B

122. $Cot(\theta - 1170^\circ)$ **=**

A $\tan\theta$

B $-\tan\theta$

C $\cot\theta$

D $-\cot\theta$

Answer: B

123. **If** $0 < \theta < 270^\circ$ **and** $\sec\theta + \tan\theta = \frac{1}{5}$**, then** $\sin\theta$ **=**

A $\frac{11}{13}$

B $\frac{5}{13}$

C $\frac{12}{13}$

D $\frac{4}{13}$

Answer: C

124. $\frac{1}{\sin 10^\circ} - \frac{\sqrt{3}}{\cos 10^\circ}$

A 1

B 2

C 3

D 4

Answer: D

125. $\cos(x-y) = 3\cos(x+y) \Rightarrow \cot x.\cot y =$

A 2

B $\sqrt{2}$

C 3

D 1

Answer: A

126. **If the angle of elevation of the top of a tower of height 100 m from a point to its foot is $\tan^{-1}(\frac{4}{5})$, then the distance from the point to its foot, in meters, is**

A 140

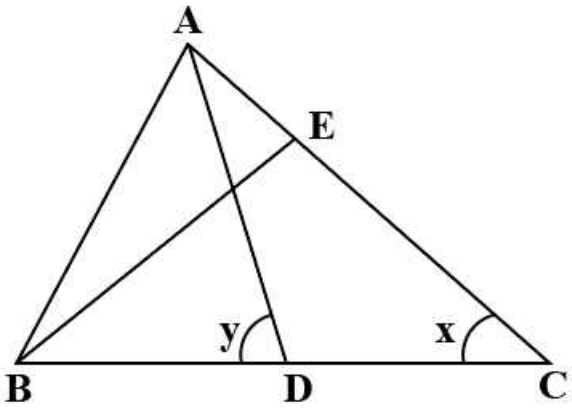
B 125

C 120

D 130

Answer: B

127. **In the given figure $\triangle ABC$, if $\angle BEC = 90°$, $\angle EBD = 4O°$ and $\angle DAC = 30°$, then $x + y =$**



A $110°$

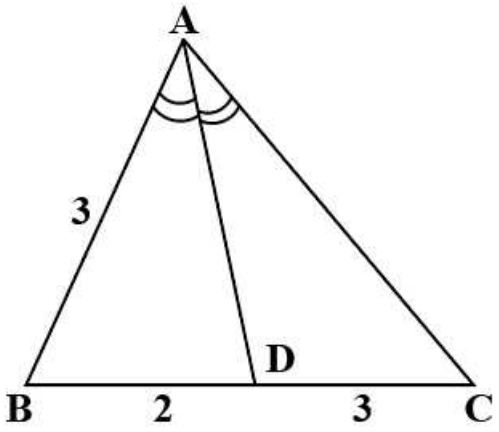
B $120°$

C $130°$

D $140°$

Answer: C

128. **In the given triangle, if AD is the bisector of $\angle$ BAC, then AC =**



A 3.5

B 4.5

C 5

D 5.5

Answer: B

129. **What is the area, in sq. units, of the parallelogram formed by**

$4x - 7y - 13 = 0, 8x - y - 39 = 0, 4x - 7y + 39 = 0$ **and** $8x - y + 13 = 0$**?**

A 52

B 48

C 46

D 58

Answer: A

130. **The Y -intercept made by the line parallel to** $2x - 5y = 5$ **passing through the point (5, 4) is**

A 1

B 2

C 3

D -2

Answer: B

131. **The area of the circle whose circumference is equal to perimeter of a square whose area is given by 121 sq.cm. (in sq.cm.) is**

A 154

B 148

C 169

D 189

Answer: A

132. **The number of common tangents that can be drawn to two circles touching externally is**

A 1

B 2

C 3

D 4

Answer: C

133. **The area of the triangle formed by the points (3, 2), (3, -6) and (5, 2) is (in sq. units)**

A 5

B 7

C 8

D 6

Answer: C

134. **If $\left(\frac{5}{3}, \frac{2}{3}\right)$ is the centroid of a triangle for which (3, 6) and (5, -2) are two vertices, then the third vertex is**

A (3, -2)

B (-3, -2)

C (-3, 2)

D (3, 2)

Answer: B

135. **The equation of the straight line passing through (3, 4) and having slope of 4 is**

A $4x + y = 8$

B $X + 4y = 0$

C $4x - y - 8 = 0$

D $x - 4y = 0$

Answer: C

136. **Equation of the straight line passing through (0, 0) and (3, 2)**

A $2x + 3y = 0$

B $3x + 2y = 0$

C $3x - 2y = 0$

D $2x - 3y = 0$

Answer: D

137. **If the lines $5x - 2ky + 7 = 0$ and $2kx - 5y + 3 = 0$ are parallel, then the equation of the line passing through (0, 0) and having the slope k, k>0 is**

A $2x - 5 = 0$

B $Sx - 2y = 0$

C $6x - 5y = 0$

D $3x + 2y = 0$

Answer: B

138. **The equation of the straight line whose slope is 3 and cuts an intercept of 5 units on the Y-axis is**

A $y = 5x + 3$

B $5y = x + 3$

C $y = 3x + 5$

D $3y = x + 5$

Answer: C

139. **The distance between (1 , 2) and t he mid point of the line segment joining (2, 3) and (3, 4) is , in units**

A $\frac{3}{2}$

B $\frac{\sqrt{3}}{2}$

C $\frac{3}{\sqrt{2}}$

D $\sqrt{\frac{3}{2}}$

Answer: C

140. **If the line $\frac{x}{a} + \frac{y}{b} = 1$ passes through the points (2, -3) and (4, -5) then (a, b) =**

A (1, 1)

B (-1, 1)

C (1, - 1)

D (-1, -1)

Answer: D

141. **The arithmetic mean of 68, 76, 64, 56, 48, 38, 44, 42 is**

A 62.5

B 54.5

C 56

D 58

Answer: B

142. **The arithmetic mean of the following frequency distribution is**

x	20	23	25	28	30
Frequency	3	5	10	6	1

A 25.62

B 23

C 26

D 24.92

Answer: D

143. **The arithmetic mean of 13 quantities is 60. If the mean of the first 7 quantities 59 and that of the last 7 is 61, the seventh quantity is**

A 62

B 61

C 60

D 59

Answer: C

144. **The median of data containing 11 observations is 15 . If 8 more observations 32, 33, 6, 9, 8, 2, 19, 17 are added to the data then the median of the new data containing 19 observations is**

A 16

B 17

C 15

D 13

Answer: C

145. **The Median of 10, 11, 20, 1.5, 19, 20, 14, 16 is**

A 15

B 16

C 16.S

D 15.S

Answer: D

146. **The mode of 16, 22, 24, 18, 16, 19, 15 is**

A 18

B 16

C 15

D 19

Answer: B

147. **The mode of the following frequency distributions nearly**

Family size	1 - 3	3 - 5	5 - 7	7 - 9	9 - 11
Number of families	9	10	4	4	3

A 3.056

B 3.286

C 3.486

D 3.586

Answer: B

148. **A coin is tossed n times. If the probability that head occurs a times is equal to the probability that tail occurs b times, then n is**

A a - b

B a + b

C b - a

D 2(a + b)

Answer: B

149. **Two dice are thrown. The probability of getting the sum 9 is**

A $\frac{1}{4}$

B $\frac{1}{2}$

C $\frac{1}{9}$

D $\frac{1}{8}$

Answer: C

150. **If seven persons are to be seated in a row, then the probability that two particular persons sit next to each other is**

A $\frac{1}{3}$

B $\frac{1}{6}$

C $\frac{2}{7}$

D $\frac{1}{2}$

Answer: C

Communication Ability

Instructions [151 - 155]

Meanings (Sentences with dashes)

151. **One who knows many languages is kn own as a/an _____**

A bibliophile

B polygamist

C polyglot

D absurdist

Answer: C

152. **The artist refused to compromise even on minor details. He was therefore described as being _____.**

A vivacious

B irritable

C tedious

D fastidious

Answer: D

153. **The court said that at it cannot be _____ of the plight of migrant workers.**

A oblivious

B marginalised

C forced

D sympathetic

Answer: A

154. **Everyone was angry _____ him for his misdeeds.**

A upon

B on

C over

D with

Answer: D

155. **He has to choose between two unfavourable alternatives. He is facing a _____.**

A farce

B disaster

C dilemma

D punishment

Answer: C

Instructions [156 - 160]

Synonyms and Antonyms

156. **Antonym of 'Noble'**

A unnoble

B ignoble

C ennoble

D disnoble

Answer: B

157. **The antonym of 'tedious'**

A pl easant

B bored

C tiresome

D hideous

Answer: A

158. **The synonym of 'proscribe'**

A prescribe

B ascribe

C banish

D describe

Answer: C

159. **The antonym of 'affluence'**

A confluence

B poverty

C influence

D wealth

Answer: B

160. **Antonym of 'extravagant'**

A expensive

B convergent

C abundant

D frugal

Answer: D

Instructions [161 - 165]

Verb (Tense and Voice)

161. **Passive voice of 'Advertise the vacancy.'**

A Vacancy is advertised.

B Vacancy has been advertised.

C They advertised the vacancy.,

D Let the vacancy be advertised.

Answer: D

162. **Active voice of "By whom was the poem composed ?"**

A By whom composed the poem?

B The poe,m was composed by whom?

C Who composed the poem?

D The poem composed by whom?

Answer: C

163. **Passive voice of 'Mother baked the cake.'**

A The cake was baked by mother.

B The cake has been baked by mother.

C Mother had baked the cake.

D Cake had been baked by mother.

Answer: A

164. **If it rains, I _____ not come.**

A did

B have

C had

D may

Answer: D

165. **Insert present prefect tense of 'win'**

We _____ the match.

A were winning

B have won

C had won

D won

Answer: B

Instructions [166 - 170]

Phrasal Verbs & Idioms

166. **'To break ground' means 'to _____'.**

A stop

B obstruct

C commence

D intercept

Answer: C

167. **'To put to the sword' means 'to _____'.**

A stay

B sleep

C stir

D slay

Answer: D

168. **To keep up one's spirits is not easy. Here 'keep up' means**

A restrain

B reta in

C strain

D pertain

Answer: B

169. **Please _____ and see me sometime.**

A come round

B come by

C come up

D come off

Answer: A

170. **The army was outrun by the enemy's fire power. Here 'outrun' means**

A defeated

B confused

C amazed

D pleased

Answer: A

Instructions [171 - 175]

Articles & Prepositions

171. **He is not _____ friend of mine.**

A the

B a

C by

D on

Answer: B

172. **He is inferior _____ none.**

A of

B into

C to

D on

Answer: C

173. **ii filled the cup _____ sugar.**

A up

B an

C with

D of

Answer: C

174. **He left ___ Chennai to attend a wedding.**

A over

B up to

C to

D for

Answer: D

175. **He went _____ a tour.**

A up on

B over

C up

D on

Answer: D

Instructions [176 - 180]

Computer Terminology

176. **A Megabyte is a unit equal to**

A 10,00,009 bytes

B 9,00,005 bytes

C 10,48,576 bytes

D 11,48,576 bytes

Answer: C

177. **A device used to display information visually is known as _____.**

A modem

B monitor

C database

D folder

Answer: B

178. **Ethernet connects**

A electric lines

B caliculators

C computers

D turbines

Answer: C

179. **A term applied to an e-mail message when it is returned as undeliverable is known as _____.**

A bridge

B buffer

C bounce

D byte

Answer: C

180. **A saved link is also called a**

A bookm ark

B byte

C browser

D gateway

Answer: A

Instructions [181 - 185]

Business Terminology

181. **Where did TQM originate?**

A Germany

B India

C USA

D Japan

Answer: D

182. **Grapevine is a term used in relation to**

A Formal communication.

B Informal communication.

C Complaint procedure.

D Confidential meetings.

Answer: B

183. **The Stock Exchange that introduced "The Screen-based Trading System" for the first time is**

A Bombay Stok Exchange

B New York Stock Exchange

C NASDAQ

D National Stock Exchange

Answer: D

184. **A written message typically used in a professional setting is known as _____.**

A orders

B oral communication

C memorial

D memorandum

Answer: D

185. **GAAP stands for Generally Accepted _____ Principles.**

A accounting

B advisory

C accountable

D administrative

Answer: A

Instructions [186 - 190]

Read the Passage and answer the questions

All comedy probably arises from our enjoyment of other people's mistakes. If we did not make mistakes, there would be nothing in the world to laugh at. Hence, if we regard laughter as a blessing, we should pay a tribute to error. In the history of t he world the man who makes mistakes has never been sufficiently appreciated. For all the mirth he has given us we have repaid him with the basest ingratitude. Of this ingratitude you will find evidence if you turn to punch and look carefully at its admirable weekly collection of the errors of journalists and printers. Not long ago, it was Punch's custom to give the name of the paper from which the misprint or mis-statement was taken. You would imagine t hat any journalist or printer would have felt honoured as one who added to the gaiety of the most heavily taxed of nations. But it was otherwise, protests poured into the punch office. In a world that rightly appraised error, the newspapers would protest against this an attempt to rob them of the credit of having increased human happiness.

186. **The origin of comedy is**

A sorrow at other people's faults

B seconding other people's faults

C enjoyment of other people's faults

D in inspiring other people's fau lts

Answer: C

187. **According to the, author, mistakes deserve, to be**

A condemned

B applauded

C punished

D forgiven

Answer: B

188. **The author feels sorry that we have repaid erring men with**

A gratitude

B felicitations

C ingratitude

D gold

Answer: C

189. **The misprints in 'Punch' were greeted with**

A appreciation

B protests

C enthusiasm

D cheers

Answer: B

190. **Laughter is a _____ to humanity**

A curse

B hindrance

C blessing

D punishment

Answer: C

Instructions [191 - 195]

Read the Passage and answer the questions

We are now face to face with class conflicts. There has grown up an intense class consciousness with elements of suspicion and hatred, envy and jealousy. Democracy is so interpreted as to justify not only the very legitimate aspiration to bring a more equitable distribution of wealth, but also the increasing tendency for a levelling down of all talent. This is not possible. There win always be man of ability who lead and direct, and others who win obey and follow. It is not true that all men are born equal in every way, and everyone is equally fit to govern the country or till the ground. Every line of development is specific and exclusive. If we wish to pursue one we shall have to turn our attention away from others. While we should remove the oppressive restrictions, dispel the ignorance of the

masses, increase their self-respect, we should not be under the illusion that we can abolish the distinctions of the genius and the fool, the able organized and the submissive worker. Modern democracies tend to make us all mere 'human beings',but such beings exist nowhere.

191. **What is class-consciousness mixed up with?**

A suspicion and envy

B humour and satire

C tragedy and horror

D comedy and benevolence

Answer: A

192. **Levelling talent is**

A democratic

B undemocratic

C legitimate

D lawful

Answer: B

193. **Are all men born equal?**

A Yes.

B No.

C Definitely.

D Undoubtedly.

Answer: B

194. **Every profession is**

A unique

B general

C inclusive

D routine

Answer: A

195. **Modern democracies conceive us as**

A mere human beings

B geniuses

C fools

D monarchs

Answer: A

Instructions [196 - 200]

Read the Passage and answer the questions

The other day, a motoristic friend of mine was complaining to me bitterly even violently, about the behaviour of pedestrians. They were abominably careless and stupid, he insisted. I hate to see anyone agitated by a grievance, and I tried to soothe my friend by an appeal to reason. I said, 'No doubt we pedestrians are very trying. But you must remember that, after all, we were on the roads for many, many centuries before you came along in your splendid car. And remember, it isn't we that are threatening to kill you. It is you that are threatening to kill us, and, if the worst comes to the worst, lay some flowers on our graves.

We are constantly told by the press that we must be 'traffic-conscious'. But there is really no need to tell us we must be so. How could we be otherwise? How not be concussion-apprehensive, annihilation-evasive, and similar compound words? Very old people and very young people form the majority of those who are annually slaughtered upon our roads.

196. **The, passage deals with the conflicting views of the**

A motorists and the automobile industry

B motorists and their friends

C pedestrians and their spouses

D motorists and the pedestrians

Answer: D

197. **The author dislikes to be disturbed by**

A desires

B authorities

C grievance

D enemies

Answer: C

198. **In saying, 'if the worst comes to the worst, lay some flowers on our graves', the author is highly**

A melancholic

B ironical

C jubilant

D lyrical

Answer: B

199. **Traffic-consciousness is**

A inborn

B superimposed

C instigated

D learnt

Answer: A

200. **The motorist felt that pedestrians were basically**

A meticulous

B conscious

C disciplined

D apathetic

Answer: D