AP ICET – 2025

Sample Paper and Other Useful Resources

Contents

A NOTE TO THE STUDENT

Dear Aspirant,

Are you gearing up for success in the highly competitive AP ICET examination and are looking for a comprehensive sample paper to test your skills and assess yourselves? Your search ends right here. We at Careers360 have compiled a well-drafted sample paper for the 2025 AP ICET examination. This question set is designed with respect to the question types and format set by the Andhra Pradesh State Council of Higher Education. This sample paper is your authentic tool for enhancing your AP ICET exam preparation.

This sample paper includes questions from all the topics asked in the AP ICET examination such as data sufficiency, problem-solving, English language, Business and Computer terminologies, Quantitative aptitude and Mathematics. The question paper is crafted after careful analysis of past year AP ICET papers ensuring that students can receive a conceptual understanding of the syllabus and examination format before the actual test.

We hope that you find this resource helpful in your preparation. Do go through the other useful resources mentioned at the end of the document to enhance your management examination preparations.

Best Wishes
Team Careers360

ABOUT THE EBOOK

Through the contents of this ebook, the candidates can find the following information which is beneficial for their overall preparation.

1. 75 Questions on Analytical Ability (20 Questions from Data Sufficiency and 55 from Problem-Solving). All the questions are designed as per the standards set by AP ICET examinations.

2. 70 Questions from Communication Ability (55 questions from English Language and 15 questions from Computer and Business Terminology.)

3. 55 questions from Mathematical Ability

4. Answer Key for the first evaluation

5. Complete and detailed solutions to each question. The solutions are designed to help the candidates understand the concepts in detail and work on the areas that they require help with.

6. Other useful resources that can help the candidates in improving their overall preparations and for extra reference.

SECTION-A:
ANALYTICS ABILITY

1. DIRECTIONS: The question below is followed by two statements marked I and II. Mark as your answer.

The area of a square is equal to that of a circle. What is the circumference of the circle?

I. The diagonal of the square is X inches.

II. The side of the square is Y inches.

    A. If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

    B. If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

    C. If the data either in statement I alone or in statement II alone are sufficient to answer the question.

    D. If the data even in both statements I and II together are not sufficient to answer the question.

2. DIRECTIONS: The question below is followed by two statements marked I and II. Mark as your answer.

What is the height of a right-angled triangle?

I. The area of the right-angled triangle is equal to the area of a rectangle whose breadth is 15 m.

II. The length of the rectangle is 12 m.

    A. If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

    B. If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

    C. If the data either in statement I alone or in statement II alone are sufficient to answer the question.

    D. If the data even in both statements I and II together are not sufficient to answer the question.

3. DIRECTIONS: The question below is followed by two statements marked I and II. Mark as your answer.

What is the difference between the shares of profits of Rekha and Nutan out of a profit of Rs. 6,000 at the end of the year?

I. Rekha invested Rs. 50, 000 and withdrew Rs. 1000 after 4 months.

II. For the last 8 months, Nutan's capital was 125% of Rekha's.

A. If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
B. If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
C. If the data either in statement I alone or in statement II alone are sufficient to answer the question.
D. If the data even in both statements I and II together are not sufficient to answer the question.

4. DIRECTIONS: The question below is followed by two statements marked I and II. Mark your answer.

What is the average daily wage of a worker who works for five days; he made Rs. 80 on the first, day.

I. The worker made a total of Rs. 400 for the first four days of work.

II. The worker made 20% more each day than he did on the previous day.

A. If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
B. If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
C. If the data either in statement I alone or in statement II alone are sufficient to answer the question.
D. If the data even in both statements I and II together are not sufficient to answer the question.

5. DIRECTIONS: The question below is followed by two statements marked I and II. Mark as your answer.

What is the cost of laying the carpet in a rectangular hall?

I. The cost of the carpet is Rs. 450 per square metre.

II. The perimeter of the hall is 50 meters.

A. If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
B. If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
C. If the data either in statement I alone or in statement II alone are sufficient to answer the question.
D. If the data even in both statements I and II together are not sufficient to answer the question.

6. DIRECTION: The following question is followed by two statements, For answering the question, you have to decide whether any information provided in the statements is redundant or can be dispensed with while answering the given question,

Q. What is the circum-radius of a right-angled triangle?

I. The length of the hypotenuse of the right-angled triangle is 13 cm.
II. The perimeter of the right-angled triangle is 100 cm.

    A. if one of the statements is redundant.
    B. If both the statements are redundant.
    C. If one of the statements is redundant.
    D. If even by using both statements the answer can not be found.

7. DIRECTION: In the following questions, a question is followed by two statements.
Q. What is the 4th term of a geometric progression?
I. the 3rd term of the geometric progression is 8,
II. The 7th term of the geometric progression is 128.

    A. If only one of the two statements is sufficient to answer the question.
    B. If either of.the two statements is sufficient to answer the question.
    C. If both the statements are required to answer the question.
    D. If the question cannot be answered even with the help of both the statement.

8. DIRECTION: In the following questions, a question is followed by two statements.
Q. Three people A,B and C are standing along the border of a rectangular field X metres long and Y metres broad $(X, Y \in N)$, What is the perimeter of the field?
I. The area of the field is 45 m2,
II. The shortest distance between A and B is equal to the shortest distance between B and C and also equals to the shortest distance between C and A, along the border.

    A. If only one of the two statements is sufficient to answer the question.
    B. If either of.the two statements are sufficient to answer the question.
    C. If both the statements are required to answer the question.
    D. If the question cannot be answered even with the help of both the statement.

9. DIRECTION: In the following questions, a question is followed by two statements.
Q. Three men A, B and C invest Rs.4,700 for a business. A invests Rs. 700 more than B and B invests Rs.500 more than C. C invests for 14 months. How much profit will A receive?
I. Total profit at the end of the year is Rs. 840,II. A,B subscribe their money in a business for 8 and 9 months respectively,

    A. If only one of the two statements is sufficient to answer the question.
    B. If either of . the two statements are sufficient to answer the question.
    C. If both the statements are required to answer the question.
    D. If the question cannot be answered even with the help of both the statement.

10. DIRECTION: In the following questions, a question is followed by two statements.
Q. In What ratio should pure and adulterated fruit juices be sold so as to make a profit of 10% by selling the mixture at Rs.14/litre?

I. Pure juice is sold at Rs. 18 per litre to get a profit of 20%.
II. Adulterated juice is sold at Rs.15 per litre to get a profit of 25%.

    A. If only one of the two statements is sufficient to answer the question.
    B. If either of . the two statements are sufficient to answer the question.
    C. If both the statements are required to answer the question.
    D. If the question cannot be answered even with the help of both the statement.

11. DIRECTION: Answer the following questions based on the given information. Each question consists of two quantities, one in column A and in column B. Compare the quantities given in two columns.
Q.

Column- A	Column- B
The cost price of an article whose selling price is Rs.250 and profit percentage is 20%	The cost price of an article whose selling price is Rs.300 but profit percentage is 40%

    A. if the quantity in column B is greater than quantity in column A.
    B. if the quantity in Column A is greater than quantity in Column B.
    C. If the two quantities are equal in column A and Column B
    D. if the relationship cannot be determined from the given information

12. DIRECTION: Answer the following questions based on the given information.
Each question consists of two quantities, one in column A and in column B. Compare the quantities given in two columns.
Q.

Column-A	Column-B
81^3-18^3-63^3	100^3-60^3-40^3

    A. if the quantity in column B is greater than quantity in column A.
    B. if the quantity in Column A is greater than quantity in Column B.
    C. If the two quantites are equal in column A and Column B
    D. if the relationship cannot be determined from the given information

13. DIRECTION: Answer the following questions based on the given information.
Each question consists of two quantities, one in column A and in column B. Compare the quantities given in two columns.

Q.

Column-A	Column-B
The Average speed of a person if speed for first half is 30km/hr and for the second half it is 45 km/hr.	Average speed of a person if for the first 100km he takes 3 hours and for the remaining 50km be takes 1 hr

A. if the quantity in column B is greater than quantity in column A.
B. if the quantity in Column A is greater than the quantity in Column B.
C. If the two quantities are equal in column A and Column B
D. if the relationship cannot be determined from the given information

14. DIRECTION: Answer the following questions based on the given information.
Each question consists of two quantities, one in column A and in column B. Compare the quantities given in two columns.
Q.

Column -A	Column-B
External angle of an equilateral triangle	Internal angle of regular hexagon

A. if the quantity in column B is greater than the quantity in column A.
B. if the quantity in Column A is greater than quantity in Column B.
C. If the two quantities are equal in column A and Column B
D. if the relationship cannot be determined from the given information

15. DIRECTION: Answer the following questions based on the given information. Each question consist of two quantities, one in column A and in column B. compare the quantities given in two columns.
Q.

Column- A	Column- B
The cost price of an article whose selling price is Rs.250 and profit percentage is 20%	The cost price of an article whose selling price is Rs.300 but profit percentage is 40%

A. if the quantity in column B is greater than quantity in column A.
B. if the quantity in Column A is greater than quantity in Column B.
C. If the two quantites are equal in column A and Column B
D. if the relationship cannot be determined from the given information

16. DIRECTION : The question consist of two quantities, one in Column A and the other in Column B. Mark answer
as

Column A	Column B
Cube root of three	Fourth root of Four

    A. if the quantity in Column A is greater than the quantity in Column B.
    B. if the quantity in Column B is greater than the quantity in Column A
    C. if the quantities are equal.
    D. if the comparison cannot be made

17. DIRECTION : The question consist of two quantities, one in Column A and the other in Column B. Mark answer
as

Column A	Column B
1/3 of 8	$66\dfrac{2}{3}\%$ of 4

    A. if the quantity in Column A is greater than the quantity in Column B.
    B. if the quantity in Column B is greater than the quantity in Column A
    C. if the quantities are equal.
    D. if the comparison cannot be made

18. DIRECTION : The question consist of two quantities, one in Column A and the other in Column B. Mark answer
as

Column A	Column B
Time elapsed from 2:55 P.M. to 3:15 P.M on the same afternoon	1/3 hour

    A. if the quantity in Column A is greater than the quantity in Column B.
    B. if the quantity in Column B is greater than the quantity in Column A
    C. if the quantities are equal.
    D. if the comparison cannot be made

19. DIRECTION : The question consist of two quantities, one in Column A and the other in Column B. Mark answer

as

Column A	Column B
The number of posts needed for a 12 posts fence	144 feet long and posts are placed 12 feet apart

    A. if the quantity in Column A is greater than the quantity in Column B.
    B. if the quantity in Column B is greater than the quantity in Column A
    C. if the quantities are equal.
    D. if the comparison cannot be made

20. DIRECTION: The question consist of two quantities, one in Column A and the other in Column B. Mark answer
as

Column A	Column B
Half of 60 % of 30	1/5th of 50% of 60

    A. if the quantity in Column A is greater than the quantity in Column B.
    B. if the quantity in Column B is greater than the quantity in Column A
    C. if the quantities are equal.
    D. if the comparison cannot be made

21. DIRECTIONS: A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
RTM, VZX, ZFI, DLT, ?

    A. HRE
    B. RST
    C. TMO
    D. HRS

22. DIRECTIONS: Which letter cluster will replace the question mark (?) to complete the given series?
NAME, NEME, ?, NOME, NUME

    A. NMME
    B. NKME
    C. NIME
    D. NJME

23. DIRECTIONS: Select the number from among the given options that can replace the question mark (?) in the following series.

5, 10, 17, 26, 37, 50, ?

A. 58
B. 65
C. 76
D. 54

24. DIRECTIONS: A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
ABCD, HGLO, OLUZ, VQDK, ?

A. RTQV
B. CYQR
C. CMVQ
D. CVMV

25. DIRECTIONS: Which of the following numbers will replace the question mark (?) in the given series?
2, 4, 10, 28, ?, 244

A. 94
B. 90
C. 88
D. 88

26. DIRECTIONS: Which letter cluster will replace the question mark (?) to complete the given series?
abCD, fgHI, ?, stUV, abCD

A. kIMO
B. lmNO
C. mnOP
D. lnMO

27. DIRECTIONS: Which of the following terms will replace the question mark (?) in the given series?
FOX, ?, JSX, LUX, NWX

A. HQS
B. HQX
C. HXQ
D. HEX

28. DIRECTIONS: Which letter cluster will replace the question mark (?) to complete the given series?
ABCD, BDFD, CFID, ?, EJOD

    A. DHED
    B. DHDD
    C. DLHD
    D. DLHD

29. DIRECTIONS: Which of the following numbers will replace the question mark (?) in the given series?
1331, 2197, ?, 6859

    A. 4913
    B. 5832
    C. 4096
    D. 3375

30. DIRECTIONS: Which of the following numbers will replace the question mark (?) in the given series?
4, 6, 12, 14, 28, 30, ?

    A. 62
    B. 60
    C. 54
    D. 52

31. DIRECTIONS: A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
NMRQ, NDZG, NUHW, NLPM, ?

    A. NQRC
    B. NCXC
    C. NHMH
    D. MQRQ

32. DIRECTIONS: A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
DMT, JOB, PQJ, VSR, ?

    A. BZY
    B. ZYM
    C. BUZ
    D. BZM

33. DIRECTIONS: Which of the following letter clusters will replace the question mark (?) and complete the following letter cluster series?
DW, FU, GT, IR, JQ, ?

    A. LN
    B. LO
    C. MO
    D. LP

34. DIRECTIONS: In the following question, select the missing number from the given series.
345, 356, 368, 381, 395, ?

    A. 409
    B. 408
    C. 406
    D. 410

35. DIRECTIONS: A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
NMQR, NQYD, NUGP, NYOB, ?

    A. NQRC
    B. NMWN
    C. NCWN
    D. NWRQ

36. DIRECTIONS: In the following question, select the missing number from the given series.
111, 222, 444, ?, 1776, 3552

    A. 999
    B. 888
    C. 1780
    D. 1770

37. DIRECTIONS: Which of the following letter clusters will replace the question mark (?) in the given series?
PK, GT, XC, OL, ?

    A. GT
    B. HS
    C. EV
    D. FU

38. Directions: Which of the following numbers will replace the question mark (?) in the given series?

382, 322, 272, 232, 202, ?

A. 168
B. 150
C. 182
D. 132

39. Directions: Which of the following numbers will replace the question mark (?) in the given series?

31, ?, 40, 49, 61, 76

A. 36
B. 34
C. 35
D. 37

40. Directions: A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

ABCD, CTFZ, ELIV, GDLR, ?

A. ITOQ
B. QMQR
C. IMOQ
D. IVON

41. Directions: In a certain code language, FUEL is coded as 50, and JEER is coded as 44. How will FARE be coded in that language?

A. 38
B. 34
C. 40
D. 36

42. Directions: In a certain code language, 'BYE' is coded as '245' and 'OLA' is coded as '265'. How will 'CAR' be coded in that language?

A. 280
B. 285
C. 295
D. 300

43. Directions: In a certain code language, ADVANCE is written as VDAAECN and BABYSIT is written as BABYTIS. How will AFFABLE be written in that language?

A. FFAALEB
B. FFAAELB
C. FFAAEBL
D. AAFFELB

44. Directions: In a certain code language, 'NUMERICAL' is written as 'ICALRNUME' and 'SCATTERED' is written as 'EREDTSCAT'. How will 'EXPLOSION' be written in that language?

A. SIONOXEPL
B. SIONOEXPL
C. SIONOXELP
D. SIONOEXLP

45. Directions: In a certain code language, HYPOCRISY is written as YPHOCIRYS, and IMPORTANT is written as MPIORATTN. How will INTEGRITY be written in that language?

A. NTIEGIRYT
B. NTIEGRIYT
C. NTIGEIRYT
D. NITEGIRYT

46. Directions: In a certain code language, CRUST is written as 201921183 and BLAME is written as 5131122. How will PLASTIC be written in that language?

A. 18204165138
B. 73110209325
C. 71642578102
D. 39201911216

47. Directions: In a certain code language, 'PSYCHIC' is written as 'YSPCCIH' and 'CITIZEN' is written as 'TICINEZ'. How will 'MAHATMA' be written in that language?

A. HAMAATM
B. AHMAAMT
C. HAMAAMT
D. HAMAMAT

48. Directions: In a certain code language, BEHOLD is written as BDEHLO, and INDEED is written as DDEEIN. How will COURSE be written in that language?

A. CEROSU
B. CEROSU
C. CEOSUR
D. CEORSU

49. Directions: There are five girls R, S, T, P, and Q sitting in a row facing north. T is sitting exactly in the middle of the row. Q is sitting to the immediate right and immediate left of P and T, respectively. S is not sitting at the extreme end. Who is sitting third to the left of R?

A. P
B. Q
C. S
D. T

50. Directions: P, Q, R and S are playing a game of carrom. P, R and S, Q are partners. S is to the right of R. If R is facing West, then Q is facing which direction?

A. North
B. South
C. East
D. West

51. Directions: The weights of 4 boxes are 90, 30, 20, and 50 kilograms. Which of the following cannot be the total weight, in kilograms, of any combination of these boxes, and in combination a box can be used only once?

A. 190
B. 170
C. 100
D. 150

52. Direction: Select the option that is related to the third word in the same way as the second word is related to the first word. (The words should be treated as meaningful Hindi words and should not be associated with each other on the basis of number of letters/number of consonants/number of vowels in the word.)
Fountain Pen : Waterman :: Telescope : ?

A. Galileo
B. Macmillan
C. Robert Hooke
D. Newton

53. Directions: Select the option which is related to the third word in the same way as the second word is related to the first word.

(The words should be treated as meaningful English/Hindi words and related to each other on the basis of number of letters/number of consonants/number of vowels in the word)

Panda : Bamboo : Koala :?

- A. Bark
- B. Grass
- C. Eucalyptus
- D. Fish

54. Directions: Select the word pair that represents exactly the same relation that is expressed in the given word pair.

(Words should be treated as meaningful words and should not be related to each other on the basis of the number of letters/number of consonants/number of vowels in the word.)

Acquired : Received

- A. Bitter : Sweet
- B. Collected : Distributed
- C. Arrival : Departure
- D. Short : Small

55. Directions: Clear is related to Open in the same way as Confidential is related to ___.

- A. Clean
- B. Free
- C. Direct
- D. Secret

56. Directions: Select the word-pair which represents exactly the relation which is expressed in the given word-pair.

(The words should be treated as meaningful words and should not be related based on the number of letters/consonants vowels in the word)

- A. Hansini: Swan
- B. Adult : Infant
- C. Witch : Wizard
- D. Banyan : Tree
- E. Pig : Piglet

57. Directions: Select the odd group of numbers. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g.13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

A. (15 – 220 – 215)
B. (10 – 100 – 95)
C. (20 – 400 – 395)
D. (25 – 625 – 620)

58. Directions: Three of the following four-letter clusters are alike in a certain way and one is different. Pick the odd one out.

A. FDB
B. ZXV
C. JIG
D. LJH

59. Directions: The weights of the four boxes are 90, 30, 40, and 60 kilograms. Which of the following cannot be the total weight, in kilograms, of any combination of these boxes, and in combination, a box can be used only once?

A. 200
B. 220
C. 180
D. 130

60. Directions: Read the given statement(s) and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statement(s).
Statements:
Some stones are cubes.
No cube is a glass.
All bats are cubes.
Conclusions:
I. Some stones being bats is a possibility.
II. No bat is a glass.
III. All cubes are bats.
IV. No stone is a glass.

1. Only Conclusions I, II and IV follow
2. Only Conclusions II and III follow
3. Only Conclusions I and II follow
4. Only Conclusion I follows
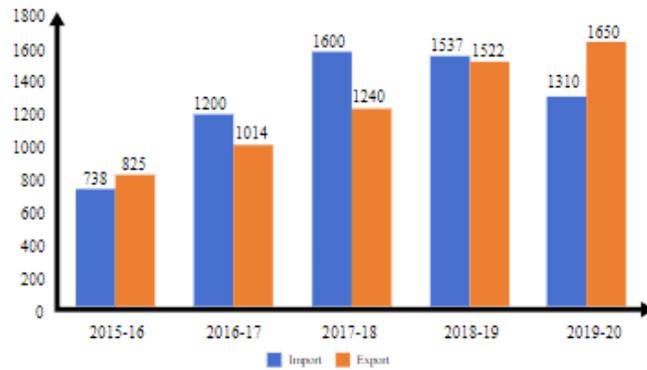
61. The import and export of a country (in lakhs rupees) during a certain period is given in the following bar graph. Read the bar graph carefully and answer the following question.
During which year the difference between import and export is minimal?

A. 2018 - 19
B. 2019 - 20
C. 2016 - 17
D. 2017 - 18

62. What is the average of exports during the given period of time?

A. Rs.1,250.2 lakhs
B. Rs.1,240.0 lakhs
C. Rs.1,248.2 lakhs
D. Rs.1,115.4 lakhs

63. The bar graph given below shows the percentage distribution of the total production of six different types of cars by a car manufacturing company over 2 years.

Percentage of Six different types of cars manufactured by a company over two years
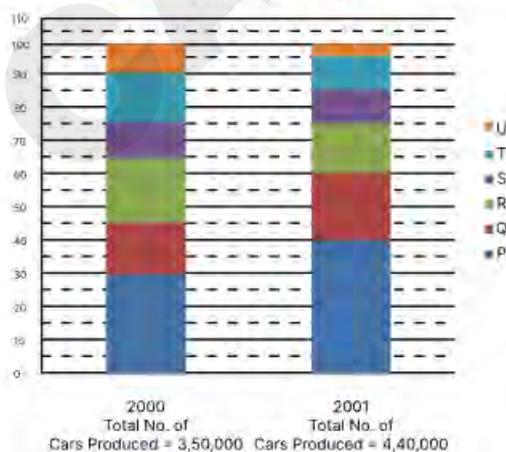
If 75% of the T-type cars produced each year were sold by the company, how many T-type cars remain unsold?

A. 23500
B. 22000
C. 24125
D. 25000

64. The total number of cars of type P, R, and U manufactured in 2001 is:

A. 1,54,000
B. 1,76,000
C. 2,00,000
D. 2,64,000

65. Direction: A man is facing in the south direction. He turns 135° in the anticlockwise direction and then 180° in the clockwise direction. In which direction is he facing now?

A. South-East
B. South-West
C. North-East
D. North-West

66. Directions: What day of the week will be on the 1st of January 2033?

A. Saturday
B. Monday
C. Sunday
D. Tuesday

67. Directions: Today is Friday. After 55 days, it will be:

A. Tuesday
B. Thursday
C. Wednesday
D. Monday

68. Directions: The average temperature of the town in the first six days of a month was 41° C and the sum of the temperatures of the first five days of the same month was 201° C. What was the temperature on the sixth day of the month?

A. 40° C
B. 45° C
C. 46° C
D. 50° C

69. Directions: Which two numbers, from amongst the given options, should be interchanged to make the given equation correct?

$(6)^3 \div 12 + [(\sqrt{81}) \times 4] - (28 \div 2) + 24 = 43$

   A. 12 and 24
   B. 6 and 24
   C. 81 and 4
   D. 28 and 24

70. Directions: The ratio of the present ages of Aman and Ankit is 2 : 1 and the sum of their present ages is 72 years. What will be Aman's age (in years) after 6 years?

   A. 30
   B. 48
   C. 52
   D. 54

71. Directions: In a group of 50 students, 25 play Hockey, 30 play Football, and 8 play no games. What is the number of students who play both Hockey and Football?

   A. 10
   B. 11
   C. 12
   D. 13

72. Directions: If the sum of three consecutive numbers is 15, what is the square of the middle number?

   A. 16
   B. 25
   C. 36
   D. 9

73. Directions: Which figure should replace the question mark (?) if the series were to be continued?

P O A	Z C P	□ ⌂ A	O P □	
⌂ S C	O 2 =	Z S P	⌂ 2 C	?
Z = □	□ ⌂ A	O C =	= Z A	

A.

```
| =  Z  A |
| O  S  □ |
| ◠  P  C |
```

B.

```
| =  Z  A |
| O  ꙅ  □ |
| ◠  P  C |
```

C.

```
| =  C  O |
| P  ꙅ  Z |
| A  ◠  □ |
```

D.

```
| =  C  O |
| P  S  Z |
| A  ◠  □ |
```

74. Directions: Looking at a photograph of a woman, Samuel said, "She is the mother of my father's brother's daughter." How is Samuel related to the women shown in the picture?

    A. Son
    B. Brother
    C. Brother-in-law
    D. Husband's brother's son

75. Directions: If A – B means that A is the mother of B, A + B means that A is the father of B, A ÷ B means that A is the sister of B, then which of the following expressions shows that P is the aunt of Q?

    A. P + R ÷ Q
    B. Q ÷ R + P
    C. P ÷ R – Q
    D. R ÷ P – Q

SECTION-B:
COMMUNICATION ABILITY

76. Select the most appropriate collocating word to fill in the blank.
Ram was praised for his_____ leadership.

    A. Imaginary
    B. Visionary
    C. Magical
    D. Broad

77. Select the most appropriate option that can substitute the underlined segment in the given sentence.
He was <u>looking into his book</u> for the last two hours but couldn't find it.

    A. looking down on his book
    B. looking above his book
    C. looking for his book
    D. looking after his book

78. Select the most appropriate meaning of the given idiom.
All eyes

    A. Watching with anger
    B. Watching eagerly
    C. Watching with no interest
    D. Not watching at all

79. Select the most appropriate ANTONYM of the word 'SINKS' from the given sentence.
Groups work together to create Christmas parade themes, which are then carried out in floats, musical groups, and strolling figures.

    A. Floats
    B. Create
    C. Parade
    D. Strolling

80. Select the most appropriate ANTONYM of the underlined word. Regardless of their diversity, all flowers have a uniform function, the reproduction of the species through the production of seed.

    A. Melancholy
    B. Equilibrium
    C. Affinity
    D. Diversity

81. Select the most appropriate ANTONYM of the given word.
Polite

    A. Rude
    B. Civil
    C. Decent
    D. Sober

82. Select the most appropriate option to fill in the blank.
The contingent managed to _____ successfully.

    A. park the deal
    B. close the deal
    C. heal the deal
    D. catch the deal

83. Select the most appropriate option to fill in the blank.
The monster trucks have very _____ engines, they can probably pull a train coach without any problem.

    A. Dominant
    B. Forceful
    C. Impressive
    D. Powerful

84. Select the most appropriate ANTONYM of the underlined word.
The singer complained to the police that she was purportedly attacked back stage immediately after the concert.

    A. Maliciously
    B. Impossibly
    C. Dramatically
    D. Severely

85. Select the option that is similar in meaning to the underlined word.
He <u>declined</u> the offer to join the Board of Directors.

    A. Delayed
    B. Rejected
    C. Modified
    D. Deferred

86. Select the most appropriate ANTONYM of the given word.
Incoherent

    A. Gloomy
    B. Apparent
    C. Pensive
    D. Rational

87. Select the most appropriate meaning of the underlined idiom in the given sentence.
The intern aspired to understand the <u>ins and outs</u> of the operating systems of the institution.

    A. Stern regulations
    B. Prior conditions
    C. Elaborate theories
    D. Detailed description

88. Select the most appropriate idiom that can substitute the italicised words in the given sentence.
My mother said, *"Make consistent progress for success."*

    A. slow and steady
    B. make a habit
    C. in and outs
    D. do's and don'ts

89. Select the option that can be used as a one-word substitute for the given group of words.
A list or collection of books or informative graphics

    A. Bale
    B. Hamlet
    C. Gallery
    D. Catalogue

90. Select the most appropriate synonym of the underlined word in the given sentence.
The young fellow was innocent and without guile.

    A. Morality
    B. Pride
    C. Greed
    D. Deceit

91. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution'.
Kranthi loves to swim at the local swimming pool in order that relieve his work stress.

    A. in order which
    B. No substitution
    C. in order as to relieve
    D. in order to relieve

92. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution'.
The students decided to surprise their teacher on her birthday.

    A. their teacher at her birthday
    B. there teacher on her birthday
    C. her teacher on her birthday
    D. No substitution

93. Select the sentences that contains no spelling errors.

    A. Diabeties is a chronic disease.
    B. Diabetes is a chronic disease.
    C. Daibetes is a chronic disease.
    D. Diabites is a chronic disease.

94. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
The audience has being / angry as the magician / is not performing / as expected

    A. is not performing
    B. as expected
    C. The audience has being
    D. angry as the magician

95. Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution'.
I am working hard in order to earn a decent living.

    A. buying a decent living
    B. earning a better living
    C. purchase a reputed life
    D. No substitution

96. Select the most appropriate option to fill in the blank.
The angles are equal, consequently the sides are_____.

    A. Equal
    B. Unequal
    C. Larger
    D. Smaller

97. Select the most appropriate option to fill in the blanks.
As cattle are to herd so are birds to _____.

    A. Flock
    B. Litter
    C. Pack
    D. Streak

98. Select the most appropriate option to fill in the blanks.
Soon after the doctor gave her the next _____ of the medicine, the patient began to_____.

    A. dose, dozed
    B. dosed, doze
    C. dose, doze
    D. doze, dose

99. Select the most appropriate option to fill in the blank.
The interviewees were slowly becoming impatient as they were left to _____ in the waiting room for hours.

    A. draw the long bow
    B. cool their heels
    C. hold water
    D. flog a dead horse

100. Select the most appropriate option to fill in the blank.
The planets are _____around the sun.

    A. Revolving
    B. Circling
    C. Rotating
    D. Rounding

101. Select the most appropriate option to fill in the blank.
It is very difficult for her to_____.

    A. keep a secret
    B. touch a secret
    C. make a secret
    D. cry a secret

102. Select the most appropriate option to fill in the blank.
The patient was _____ from the hospital.

    A. Liberated
    B. Discharged
    C. let out
    D. Released

103. Select the most appropriate option to fill in the blank.
If you try to do something every day you will _____ progress.

    A. Hold
    B. Get
    C. Make
    D. Catch

104. Select the most appropriate option to fill in the blank.
The doctor directed the nurse to administer an _____ medicine to the patient.

    A. Official
    B. Eminent
    C. Alternative
    D. Insightful

105. Select the most appropriate collocating word to fill in the blank.
After having understood the ill effects, he said he would _____ drinking alcohol.

A. Quit
B. Finish
C. Close
D. Terminate

106. Select the most appropriate option to fill in the blank.
Although I have a good job, I wish to take the _____ of starting my own business.

A. Back
B. Seat
C. Look
D. Risk

107. Select the most appropriate synonym of the bracketed word to fill in the blank.
For Rahul, everything was a _____ (modern) experience until he stepped onto the field.

A. New
B. Flashy
C. Global
D. Asiatic

108. Select the most appropriate option to fill in the blank and complete the collocation.
Every time my boss comes up with some good idea, he gets into _____.

A. Trouble
B. Fun
C. Sleep
D. Shock

109. Select the most appropriate option to fill in the blank.
The contingent managed to _____ successfully.

A. park the deal
B. close the deal
C. heal the deal
D. catch the deal

110. Select the most appropriate option to fill in the blank.
The little boy demanded colourful balloons, ribbons in the village fair. When the father didn't pay heed to his demands, the boy made a_____.

A. cloven hoof
B. wry face
C. a far cry
D. jaundiced eye

Read the following Passage and answer the Questions (111 to 115) given below:

Passage:
Late one evening, a curious teenager reached out to me, expressing his bewilderment at the vast world of programming and beseeching guidance on what languages to learn and books to read. Reflecting upon his plea, I found my certainty waver. Rather than basking in the implied acknowledgement of my coding expertise, I found myself humbled. As I pondered the abyss of programming languages and frameworks I had yet to explore compared to my limited coding knowledge, my confidence dwindled.

Why, dear seeker of knowledge, I mused, I can barely scratch the surface. I'm merely a custodian of an expansive unknown. The algorithms I haven't mastered, the technologies I'm yet to understand, and the projects I haven't tackled — young coder, if you were privy to all this, you would marvel. But strangely, it doesn't dampen my spirits. In fact, I feel a sense of optimism in the face of these colossal, uncharted territories. Someday, perhaps, I will unravel the intricacies of these coding enigmas. In my heart, however, I harbour doubts about accomplishing such lofty goals.

111. The curious teenager was:

   A) Perplexed
   B) Excited
   C) Bored
   D) Eager

112. The teenager's trust in the author's coding expertise made the author feel:

   A) Overwhelmed
   B) Humbled
   C) Uninterested
   D) Doubtful

113. The author's coding knowledge was as vast as a(n):

   A) Ocean
   B) Meadow
   C) Desert
   D) Abyss

114. The author takes their coding skills for granted.

   A) Enthusiasm
   B) Proficiency
   C) Complexity
   D) Expertise

115. 'Uncharted territories' in the passage implies areas of programming with which the author is:

    A) Seasoned
    B) Unexplored
    C) Mastered
    D) Navigated

Read the following Passage and answer the Questions (116 to 120) given below:

Passage:
In a quaint town nestled between rolling hills and babbling brooks, there stood a centuries-old bookstore. The creaking wooden floors echoed with the footsteps of curious readers as they meandered through narrow aisles lined with shelves that seemed to touch the heavens. Dusty old tomes shared space with modern bestsellers, creating an atmosphere where time itself felt suspended.

The owner, an elderly bibliophile with a penchant for storytelling, had spent a lifetime collecting these literary treasures. Every book in the store had its own story, its own journey through time. The scent of aged paper and ink lingered in the air, inviting visitors to embark on a sensory voyage through the annals of literature.

As the sun cast warm hues through the store's vintage stained-glass windows, a group of students huddled in a corner, engrossed in animated discussions about their latest finds. A solitary writer sat in a cosy nook, scribbling furiously in a weathered notebook, inspired by the serenity that surrounded them.

The town's residents often sought solace in the bookstore's quiet corners, finding refuge from the hustle and bustle of everyday life. In a world that seemed to move at an ever-accelerating pace, this haven of literature offered a timeless sanctuary, a space where stories unfolded at their own leisurely rhythm.

116. What feeling does the bookstore create with its creaking wooden floors and shelves filled with books?

    A) Quiet and strange
    B) Cozy and comfortable
    C) Busy and chaotic
    D) Bright and lively

117. What does the owner love, as mentioned in the passage?

    A) Cooking
    B) Stories
    C) Painting
    D) Gardening

118. What is in the air that invites visitors to take a sensory journey?

A) Fresh paint
B) Scent of old paper and ink
C) Perfume
D) Coffee aroma

119. How does the sunlight affect the atmosphere in the bookstore?

A) Creates a chilling effect
B) Casts warm hues
C) Makes it too bright
D) Creates shadows

120. What does the bookstore offer to the town's people?

A) Loud gatherings
B) A peaceful place
C) Fast-paced activities
D) Dynamic exhibitions

Read the following Passage and answer the Questions (121 to 125) given below:

Passage:
In a bustling village, a group of children eagerly prepared for the annual treasure hunt. The village square buzzed with excitement as kids gathered with maps in hand. The organizers had hidden colourful clues all around, leading to a hidden trove of treasures.

Amid the anticipation, a mischievous cat named Whiskers roamed the square. Ignoring the festivities, Whiskers eyed the children curiously, wondering what all the fuss was about. The children, unaware of Whiskers' curiosity, were engrossed in deciphering clues and unravelling the mystery.

As the children ventured deeper into the village, Whiskers, ever the playful feline, decided to join the fun. Pouncing on fallen leaves and chasing imaginary foes, Whiskers unintentionally became a part of the treasure hunt. The children, spotting Whiskers, were delighted by the unexpected addition to their adventure.

However, a stern-faced adult, oblivious to Whiskers' unintended participation, scolded the cat for disrupting the event. Whiskers, feeling unjustly scolded, slinked away, leaving the children to resume their quest for hidden treasures.

121. Why did the children gather in the village square?

A) They were preparing for a festival.
B) They were participating in the annual treasure hunt.

C) They were attending a school assembly.
D) They were organizing a picnic.

122. What was Whiskers doing as the children were engrossed in deciphering clues?

A) Chasing other animals in the square.
B) Sleeping in a corner.
C) Eyed the children curiously.
D) Ignoring the festivities.

123. How did Whiskers unintentionally become a part of the treasure hunt?

A) Whiskers hid the clues.
B) Whiskers followed the children.
C) Whiskers pounced on fallen leaves and chased imaginary foes.
D) Whiskers disrupted the event intentionally.

124. Why did an adult scold Whiskers during the treasure hunt?

A) Whiskers found the treasure.
B) Whiskers disrupted the event intentionally.
C) Whiskers was perceived as disrupting the event.
D) Whiskers scared the children.

125. What was the outcome of the scolding received by Whiskers?

A) Whiskers joined the children in the hunt.
B) Whiskers found a cozy spot to nap.
C) Whiskers slinked away, leaving the children to resume their quest.
D) Whiskers continued to play with the children.

Read the following Passage and answer the Questions (126 to 130) given below:

Passage:
In a small town, there lived a cheerful girl named Lily. She loved exploring the nearby woods, where tall trees provided shade, and colorful flowers bloomed in the meadows. Lily's favourite pastime was collecting pebbles by the bubbling stream. One day, as she ambled through the forest, she stumbled upon an old, abandoned house.

The house, nestled amidst overgrown vines, had an eerie charm. Lily, being curious, decided to investigate. Cautiously pushing open the creaking door, she discovered dusty furniture and cobwebs, making it clear the house had been uninhabited for years.

As Lily explored further, she found a mysterious box in the attic. Intrigued, she opened it to reveal a trove of forgotten treasures — old photographs, faded letters, and a dusty journal. Lily spent

hours reading about the lives of the people who once called the house home. It felt like she had unearthed a piece of history.

The sun began to set, casting a warm glow on the abandoned house. Lily, feeling content, left the house behind, carrying the treasures of the past with her. As she walked back through the woods, she couldn't help but feel grateful for the unexpected adventure that brightened her day.

126. What was Lily's favourite pastime in the woods?

A) Exploring the meadows.
B) Collecting pebbles by the stream.
C) Investigating old houses.
D) Climbing tall trees.

127. What did Lily find in the attic of the old house?

A) Cobwebs.
B) Overgrown vines.
C) Forgotten treasures.
D) Dusty furniture.

128. What is an antonym for "cheerful" as used to describe Lily?

A) Sad
B) Curious
C) Eerie
D) Grateful

129. What does the term "ambled" mean in the sentence "as she ambled through the forest"?

A) Ran quickly
B) Walked slowly
C) Skipped joyfully
D) Climbed trees

130. Which word could be used as a synonym for "intrigued" in the sentence "Intrigued, she opened it to reveal a trove of forgotten treasures"?

A) Bored
B) Interested
C) Confused
D) Surprised

131. What is the purpose of using clear and concise subject lines in email communication?

A) To confuse recipients
B) To prioritize and understand the email's purpose quickly
C) To increase the length of the email
D) To disregard the content of the email

132. Why is a timely response to emails considered important in professional communication?

A) To procrastinate on tasks
B) To show disrespect for others' time
C) To acknowledge receipt and prioritize effective communication
D) To avoid acknowledging the receipt of emails

133. According to the Audience-Centered Approach, what is essential for tailoring presentations effectively?

A) Ignoring the audience's needs
B) Prioritizing the presenter's preferences
C) Understanding the audience's needs, preferences, and knowledge levels
D) Focusing only on the presenter's knowledge levels

134. How does the Transactional Model of Communication relate to negotiation processes?

A) It emphasizes one-way communication
B) It emphasizes the interactive and dynamic nature of communication during negotiations
C) It discourages communication during negotiations
D) It suggests a static communication process

135: What does Symbolic Interactionism explain in the context of business terms?

A) How to avoid assigning meanings to symbols
B) How individuals assign meanings to symbols, ensuring shared understanding
C) The irrelevance of consistent definitions in effective communication
D) How to create confusion in communication

136. Which theoretical model emphasizes the importance of clear and consistent conceptualization in business terminology?

A) Symbolic Interactionism
B) Language as a Social Construct
C) Conceptual Clarity
D) Financial Statements

137: What does the phrase "On the same page" mean in a business context?

A) Disagreement or misunderstanding
B) Agreement or understanding
C) Initiating a project
D) Setting higher standards

138. What does CPU stand for?

A) Central Processing Unit
B) Central Peripheral Unit
C) Central Program Unit
D) Central Power Unit

139. What is the primary function of RAM?

A) Long-term data retention
B) Graphics rendering
C) Temporary data storage
D) Network communication

140. Which acronym represents a specialized processor for rendering graphics and images?

A) OS
B) GPU
C) SSD
D) DNS

141. What does OS stand for in the context of computers?

A) Optical System
B) Operating System
C) Output Software
D) Online Service

142. What is the main purpose of an HDD?

A) Temporary data storage
B) Graphics rendering
C) Long-term data retention
D) Network communication

143. Which protocol is used for secure data transfer over the internet?

    A) HTTP
    B) HTTPS
    C) DNS
    D) FTP

144. What does API stand for in the field of software development?

    A) Application Processing Interface
    B) Advanced Programming Interface
    C) Artificial Programming Interface
    D) Application Programming Interface

145. In the context of databases, what does CRUD stand for?

    A) Create, Read, Update, Delete
    B) Control, Retrieve, Update, Deliver
    C) Compute, Remove, Update, Deploy
    D) Centralize, Retrieve, Update, Distribute

SECTION-C:
MATHEMATICAL ABILITY

146. The value of $\tan^2 \theta + \cot^2 \theta - \sec^2 \theta \csc^2 \theta$ is:

   A. 2
   B. -2
   C. 0
   D. 1/2

147. A coconut tree swings with the wind in such a manner that the angle covered by its trunk is 18°. If the topmost portion of the tree covers a distance of 44 metres, find the length of the tree. (tan 18° = 0.3249).

   A. 120 metres
   B. 210 metres
   C. 140 metres
   D. 70 metres

148. Two numbers are in the ratio of 6 : 5. If their HCF is 3, then what is the LCM of the two numbers?

   A. 64
   B. 110
   C. 90
   D. 80

149. What is the ratio between the HCF and LCM of the numbers whose LCM is 48 and the product of the numbers is 384?

   A. 1 : 4
   B. 1 : 6
   C. 1 : 3
   D. 2 : 5

150. If a 7-digit number 54p3987 is divisible by 11, then p is equal to:

   A. 5
   B. 9
   C. 4
   D. 1

151. If the number 6788934a4 is divisible by 11, then find the smallest whole number in the place of a.

    A. 3
    B. 4
    C. 5
    D. 2

152. Find the smallest number that can be subtracted from 148109326 so that it becomes divisible by 8.

    A. 4
    B. 8
    C. 6
    D. 10

153. Find the value of 80.40 ÷ 20 - (-4.02) + 2.06 = _____.

    A. 9.8
    B. 10.2
    C. 10.1
    D. 8.2

154. Simplify the following expression. 120 ÷ 15 of 4 + [11 × 4 ÷ 4 of {4 × 2 – (8 – 11)}]

    A. 120/61
    B. 61/120
    C. 3
    D. -3

155. Determine the LCM of two numbers if their HCF is 9 and their ratio is 14 : 19.

    A. 2394
    B. 3990
    C. 1596
    D. 3192

156. The HCF of three numbers 98, 175 and 210 will be:

    A. 6
    B. 3
    C. 5
    D. 7

157. The HCF of the two numbers is 21 and their LCM is 840. If one of the numbers is 49, then the other number is:

A. 650
B. 540
C. 810
D. 360

158. The ratio of expenditure to savings of a woman is 5 : 1. If her income and expenditure are increased by 10% and 20%, respectively, then find the percentage change in her savings.

A. 55%
B. 60%
C. 50%
D. 40%

159. The length and breadth of a rectangle are increased by 8% and 5%, respectively. By how much percentage will the area of the rectangle increase?

A. 13.4%
B. 15.4%
C. 12.4%
D. 16.4%

160. The price of a scooter increases successively by 10%, 5% and 15%. What is the total percentage increase in price of scooter?

A. 32 33/40 %
B. 34 21/40 %
C. 30 11/40 %
D. 36 31/40 %

161. The expenditure on the cost of living of a man and his family is 60% of his salary. He gets two increments of 30% and 60% of his salary. If his savings increase by 250% of his initial savings, then the new cost of living expenditure is what percentage (rounded off to the one digit after decimal) of the increased salary?

A. 32.7%
B. 43.6%
C. 29.5%
D. 36.6%

162. The sum of two numbers is 680. If the bigger number is decreased by 15% and the smaller number is increased by 15%, then the resultant numbers are equal. Find the smaller number.

A. 307
B. 285
C. 289
D. 304

163. Shiva's monthly salary is Rs.75,000. He spends Rs.12,000 on household items, Rs.14,000 on LIC and mutual funds, Rs.15,000 on his children's education, and keeps Rs.10,000 for miscellaneous expenses. His savings are Rs.21,000 per month and he donates the rest of the amount to an orphanage. The percentage of his income that he donates is:

A. 3%
B. 6%
C. 8%
D. 4%

164. Riya could not decide between a discount of 30% or two successive discounts of 25% and 5%, both given on shopping of INR 3,840. What is the difference between both the discounts?

A. INR 44
B. INR 48
C. INR 42
D. INR 46

165. If 450 men can finish construction of an apartment in 20 days, then how many men are needed to complete the same work in 30 days?

A. 150
B. 300
C. 400
D. 250

166. Two persons A and B working separately can sanitise a building in 6 hours and 10 hours, respectively. They work in stretches of one hour alternately. If A begins at 8 a.m., then when will the work be finished?

A. 9 and 1/3 hours.
B. 7 and 1/3 hours
C. 6 and 1/3 hours.
D. 8 and 1/3 hours.

167. A policeman sees a chain snatcher at a distance of 500 m. He starts chasing the chain snatcher who is running at a speed of 5 m/s, while the policemen are chasing him at a speed of 15 m/s. When the chain snatcher is caught by the policemen, what distance will the chain snatcher have covered?

   A. 200 m
   B. 180 m
   C. 150 m
   D. 250 m

168. In a 1500 m race, Anil beats Bakul by 150 m, and in the same race, Bakul beats Charles by 75 m. By what distance does Anil beat Charles?

   A. 217.50 m
   B. 200.15 m
   C. 293.50 m
   D. 313.75 m

169. A man rows a boat a certain distance downstream in 9 hours, while it takes 18 hours to row the same distance upstream. How many hours will it take him to row three-fifth of the same distance in still water?

   A. 9.5
   B. 7.2
   C. 10
   D. 12

170. Two stations R and S are 400 km apart from each other. A train leaves from R to S and simultaneously another train leaves from S to R. Both trains meet after 10 hours. If the speed of the first train is 4 km/hr more than the second train, then what is the speed of the slower train?

   A. 18 km/hr
   B. 26 km/hr
   C. 16 km/hr
   D. 22 km/hr

171. What is the ratio of the mean proportional between 1.6 and 3.6 and the third proportional of 5 and 8?

   A. 2 : 15
   B. 5 : 16
   C. 3 : 16
   D. 4 : 15

172. The ratio of the present age of father to that of his son is 7 : 2. If after 10 years the ratio of their ages will become 9 : 4, then the present age of the father is:

A. 43 years
B. 35 years
C. 37 years
D. 40 years

173. A container contains 25 litre of milk. From this container, 5 litre of milk is taken out and replaced by water. This process is further repeated two times. How much milk is there in the container now?

A. 11.5 litre
B. 14.8 litre
C. 13.5 litre
D. 12.8 litre

174. The batting average for 27 innings of a cricket player is 47 runs. His highest score in an innings exceeds his lowest score by 157 runs. If these two innings are excluded, the average score of the remaining 25 innings is 42 runs. Find his highest score in an innings.

A. 176
B. 188
C. 186
D. 174

175. Ten men begin to do a work. But after some days, four of them left the job. As a result, the job that could have been completed in 40 days is completed in 50 days. How many days after the commencement of the work did the four men leave?

A. 30
B. 20
C. 35
D. 25

176. A and B can complete a work in 10 and 16 days respectively. A begins to do the work and they work alternatively one at a time for one day each. The whole work will be completed in:

A. 12 1/4 days
B. 13 1/4 days
C. 15 1/4 days
D. 14 1/4 days

177. The average of six numbers is 3.52. The average of two of them is 3.7, while the average of the other two is 2.5. What is the average of the remaining two?

- A. 3.7
- B. 2.5
- C. 4.36
- D. 3.52

178. Ram, Shyam, Rohan, Reeta, and Mukesh are five members of a family who are weighed consecutively and their average weight is calculated after each member is weighed. If the average weight increases by 2 kg each time, how much heavier is Mukesh than Ram?

- A. 14 kg
- B. 18 kg
- C. 16 kg
- D. 12 kg

179. A copper sphere of diameter 18 cm is drawn into a wire of diameter 6 mm. Find the length of the wire.

- A. 143 m
- B. 108 m
- C. 324 m
- D. 234 m

180. A hemisphere of lead of radius 4 cm is cast into a right circular cone of height 72 cm. What is the radius of the base of the cone?

- A. 1.63 cm
- B. 1.35 cm
- C. 1.33 cm
- D. 1.45cm

181. A solid metallic sphere of radius 12 cm is melted and recast into a cone having a diameter of the base of 12 cm. What is the height of the cone?

- A. 258 cm
- B. 192 cm
- C. 166 cm
- D. 224 cm

182. A conical vessel, whose internal radius is 20 cm and height is 27 cm, is full of water. If this water is poured into a cylindrical vessel with an internal radius of 15cm, what will be the height to which the water rises in it?

  A. 16 cm
  B. 10 cm
  C. 12 cm
  D. 14 cm

183. A conical vessel (solid) is made of iron. Its base radius is 7 cm and its height is 15 cm. If the weight of the iron per cubic centimetre is 15 g, what is the weight of the vessel?

  A. 13.55 kg
  B. 12.55 kg
  C. 14.55 kg
  D. 11.55 kg

184. The area of the floor of a cubical room is 64 m^2. The length of the longest rod that can be kept in the room is:

  A. 16 √3 m
  B. 4 √3 m
  C. 12 √3 m
  D. 8 √3 m

185. A hollow sphere has an outer radius of 6 cm and inner radius of 3 cm. What is the volume of this hollow sphere?

  A. 252π cm³
  B. 356π cm³
  C. 144π cm³
  D. 175π cm³

186. How many four digit numbers can be made with the digits 1, 2, 3, 4, 5, 6, 7 which are divisible by 5 when none of the digits are repeated?

  A. 120
  B. 24
  C. 35
  D. 720

187. Seven persons are to be seated in a row. The probability that two particular persons sit next to each other is

    A. 1/3
    B. 1/6
    C. 2/7
    D. 1/2

188. Three numbers are chosen from 1 to 20. Find the probability that they are not consecutive

    A. 186/190
    B. 187/190
    C. 189/190
    D. $^{20}C_3$

189. Determine the probability p, for the following event
A king, 9 of hearts, or 3 of spades appears in drawing a single card from a well-shuffled ordinary deck of 52 cards.

    A. 2/13
    B. 1/13
    C. 3/26
    D. 5/52

190. In a population of 10,000 individuals, a rare disease affects 1 in every 1000 people. A diagnostic test for the disease has been developed, with a sensitivity of 98% and a specificity of 95%. If a randomly selected individual tests positive for the disease, what is the probability that they actually have the disease if they belong to a high-risk group with a disease prevalence of 5%?

    A. 0.10%
    B. 0.49%
    C. 1.96%
    D. 9.80%

191. The mean and standard deviation of the weights of 200 objects were found to be 75 kg and 9 kg, respectively. Later, it was discovered that a weight of 75 kg was wrongly recorded as 80 kg. What are the correct mean and standard deviation, respectively?

    A. 74 kg and 9 kg
    B. 75 kg and 9 kg
    C. 75 kg and 8 kg
    D. 74 kg and 8 kg

192. The slope of the line passing through the points (2, –1) and (x, 5) is –1. Find x.

1. 4
2. -4
3. -8
4. 8

193. $\lim\limits_{x\to 0} \dfrac{\sin^{-1} x - \tan^{-1} x}{x^3}$ is equal to

A. 2
B. 1
C. -1
D. 1/2

194. If $A \cap B$ = {3, 4, 5, 6} and $A \cap C$ = {5} then the value of set $A \cap (B - C)$ is ?

A. {3, 4, 5, 6}
B. {3}
C. {3,4,6}
D. {3,5}

195. Find the domain of the function $f(x) = [x]$.

A. Positive integers
B. Negative integers
C. Both (a) and (b)
D. None of the above

196. A coconut tree swings with the wind in such a manner that the angle covered by its trunk is 18°. If the topmost portion of the tree covers a distance of 44 metres, find the length of the tree. (tan 18°$ = 0.3249).

A. 120 metres
B. 210 metres
C. 140 metres
D. 70 metres

197. Study the given triangle and find the length of BC.
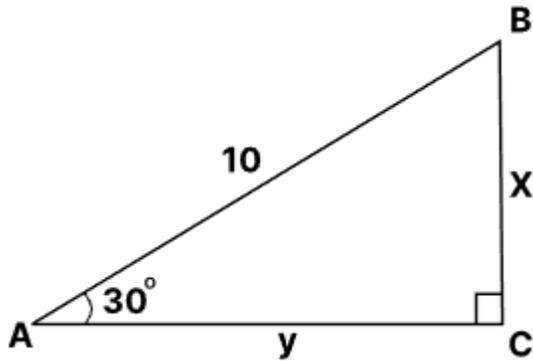
A. 5/2
B. 6
C. 5
D. 3

198. Which of the following is a FALSE statement?

A. $\tan^2 A = 1 - \sec^2 A$
B. $\sin A = \tan A \times \cos A$
C. $\csc^2 A - 1 = \cot^2 A$
D. $\cos A \times \sec A = 1$

199. Calculate the mean from the following table.

Scores	Frequencies
0-10	2
10-20	4
20-30	12
30-40	21
40-50	6
50-60	3
60-70	2

A. 34.2
B. 33.4
C. 32.6
D. 35.8

200. The average of 20 numbers is calculated as 35. It is discovered later on that while calculating the average, one number, 85, was misread as 45. The correct average is:

A. 36
B. 36.5
C. 37
D. 37.5

ANSWER KEY

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1 - C , 2 - D, 3 - D, 4 - B, 5 - D, 6 - C, 7 - D, 8 - D, 9 - C, 10 - C,11 - A, 12 - A, 13 - B, 14 - C, 15 - A, 16 - A , 17 - C, 18 - C, 19 - A, 20 - A, 21 - A, 22 - C, 23 - B, 24 - D, 25 - D, 26 - B, 27 - B, 28 - D, 29 - A, 30 - B, 31 - B, 32 - C, 33 - B, 34 - D, 35 - C, 36 - B, 37 - D, 38 - C, 39 - B, 40 - D,41 - D, 42 - C, 43 - B, 44 - B, 45 - A, 46 - D, 47 - C, 48 - D, 49 - B, 50 - A, 51 - D, 52 - A, 53 - C, 54 - D, 55 - D, 56 - B, 57 - A, 58 - C, 59 - A, 60 - C, 61 - A, 62 - A, 63 - C, 64 - D, 65 - B, 66 - A, 67 - B, 68 - B, 69 - A, 70 - D, 71 - D, 72 - B, 73 - A, 74 - D, 75 - C, 76 - B, 77 - C, 78 - B, 79 - A, 80 - D, 81 - A, 82 - B, 83 - D, 84 - B, 85 - B, 86 - D, 87 - D, 88 - A, 89 - D, 90 - D,91 - D, 92 - D, 93 - B, 94 - C, 95 - D, 96 - A, 97 - A, 98 - C, 99 - B, 100 - A, 101 - A, 102 - B, 103 - C, 104 - C, 105 - A, 106 - D, 107 - A, 108 - A, 109 - B, 110 - B,111 - D, 112 - B, 113 - B, 114 - B, 115 - B, 116 - B, 117 - B, 118 - B, 119 - B, 120 - A,121 - B 122 - C, 123 - C, 124 - C, 125 - C 126 - B, 127 - C, 128 - A 129 - B, 130 - B, 131 - B, 132 - C, 133 - C, 134 - B, 135 - B, 136 - C, 137 - B, 138 - A, 139 - C, 140 - B,141 - B, 142 - C, 143 - B,144 - D, 145 - A, 146 - B, 147 - C, 148 - C, 149 - B, 150 - A,151 - D, 152 - C, 153 - C, 154 - C, 155 - A, 156 - D, 157 - D, 158 - D, 159 - A, 160 - A,161 - A, 162 - C, 163 - D, 164 - B, 165 - B, 166 - B, 167 - D, 168 - A, 169 - B, 170 - A, 171 - C, 172 - B, 173 - D, 174 - B, 175 - D, 176 - A, 177 - C, 178 - C, 179 - B, 180 - C,181 - B, 182 - A, 183 - D, 184 - D, 185 - A, 186 - A, 187 - C, 188 - B, 189 - C, 190 - B ,191 - A, 192 - B, 193 - D, 194 - C, 195 - C, 196 - C, 197 - C 198 - A, 199 - B, 200 - C

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SOLUTIONS

1. Correct Answer:- C

Explanation:-

Since we know that area of square = area of circle i.e. $a^2 = \pi r^2$ statement I gives the diagonal of the square, so we can determine the side of the square in terms of X and hence the circumference too in terms of X, so statement I is alone sufficient. Statement II gives us the side of the square. So we can find the circumference of the circle in terms of Y. Hence 3rd option.

2. Correct Answer:- D

Explanation:-

Statement I gives us that $\frac{1}{2} \times \text{Base} \times \text{height} = I \times 15$, so is not sufficient. Statement II gives L= 12 m, hence alone is not sufficient. Even on combining the two statements we cannot find the height as we do not know the base also. Hence option (4).

3. Correct Answer:- D

Explanation:-

Statement I gives the investment of Rekha only, so alone is not sufficient. Statement II does not give complete information regarding the amount invested by Nutan, so alone is not sufficient. Even by combining, we do not know anything clearly about Nutan's investment for the whole year. Hence 4th option.

4. Correct Answer:- B

Explanation:-

Statement I just tells us the total of Rs.400 for the first four days of the work, so the average daily wages of five days cannot be determined. Statement II states that the worker made 20 % more each day and we know that he earns Rs. 80 the first day, so we can calculate the wages for five days and hence the average. Hence statement II alone is sufficient to give the answer.

5. Correct Answer:- D

Explanation:-

Statement I gives the cost of the carpet only and no dimensions are known, so is not sufficient alone. Statement II gives us the perimeter of the hall but since the hall is a rectangle we still do not know the length and breadth of the room. So not sufficient. Even on combining, we do not know the dimensions of the room. Hence option (4).

6. As we know circumradius of the right angle triangle is half of the hypotenuse, So statement II is redundant.

7. From statement I alone and statement II alone we cannot answer the question. Even by using both the statement together, we cannot answer the question as there is no unique value.

$\because ar^6 = 128 \quad (i)$

and $\because ar^2 = 8 \quad (ii)$

Dividing equation (ii) by (i), we get

$r^2 = 16 \, or, r = \pm 2$

Thus, no unique value possible.

8. From statement I alone we cannot answer the question as there are many pair to satisfy the given condition, From statement II alone we cannot answer the question as from the given information we cannot conclude anything, Even by using both the statements together we cannot answer the question.

9. $\because A + B + C = Rs. 4,700.$

$\Rightarrow (c + 1200) + (c + 500) + c = 4700$

$\Rightarrow c = Rs. 1,000$

From statement I alone we cannot answer the question as we don't know for what time money is invested. similarly, from statement II alone we cannot answer the question as we don't know the total profit to be shown. But using both the statements together we can answer the question.

10. CP of mixture $= \dfrac{14}{1 \cdot 1} = Rs. 12 \cdot 72/L$

From statement I alone or statement II alone cannot answer the question.

using both statements together we can answer the question.

$\therefore$ CP of pure juice $= \dfrac{18}{12} = Rs. 15/L$

and CP of adulterated juice $= \dfrac{15}{1 \cdot 25} = Rs \cdot 12/L$

Now, using allegation we can answer the question.

11. Column A: Cost Price $= 250 \times \dfrac{100}{200} = \dfrac{1250}{6} = Rs. 208 \cdot 30$

Column B: Cost price $= 300 \times \dfrac{100}{140} = \dfrac{1500}{7} = Rs. 214 \cdot 20$

$\because$ B > A. Hence answer is 'a'.

12. Column A: We know if $a + b + c = 0$.

then $a^3 + b^3 + c^3 = 3abc$

Hence, $81^3 - 18^3 - 63^3 = 3 \times 18 \times 81 \times 63 = 2,75,562$

Column B: $100^3 - 60^3 - 40^3 = 3 \times 100 \times 60 \times 40 = 7,20,000$

$\therefore A < B.$ Hence, Answer is a

13. Column A: Average speed

$= \dfrac{2 \times 30 \times 45}{75} = 36 \, km/hr$

Column B: Average speed

$= \dfrac{100 + 50}{4} = \dfrac{150}{4} = 34 \cdot 5 \, km/hr.$

$\therefore A > B$

Hence, answer id b

14. Column A: External angle of equilateral triangle 120^0

Column B: Internal angle of regular hexagon$= 120^0$

$\therefore A = B$, Hence , answer is 'c'

15. Column A: Cost Price $= 250 \times \dfrac{100}{200} = \dfrac{1250}{6} = Rs.208 \cdot 30$

Column B: Cost price $= 300 \times \dfrac{100}{140} = \dfrac{1500}{7} = Rs.214 \cdot 20$

$\because B > A.$ Hence answer is 'a'.

16. Correct Answer:- A

Explanation:-

Column A : $(3)^{\frac{1}{3}}$ Column B :$(4)^{\frac{1}{4}}$

Making the powers equal, we get $(81)^{\frac{1}{12}}$ and $(64)^{\frac{1}{12}}$ for column A and B respectively.

As $81 > 64$, so column A is greater than column B.

17. Correct Answer:- C

Explanation:-

Column A : $\dfrac{1}{3} \times 8 = \dfrac{8}{3}$, Column B : $\dfrac{2}{3} \times 4 = \dfrac{8}{3}$

Hence both are equal.

18. Correct Answer:- C
Explanation:-

Column A : Time elapsed = 20 min. Column B : $\dfrac{1}{3} \times 60 = 20\ min$

Hence they are equal.

19. Correct Answer:- A
Explanation:-

Column A : Number of posts needed $= \dfrac{144}{12} + 1 = 13\ posts.$ Column B : 12 posts.

Clearly Column A is greater than column B.

20. Correct Answer:- A
Explanation:-

Column A $\dfrac{1}{2} * \dfrac{3}{5} * 30 = 9$

Column B $\dfrac{1}{5} * \dfrac{1}{2} * 60 = 6$

So $A > B$

21. Given:
RTM, VZX, ZFI, DLT, ?

In the given series, add 4, 6, and 11 to the first, second, and third letters of the previous term respectively to form the next term.
RTM→R + 4 = V; T + 6 = Z; M + 11 = X→VZX
VZX→V + 4 = Z; Z + 6 = F; X + 11 = I→ZFI
ZFI→Z + 4 = D; F + 6 = L; I + 11 = T→DLT
DLT→D + 4 = H; L + 6 = R; T + 11 = E→HRE

So, HRE is the required term of the given series. Hence, the **first option** is correct.

22. Given:

NAME, NEME, ?, NOME, NUME

N, M, and E are constant in each term and each second letter of the previous term is a vowel (a, e, i, o, u), put these vowels at second place to obtain the next term in the series –

NAME → **A** is a vowel and next is **E**

NEME → **E** is a vowel and next is **I**

NIME → **I** is a vowel and next is **O**

NOME → **O** is a vowel and next is **U**

So, NIME is the missing term in the series. Hence, the **third option** is correct.

23. Given:

5, 10, 17, 26, 37, 50, ?

In the above-given series, add the consecutive odd numbers, starting from 5 to the previous number to get the next number of the series.

5 + 5 = 10; 10 + 7 = 17; 17 + 9 = 26; 26 + 11 = 37; 37 + 13 = 50; 50 + 15 = 65

So, 65 is the missing number of the series. Hence, the **second option** is correct.

24. Given:

ABCD, HGLO, OLUZ, VQDK, ?

Add 7, 5, 9, and 11 to the place values of the first, second, third, and fourth letters of the previous terms to get the next term in the series.

First letter→A + 7 = H; H + 7 = O; O + 7 = V; V + 7 = C

Second letter→B + 5 = G; G + 5 = L; L + 5 = Q; Q + 5 = V

Third letter→C + 9 = L; L + 9 = U; U + 9 = D; D + 9 = M

Fourth letter→D + 11 = O; O + 11 = Z; Z + 11 = K; K + 11 = V

So, CVMV is the missing term of the series. Hence, the **fourth option** is correct.

25. Given:

2, 4, 10, 28, ?, 244

In the above-given series, multiply the previous term by 3 and then subtract 2 from the resultant to get the next term in the series.

(2 × 3) – 2 = 6 – 2 = 4

(4 × 3) – 2 = 12 – 2 = 10

(10 × 3) – 2 = 30 – 2 = 28

(28 × 3) – 2 = 84 – 2 = 82

(82 × 3) – 2 = 246 – 2 = 244

So, 82 is the missing number of the series. Hence, the **fourth option** is correct.

26. Given:

abCD, fgHI, ?, stUV, abCD

Add consecutive natural numbers (starting from 5) to the letters of the previous term to get the next term.

abCD→a + 5 = f; b + 5 = g; C + 5 = H; D + 5 = I→fgHI

fgHI→f + 6 = l; g + 6 = m; H + 6 = N; I + 6 = O→lmNO

lmNO→l + 7 = s; m + 7 = t; N + 7 = U; O + 7 = V→stUV
stUV→s + 8 = a; t + 8 = b; U + 8 = C; V + 8 = D→abCD
So, lmNO is the required term of the given series. Hence, the **second option** is correct.

27. Given:
FOX, ?, JSX, LUX, NWX
Add 2 to the place value of the first and the second letters and the third letter remains the same of the previous term to get the next term of the series.
FOX→F + 2 = H; O + 2 = Q; X→HQX
HQX→H + 2 = J; Q + 2 = S; X→JSX
JSX→J + 2 = L; S + 2 = U; X→LUX
LUX→L + 2 = N; U + 2 = W; X→NWX
So, HQX is the missing term of the series. Hence, the **second option** is correct.

28. Given:
ABCD, BDFD, CFID, ?, EJOD
Add 1, 2, and 3 in the first, second, and third letters, and let the fourth letter remain the same.
ABCD → A + 1 = B; B + 2 = D; C + 3 = F; D + 0 = D
BDFD → B + 1 = C; D + 2 = F; F + 3 = I; D + 0 = D
CFID → C + 1 = D; F + 2 = H; I + 3 = L; D + 0 = D
DHLD → D + 1 = E; H + 2 = J; L + 3 = O; D + 0 = D
So, the missing term is DHLD. Hence, the **fourth option** is correct.

29. Given:
1331, 2197, ?, 6859
Find the cubes of the prime numbers (starting from 11) to obtain the missing term –
1331 = 11³; 2197 = 13³; 4913 = 17³; 6859 = 19³
So, 4913 is the missing term in the series. Hence, the **first option** is correct.

30. Given:
4, 6, 12, 14, 28, 30, ?
Follow the pattern to find the missing term –

So, 60 is the missing term in the series. Hence, the **second option** is correct.

31. Given:
NMRQ, NDZG, NUHW, NLPM, ?
Subtract 9 and 10 from the second and fourth letters and add 8 in the third letter to find the next term –
NMRQ → N + 0 = N; M – 9 = D, R + 8 = Z; Q – 10 = G;

NDZG → N + 0 = N; D – 9 = U, Z + 8 = H; G – 10 = W;
NUHW → N + 0 = N; U – 9 = L, H + 8 = P; W – 10 = M;
NLPM → N + 0 = N; L – 9 = C, P + 8 = X; M – 10 = C
So, the missing term of the series is NCXC. Hence, the **second option** is correct.

32. Given:

DMT, JOB, PQJ, VSR, ?
Add 6, 2, and 8 to the place value of the first, second, and third letters of the previous term to get the next term.
First letter of the series – D + 6 = J; J + 6 = P; P + 6 = V; V + 6 = B
Second letter of the series – M + 2 = O; O + 2 = Q; Q + 2 = S; S + 2 = U
Third letter of the series – T + 8 = B; B + 8 = J; J + 8 = R; R + 8 = Z
So, BUZ is the missing term of the series. Hence, the **third option** is correct.

33. Given:

DW, FU, GT, IR, JQ, ?
Add 2 and 1 alternatively in the first letters and subtract 2 and 1 alternatively in the second letter of each term.
DW; D + 2 = F, W – 2 = U
FU; F + 1 = G, U – 1 = T
GT; G + 2 = I, T – 2 = R
IR; I + 1 = J, R – 1 = Q
JQ; J + 2 = L; Q – 2 = O
So, the required missing term is LO. Hence, the **second option** is correct.

34. Given:

345, 356, 368, 381, 395, ?
In the above-given series, add the increasing order of the numbers, starting from 11 to the previous number to get the next number of the series.
345 + 11 = 356; 356 + 12 = 368; 368 + 13 = 381; 381 + 14 = 395; 395 + 15 = 410
So, 410 is the missing number of the series. Hence, the **fourth option** is correct.

35. Given:

NMQR, NQYD, NUGP, NYOB, ?
Add 0, 4, 8, and 12 in the first, second, third, and fourth letters of the given series.
NMQR: N + 0 = N; M + 4 = Q, Q + 8 = Y, R + 12 = D;
NQYD: N + 0 = N, Q + 4 = U, Y + 8 = G, D + 12 = P;
NUGP: N + 0 = N, U + 4 = Y, G + 8 = O, P + 12 = B;
NYOB: N + 0 = N, Y + 4 = C, O + 8 = W, B + 12 = N
So, the missing term is NCWN. Hence, the **third option** is correct.

36. Given:

111, 222, 444, ?, 1776, 3552

Here, multiply each number by 2 to get the next number.

111 × 2 = 222; 222 × 2 = 444; 444 × 2 = 888; 888 × 2 = 1776; 1776 × 2 = 3552

So, 888 is the missing number in the series. Hence, the **second option** is correct.

37. Given:

PK, GT, XC, OL, ?

Subtract and add 9 alternately to the letters of the previous term to get the next term of the series –

PK → P – 9 = G; K + 9 = T,

GT → G – 9 = X; T + 9 = C,

XC → X – 9 = O; C + 9 = L,

OL → O – 9 = F; L + 9 = U

So, FU is the missing term of the series. Hence, the **fourth option** is correct.

38. Given:

382, 322, 272, 232, 202, ?

Subtract the multiples of 10 (in decreasing order), starting from 60 from the previous number to obtain the following number of the series.

382 – 60 = 322

322 – 50 = 272

272 – 40 = 232

232 – 30 = 202

202 – 20 = 182

So, 182 is the missing number of the series. Hence, the **third option** is correct.

39. Given:

31, ?, 40, 49, 61, 76

Add the consecutive multiples of 3 in the previous term to get the next term.

31 + 3 = 34; 34 + 6 = 40; 40 + 9 = 49; 49 + 12 = 61; 61 + 15 = 76

So, 34 is the missing term in the series. Hence, the **second option** is correct.

40. Given:

ABCD, CTFZ, ELIV, GDLR, ?

Add 2 and 3 to the first and third letters and subtract 8 and 4 from the second and fourth letters of the previous term to obtain the next term in the series –

ABCD → A + 2 = C; B – 8 = T; C + 3 = F; D – 4 = Z

CTFZ → C + 2 = E; T – 8 = L; F + 3 = I; Z – 4 = V

ELIV → E + 2 = G; L – 8 = D; I + 3 = L; V V – 4 = R

GDLR → G + 2 = I; D – 8 = V; L + 3 = O; R – 4 = N

So, IVON is the missing term in the series. Hence, the **fourth option** is correct.

41. Given:

FUEL is coded as 50, and JEER is coded as 44.

Place values of the letters of FUEL; F→6; U→21; E→5; L→12

Add these place values→(6 + 21 + 5 + 12) + 6 = 44 + 6 = 50

So, FUEL is coded as 50.

Place values of the letters of JEER; J→10; E→5; E→5; R→18

Add these place values→(10 + 5 + 5 + 18) + 6 = 38 + 6 = 44

So, JEER is coded as 44.

Similarly, for FARE; F→6; A→1; R→18; E→5

Add these place values→(6 + 1 + 18 + 5) + 6 = 30 + 6 = 36

So, FARE is coded as 36. Hence, the **fourth option** is correct.

42. Given:

BYE is coded as 245 and OLA is coded as 265.

BYE is coded as 245;

Opposite of B is Y(25); Opposite of Y is B(2); Opposite of E is V(22);

Now, add the place value→25 + 2 + 22 = 49

Multiply the sum by 5→49 × 5 = 245

OLA' is coded as '265';

opposite of O is L(12);

opposite of L is O(15);

opposite of A is Z(26);

12 + 15 + 26 = 53;

53 × 5 = 265;

Similarly, 'CAR' will be coded as;

Opposite of C is X(24);

Opposite of A is Z(26);

Opposite of R is I(9);

24 + 26 + 9 = 59;

59× 5 = 295;

Hence, the **third option** is correct.

43. Given:

ADVANCE is written as VDAAECN

BABYSIT is written as BABYTIS

Moving the position of letters as the following pattern –
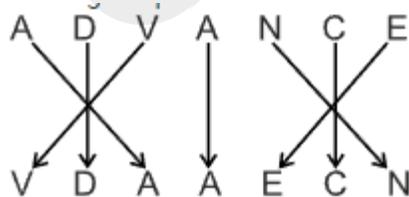
Thus, ADVANCE can be coded as VDAAECN.
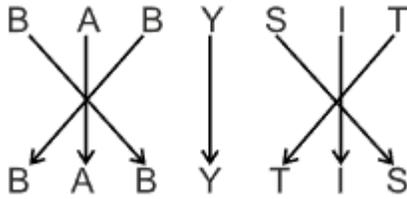
Thus, BABYSIT can be coded as BABYTIS.
Similarly following the same pattern for AFFABLE.
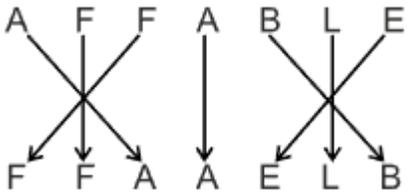
So, AFFABLE can be coded as FFAAELB. Hence, the **second option** is correct.

44. Given:

'NUMERICAL' is written as 'ICALRNUME' ;
NUMERICAL is coded as by writing last four letters at start (ICAL), the middle letter (R) and at last the first four letters are written (NUME).
'SCATTERED' is written as 'EREDTSCAT';
SCATTERED is coded as by writing last four letters at start (ERED), the middle letter (T) and at last the first four letters are written (SCAT).
Similarly, 'EXPLOSION' will be written as;
EXPLOSION is coded as by writing last four letters at start (SION), the middle letter (O) and at last the first four letters are written (EXPL);
SIONOEXPL;
Hence, the **second option** is correct.

45.

HYPOCRISY is written as YPHOCIRYS, and IMPORTANT is written as MPIORATTN.
Follow the pattern to obtain the required code –
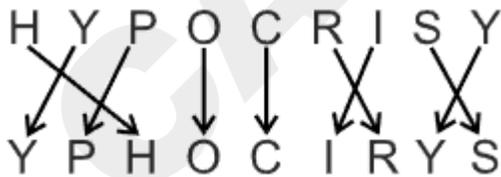
Thus, HYPOCRISY is coded as YPHOCIRYS.
And, IMPORTANT is written as MPIORATTN –

Similarly, follow the same pattern for INTEGRITY –

Thus, INTEGRITY is related to NTIEGIRYT. Hence, the **first option** is correct

46. Given:
CRUST is written as 201921183
BLAME is written as 5131122
Position values of letters is arranged in the reverse order to get the code
Position values of letters of CRUST; C → 3; R → 18; S → 19; T → 20
On reversing the numbers the code will be ⇒ 201921183
Position values of letters of BLAME; B → 2; L → 12; A → 1; M → 13; E → 5
On reversing the numbers the code will be ⇒ 5131122
Likewise, position values of the letters of PLASTIC are: P → 16; L → 12; A → 1; S → 19; T → 20; I → 9; C → 3
On reversing the numbers the code will be ⇒ 39201911216
Thus, PLASTIC is coded as 39201911216. Hence, the **fourth option** is correct.

47.
PSYCHIC is written as YSPCCIH and CITIZEN is written as TICINEZ.
Here, the first and the third letters have been exchanged and the fifth and seventh letters as well.

So, "MAHATMA" is coded as "HAMAAMT"

Hence, the **third option** is correct.

48. Given:

BEHOLD is written as BDEHLO –

Arrange all the letters of BEHOLD in alphabetical order to get the code –

BEHOLD → BDEHLO

Thus, BEHOLD is coded as BDEHLO.

And, INDEED is written as DDEEIN –

INDEED → DDEEIN

Thus, INDEED is coded as DDEEIN.

Similarly, follow the same pattern for COURSE –

COURSE → CEORSU

So, COURSE is written as CEORSU. Hence, the **fourth option** is correct.

49. Given:

(i) T is sitting exactly in the middle of the row.

(ii) Q is sitting to the immediate right and immediate left of P and T, respectively. S is not sitting at the extreme end.
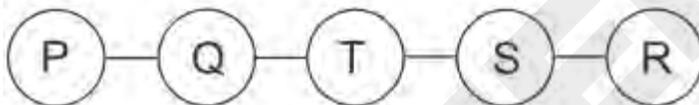
From the final seating arrangement, Q is sitting third to the left of R. Hence, the **second option** is correct.

From the final seating arrangement, Q is sitting third to the left of R. Hence, the second option is correct.

50.

Firstly, we will draw the diagram as per the given instructions –
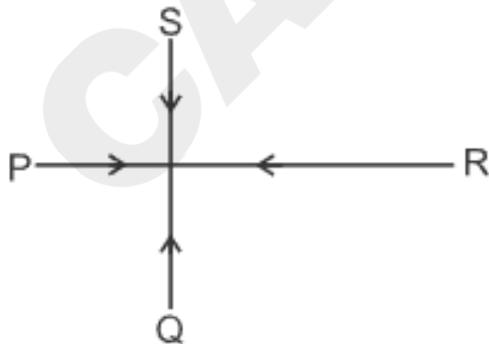
So, Q is facing in the North direction. Hence, the **first option** is correct.

51. Given:

The weights of 4 boxes are 90, 30, 20, and 50 kilograms.

The total weight of all possible combinations of boxes is as follows –

90 + 30 = 120; 90 + 20 = 110; 90 + 50 = 140; 30 + 20 = 50;

30 + 50 = 80; 20 + 50 = 70; 90 + 30 + 20 = 140;

90 + 30 + 50 = 170; 90 + 20 + 50 = 160; 30 + 20 + 50 = 100;

90 + 30 + 20 + 50 = 190

There is no total weight of 150 kilograms in any combination. Hence, the **fourth option** is correct.

52. Given:

Fountain Pen : Waterman :: Telescope : ?

Like, Waterman was the inventor of the Fountain Pen.

Similarly, Galileo is the inventor of the Telescope.

Hence, the **first option** is correct.

53. Given:

Panda : Bamboo : Koala :?

Panda eats Bamboo.

Similarly, Koala eats Eucalyptus.

Therefore, Eucalyptus is the correct answer and the series is as follows –

Panda : Bamboo : Koala : Eucalyptus

Hence, the **third option** is correct.

54. Given:

Acquired : Received→Acquired and Received both are synonyms of each other.

Now, let's check the given options –

First option: Bitter : Sweet; Bitter and Sweet both are antonyms of each other.

Second option: Collected : Distributed; Collected and Distributed are antonyms of each other.

Third option: Arrival : Departure; Arrival and Departure are antonyms of each other.

Fourth option: Short : Small; Short and Smal both are synonyms of each other..

So, only the fourth option depicts the same relation as of the given word pair. Hence, the **fourth option** is correct.

55. Given:

Clear is related to Open.

Confidential is related to ___.

Like in, Clear is related to Open – the synonym of clear is open.

Similarly, the synonym of confidential is secret, meaning something that is not to be shown or told to others.

So, only the fourth option establishes the same relationship with confidential as the given pair. Hence, the **fourth option** is correct.

56. Given:

Hansini : Swan→the female : male is compared

Let's check the options –

First option: Adult : Infant; This is the phase of life of a human.

Second option: Witch : Wizard; Witch is a female magician and Wizard is a male magician.

Third option: Banyan : Tree; Banyan is a type of Tree.

Fourth option: Pig : Piglet; The adult and baby names of the pig.

Only the second option shares the same relation. Hence, the **second option** is correct.

57.

Let's check the options –

First option: $(15 - 220 - 215)→(15)^2 = 225 ≠ 220$

Second option: $(10 - 100 - 95)→(10)^2 = 100; 100 - 5 = 95$

Third option: $(20 - 400 - 39)→(20)^2 = 400; 400 - 5 = 395$

Fourth option: $(25 - 625 - 620)→(25)^2 = 625; 625 - 5 = 620$

So, only the first option does not follow the same pattern as followed by the given set of numbers. Hence, the first option is correct.

58.

Let's check each option –

First option: FDB → F – 2 = D; D – 2 = B

Second option: ZXV → Z – 2 = X; X – 2 = V

Third option: JIG → J – 1 = I; I – 2 = G (The pattern is not being followed)

Fourth option: LJH → L – 2 = J; J – 2 = H

Hence, the **third option** is correct.

59. Given:

The weights of the four boxes are 90, 30, 40, and 60 kilograms.

The total weight of all possible combinations of boxes is as follows –

90 + 30 = 120; 90 + 40 = 130; 90 + 60 = 150; 30 + 40 = 70;

30 + 60 = 90; 40 + 60 = 100; 90 + 30 + 40 = 160;

90 + 30 + 60 = 180; 90 + 40 + 60 = 190; 30 + 40 + 60 = 130;

90 + 30 + 40 + 60 = 220

There is no total weight of 200 kilograms in any combination. Hence, the **first option** is correct.

60.

The possible Venn diagram according to the given statements is as follows –
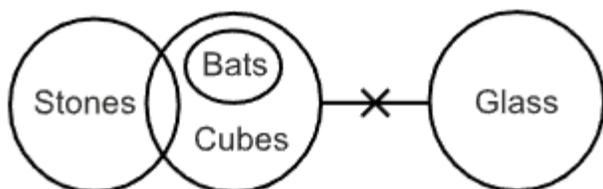
Let's analyze the conclusions –

Conclusion I: Some stones being bats is a possibility – As some stones are cubes and all bats are cubes. So some stones being bats is possible. Therefore, this conclusion follows.
Conclusion II: No bat is a glass – All the bats are cubes and no cube is a glass. So, no bat is a glass. Therefore, this conclusion follows.
Conclusion III: All cubes are bats – From the above diagram, the circle that represents bats lies inside the circle that represents cubes. From this, it can be inferred that some cubes can be bats but all cubes are bats is not definite. Therefore, this conclusion does not follow.
Conclusion IV: No stone is a glass – Based on the given statements and from the above diagram, there is no direct relation between stone and glass. So, no conclusion can be drawn.
So, only conclusion I and II follow. Hence, the **third option** is correct.

61.
mport in 2015-16 = 738
Export in 2015-2016 = 825
Difference between import and export in 2015-16 = 87
Import in 2016-17 = 1200
Export in 2015-2016 = 1014
Difference between import and export in 2016-17 = 86
Import in 2017-18 = 1600
Export in 2017-2018 = 1240
Difference between import and export in 2017-18 = 360
Import in 2018-19 = 1537
Export in 2018-2019 = 1522
Difference between import and export in 2018-19 = 15
Import in 2019-20 = 1310
Export in 2019-2020 = 1650
Difference between import and export in 2015-16 = 340
So, the Year 2018-19 has the minimum required difference.
Hence, the correct answer is 2018-19

62.
Total export of the country = 825 + 1014 + 1240 + 1522 + 1650 = 6251
Total number of years = 5
Average export = Total export / Number of years
Average export = 6251 / 5
Average export = 1250.2
Hence, the answer is Rs. 1250.2 lakhs.

63.
According to the question, 75% of the T-type cars are sold.
Now, if 75% of the T-type cars produced each year were sold by the company, the number of T-type cars remain unsold
= 350000 × (90 – 75)% × (100 – 75)% + 440000 × (95 – 85)% × (100 – 75)%
= 24125
Hence, the correct answer is 24125.

64.

Total number of cars manufactured in 2001 = 4,40,000
Percentage of cars type P manufactured = 40%
Percentage of cars type R manufactured = (75 – 60)% = 15%
Percentage of cars type U manufactured = (100 – 95)% = 5%
So, total required cars produced = 40% + 15% + 5% = 60%
Thus, required number of cars = (60/100) × 440000 = 2,64,000
Hence, the correct answer is 2,64,000.

65.

As in the starting, the man was facing in the south direction. He turns in the anticlockwise direction **(135°)** and then in the clockwise direction **(180°).**
As per the given information, his movement will look as follows –
According to the above diagram, he was finally facing in the **South-west** direction.
Hence, the **second option** is correct.

66.

Considering 1st January 2024 is Monday.
Now, let's calculate the total number of days between the 1st of January, 2024 and the 1st of January, 2033→
2024 to 2032 = 9 × 365 = 3285 + 3 = 3288
(3 days are added as 2024, 2028, and 2032 is a leap year.)
On dividing, 3288 by 7 we get 5 as a remainder.
Monday + 5 days = Saturday
So, the 1st of January, 2033 will be Saturday. Hence, the first option is correct.

67. Given:

Today is Friday. After 55 days.
There are 7 days in a week.
So, after dividing 55 by 7 = 6 as the remainder.
Friday + 6 days = Thursday
Therefore, after 55 days the day will be Thursday. Hence, the **second option** is correct.

68.

Average temperature of the first six days of the month = 41° C
Sum of the temperatures of 6 days = Average temperature × Number of days = 41 × 6 = 246° C
But, the sum of the temperatures of the first five days = 201° C
So, 201 + (temperature of the sixth day) = 246° C
The temperature of the sixth day = 246 – 201 = 45° C
Hence, the **second option** is correct.

69. Given:

(6)³ ÷ 12 + [(√81) x 4] – (28 ÷ 2) + 24 = 43

Interchanging the numbers as given in the options,

First option: 12 and 24

(6)³ ÷ 24 + [(√81) x 4] – (28 ÷ 2) + 12 = 43

⇒ 216 ÷ 24 + (9 x 4) – 14 + 12 = 43

⇒ 216 ÷ 24 + 36 – 14 + 12 = 43

⇒ 9 + 36 – 14 + 12 = 43

⇒ 57 – 14 = 43 = R.H.S

Second option: 6 and 24

(24)³ ÷ 12 + [(√81) x 4] – (28 ÷ 2) + 6 = 43

⇒ 13824 ÷ 12 + (9 x 4) – 14 + 6 = 43

⇒ 13824 ÷ 12 + 36 – 14 + 6 = 43

⇒ 1152 + 36 – 14 + 6 = 43

⇒ 1152 + 36 – 14 + 6 = 43

⇒ 1194 – 14 = 1180 ≠ 43

Third option: 81 and 4

(6)³ ÷ 12 + [(√4) x 81] – (28 ÷ 2) + 24 = 43

⇒ 216 ÷ 12 + (2 x 81) – 14 + 24 = 43

⇒ 216 ÷ 12 + 162 – 14 + 24 = 43

⇒ 18 + 162 – 14 + 24 = 43

⇒ 204 – 14 = 43 = 190 ≠ 43

Fourth option: 28 and 24

(6)³ ÷ 12 + [(√81) x 4] – (24 ÷ 2) + 28 = 43

⇒ 216 ÷ 12 + (9 x 4) – 12 + 28 = 43

⇒ 216 ÷ 12 + 36 – 12 + 28 = 43

⇒ 18 + 36 – 12 + 28 = 43

⇒ 82 – 12 = 70 ≠ 43

Here, only the first option satisfies the R.H.S. of the given equation.

Hence, the **first option** is correct.

70. Given:

The ratio of the present ages of Aman and Ankit is 2 : 1.

Let Aman's present age be 2y and Ankit's present age be y.

The sum of their present ages is 72 years.

⇒ 2y + y = 72

⇒ 3y = 72

⇒ y = 24

Aman's present age = 2 × 24 = 48 years

Aman's age after 6 years = 48 + 6 = 54 years. Hence, the **fourth option** is correct.

71. Given:

Total number of students = 50

Number of students who play hockey = 25

Number of students who play football = 30

Number of students who play neither sport = 8

Let the number of students that participate in both football and hockey = a.

$\Rightarrow$ 50 = 25 + 30 – a + 8

$\Rightarrow$ 50 = 55 – a + 8

$\Rightarrow$ a = 55 + 8 – 50

$\Rightarrow$ a = 63 – 50 = 13

So, 13 students play both football and hockey. Hence, the **fourth option** is correct.

72.

Let the three consecutive numbers be a, (a + 1), and (a + 2).

As per the question, the sum of the three consecutive numbers is 15, then –

$\Rightarrow$ a + a + 1 + a + 2 = 15

$\Rightarrow$ 3a + 3 = 15

$\Rightarrow$ 3a = 15 – 3

$\Rightarrow$ 3a = 12

$\Rightarrow$ a = 12 ÷ 3 = 4

Thus, the value of the middle number = (a + 1) = 4 + 1 = 5, and $(5)^2$ = 25

So, 25 is the required answer. Hence, the **second option** is correct.

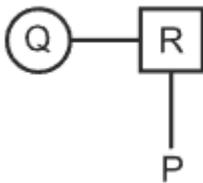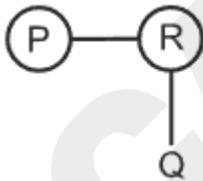**73.**
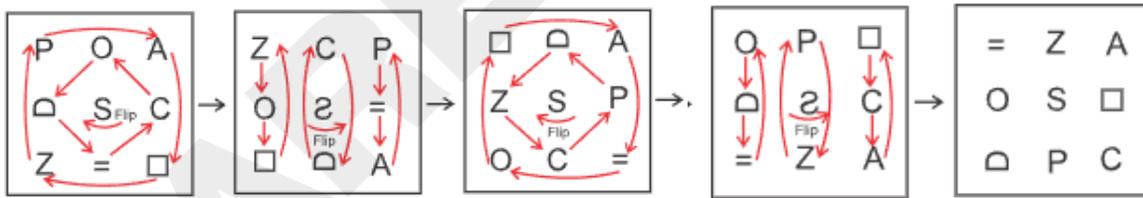
Hence, the first option is correct.

74.

Following the instructions of the question, the family tree will be –
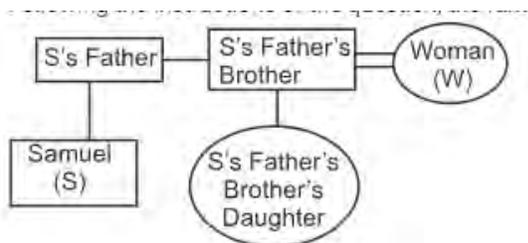
Here, the quadrilateral represents the male and the circular figure represents the female in the figure.So, Samuel is Husband's brother's son. Hence, the fourth option is correct.

75. Given:

A − B ⇒ A is the mother of B

A + B ⇒ A is the father of B

A ÷ B ⇒ A is the sister of B

Let's check each option –

First option: P + R ÷ Q

As per the given information, the family tree will be as follows –
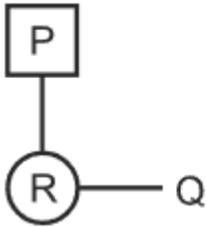
Here, the quadrilateral represents the male and the circular figure represents the female in the figure. So, P is the father of Q.

Second option: Q ÷ R + P

As per the given information, the family tree will be as follows –

Here, the quadrilateral represents the male and the circular figure represents the female in the figure. So, P is the niece or nephew of Q.

Third option: P ÷ R − Q

As per the given information, the family tree will be as follows –

Here, the quadrilateral represents the male and the circular figure represents the female in the figure. So, P is the aunt of Q.

Fourth option: R ÷ P − Q

As per the given information, the family tree will be as follows –
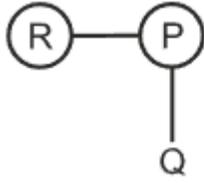
Here, the quadrilateral represents the male and the circular figure represents the female in the figure. So, P is the mother of Q.

So, only in the third option P is the aunt of Q. Hence, the **third option** is correct.

76.

The correct answer is the **second option.**

It means having the ability to think about or plan the future with imagination or wisdom. This word fits well in the context of praising leadership that is forward-thinking, innovative, and strategic.
The meanings of other options are as follows:

- **Imaginary:** Existing only in the imagination; not real.
- **Magical:** Related to magic or producing extraordinary results.
- **Broad:** Wide in scope or extent; not specific.

Therefore, the complete sentence is "Ram was praised for his visionary leadership."

77.

The correct answer is the **third option.**

In this context, **"looking for"** is the correct phrase to convey the idea of searching for his book.
The preposition **"for"** is used with the verb **"looking"** to indicate the purpose or direction of the action whereas "looking into" means to investigate.
Therefore, the sentence should be "He was **looking for his book** for the last two hours but couldn't find it."

78.

The correct answer is the **second option.**

The idiom **"all eyes"** typically means that everyone is watching or paying close attention to something with great interest or eagerness. It implies a collective focus or scrutiny on a particular event, person, or situation.

79.

The **first option** is correct.

The word "floats" is the most appropriate antonym for "sinks".

Explanation: In the context of the sentence, "floats" is the opposite of "sinks". While "sinks" implies descending or going down, "floats" suggests remaining on the surface or staying afloat. The antonym relationship between "sinks" and "floats" is based on the contrasting actions of sinking and floating.

- Create: To bring something into existence or to produce.
- Parade: A parade is a public procession, often including a series of floats or other elaborate displays.
- Strolling: Refers to walking leisurely, often for pleasure.

80.

The most appropriate antonym for the underlined word "uniform" in the given sentence is:
Diversity

So, the sentence with the antonym would be: "Regardless of their diversity, all flowers have a uniform function, the reproduction of the species through the production of seed."

81.

The correct choice is the **first option.**
Polite means having or showing behaviour that is respectful and considerate of other people.
Rude means ill-mannered or offensive in manner or action, making this the correct antonym of "polite".
The meanings of the other options are as follows:

- Civil means courteous and polite, which makes it a synonym.
- Decent means socially accepted and moral behaviour.
- Sober means thoughtful or sensible.

82.

The correct choice is the second option. The idiom close the deal means to negotiate or close the matter successfully.
So, the correct sentence is: The contingent managed to **close the deal** successfully.

83.

The correct choice is the fourth option.
The word powerful means having a lot of force to generate a significant amount of energy to run the means of transport,

84.

The **second option** is the correct answer.
"Purportedly" means supposedly or allegedly, indicating a claim that may not be proven. On the other hand, "impossibly" means in a way that is not possible or cannot be done.
The meanings of other options are as follows:

- **Maliciously** means with harmful intent or ill will.
- **Dramatically** means in a striking or impressive manner.
- **Severely** means harshly or extremely.

Therefore, the correct answer is **impossibly.**

85.

The **second option** is the correct choice.
The word, **declined,** in the given context means that the person refused or turned down the offer to join the Board of Directors. On the other hand, **rejected** is a suitable synonym, indicating a similar action of not accepting or dismissing an offer.
The meanings of the other options are as follows:

- **Delayed** means postponed or made to occur later than originally planned.
- **Modified** means altered or changed in some way.
- **Deferred** means postponed or delayed.

86.

The **fourth option** is the correct choice.

Incoherent describes something that lacks logical consistency, while rational denotes clarity and logical reasoning, making them antonyms in this context.

The meanings of the other options are as follows:

- **Gloomy** means dark, dim, or pessimistic in outlook.
- **Apparent** means clearly visible, understood, or obvious.
- **Pensive** means engaged in deep thought or contemplation.

87.

The **fourth option** is the correct choice.

A **detailed description** means a thorough explanation or account of something, including its intricacies and nuances. This aligns with the context of understanding the operating systems of the institution, making it the most suitable choice.

The meanings of the other options are as follows:

- **Stern regulations** mean strict rules or guidelines.
- **Prior conditions** mean preconditions or prerequisites.
- **Elaborate theories** mean complex and detailed explanations.

88.

The **first option** is the correct choice.

This idiom emphasises the importance of gradual and consistent effort, suggesting that taking one's time and proceeding at a steady pace is more effective in achieving long-term success. So, **slow and steady** is the appropriate idiom in this context.

The meanings of the other options are as follows:

- **Making a habit** is to develop a routine or regular practice.
- **Ins and outs** refer to the details or intricacies of a subject.
- **Do's and don'ts refer** to a list of things that one should and shouldn't do in a particular situation.

89.

The **fourth option** is the correct choice.

A **catalogue** is a list or collection of books, documents, or other items, often with descriptive details. In this context, the word, **catalogue** serves as a one-word substitute for the given group of words.

The meanings of the other options are as follows:

- A **bale** is a large bundle of paper, hay, cotton, etc., tightly bound.
- **Hamlet** is a small village or community.
- A **gallery** is a room or building for the display or sale of works of art.

90.

The **fourth option** is the correct answer.

"Guile" refers to the quality of being cunning, deceitful, or sly. It implies a clever, deceitful manner or the intent to deceive without overtly showing it. **"Deceit,"** on the other hand, directly means the action or practice of deceiving someone by concealing or misrepresenting the truth.

The meanings of the other options are as follows:

- **Morality** means principles concerning the distinction between right and wrong behaviour.
- **Pride** is a feeling of deep pleasure or satisfaction derived from one's own achievements.
- **Greed** means an intense and selfish desire for something.

Therefore, the correct answer is **deceit**.

91.

The correct choice is the **fourth option.**

Explanation:

"In order that" is not the appropriate phrase here. "In order to" is used to express purpose or intention, showing why Kranthi loves to swim—in this case, to alleviate or reduce his work stress. Therefore, the phrase "to relieve" is a suitable substitution.

Therefore, the correct sentence is: Kranthi loves to swim at the local swimming pool in order to relieve his work stress.

92.

The correct choice is the **fourth option.**

The original sentence, **"The students decided to surprise their teacher on her birthday,"** is grammatically correct and conveys the intended meaning. It implies that the students planned to surprise the teacher on her birthday.

Therefore, the given sentence needs **no substitution.**

93.

The correct choice is the **second option.**

Explanation:

The sentence is **accurate** both grammatically and in terms of **spelling.** Each word is spelled correctly, conveying the intended meaning that diabetes is a chronic medical condition.

Therefore, the correct answer is: "Diabetes is a chronic disease."

94.

The right option is the **third option.**

The sentence contains an error in the segment "**has being**." The correction involves using the correct form of the verb "to be" in the past participle tense. Instead of "has being," it should be "**has been**."

Explanation:

- "Has been" is the correct past participle form of the verb "to be" used in the present perfect tense.
- The corrected sentence would be: "The audience has been angry as the magician is not performing as expected."

So, the corrected sentence would be, "The audience **has been** angry as the magician is not performing as expected."

95.
The **fourth option** is the correct answer.
The original sentence is grammatically correct and conveys the intended meaning effectively that the speaker is putting in effort to secure a satisfactory or reasonable financial situation.

96.
The correct option is **the first option.**
Explanation: The conjunction "consequently" should be followed by a clause or phrase that logically results from the previous statement. In this context, the correct word to fill in the blank is an adjective that describes the relationship between the sides when the angles are equal. The appropriate adjective is "**equal**".
Therefore, the correct sentence would be: "The angles are equal, consequently the sides are **equal.**"

97.
The correct choice is the **first option**, i.e., **flock**.
- **Flock**: A group of birds, typically of the same species, that fly, move, or feed together.
- **Litter**: A group of young animals born to the same mother at the same time, such as a litter of puppies or kittens.
- **Pack**: A group of wild animals, often predators, that hunt or travel together as a social unit, like a pack of wolves.
- **Streak**: A rapid and continuous movement of a group of animals, such as a streak of tigers, running closely together in a line.

Therefore, the correct answer is, "As cattle are to herd, so are birds to **flock**."

98.
The correct choice is the **third option**, i.e., **dose, doze.**
Explanation: In this sentence, "**dose**" is the correct term for a measured quantity of medicine, and "**doze**" is the correct term for the patient beginning to fall asleep or become drowsy. The sentence conveys that the patient took a dose of medicine and then started to doze or fall asleep.
So, the correct sentence is: "Soon after the doctor gave her the next **dose** of the medicine, the patient began to **doze**."

99.
The expression "cool their heels" is an idiom that means to wait patiently or to endure a period of waiting. In the given sentence, it suggests that the interviewees were getting impatient while waiting for a long time in the waiting room. The other options ("draw the long bow," "hold water," and "flog a dead horse") are unrelated idioms and do not convey the intended meaning of waiting or impatience in this context.

100.
The most appropriate option to fill in the blank is "Revolving." The sentence would read:
"The planets are revolving around the sun."
While "circling" and "rotating" could also be used to describe the motion of planets, "revolving" specifically refers to the orbiting movement around a central point, which fits well in the context of planets orbiting the sun. "Rounding" is not a suitable option in this context.

101.
The most appropriate option to fill in the blank is "keep a secret." The sentence would read:
"It is very difficult for her to keep a secret."
This expression is commonly used to convey the idea that someone finds it challenging to maintain confidentiality or not reveal information entrusted to them. The other options do not convey the intended meaning of secrecy or confidentiality.

102.
The most appropriate option to fill in the blank is "Discharged." The sentence would read:
"The patient was discharged from the hospital."
While "released" could also be used in this context, "discharged" is a more common term when referring to a patient leaving a hospital after treatment. "Liberated" and "let out" are less suitable options in the context of a hospital discharge.

103.
The most appropriate option to fill in the blank is "make progress." The sentence would read:
"If you try to do something every day, you will make progress."
This phrase is commonly used to convey the idea that consistent effort or action over time leads to positive advancement or improvement. The other options are less suitable in this context.

104.
The most appropriate option to fill in the blank is "alternative." The sentence would read:
"The doctor directed the nurse to administer an alternative medicine to the patient."
This suggests that the doctor is prescribing a different or substitute medicine, often when the standard or conventional treatment may not be suitable. The other options ("official," "eminent," and "insightful") do not convey the sense of providing a substitute or different medicine.

105.
The most appropriate collocating word to fill in the blank is "quit." The sentence would read:
"After having understood the ill effects, he said he would quit drinking alcohol."
"Quit" is commonly used in the context of stopping or giving up a habit, such as quitting smoking or quitting drinking. The other options ("finish," "close," and "terminate") are not as fitting in this context.

106.
The most appropriate option to fill in the blank is "risk." The sentence would read:
"Although I have a good job, I wish to take the risk of starting my own business."

This implies a willingness to face uncertainty or potential challenges in pursuit of a new venture. The other options ("back," "seat," and "look") do not convey the sense of embracing uncertainty or venturing into a new business opportunity.

107.
The most appropriate synonym for the bracketed word "modern" to fill in the blank is "new." The sentence would read:
"For Rahul, everything was a new experience until he stepped onto the field."
While "flashy," "global," and "Asiatic" might be associated with modernity in certain contexts, "new" is the closest synonym to "modern" in the given sentence, conveying a sense of freshness or contemporary experience.

108.
The most appropriate option to complete the collocation in this context is "trouble." The sentence would read:
"Every time my boss comes up with some good idea, he gets into trouble."
This suggests that the boss encounters difficulties or problems related to the ideas he presents. The other options ("fun," "sleep," and "shock") do not fit the collocation in the given sentence.

109.
The most appropriate option to fill in the blank is "close the deal." The sentence would read:
"The contingent managed to close the deal successfully."
This expression is commonly used in business contexts to indicate the successful completion or finalization of a transaction or agreement. The other options do not convey the intended meaning of successfully completing a deal.

110.
The most appropriate option to fill in the blank is "wry face." The sentence would read:
"The little boy demanded colorful balloons, and ribbons in the village fair. When the father didn't pay heed to his demands, the boy made a wry face."
A "wry face" implies a facial expression that conveys displeasure or disappointment, which fits the context of the boy not getting what he wants. The other options do not convey the appropriate meaning in this context.

111.
Correct Option: D) Eager
Explanation: The passage mentions that the curious teenager reached out, expressing bewilderment and seeking guidance. The use of words like "beseeching" and the author's reflection on the abyss of knowledge suggests that the teenager was eager to learn.

112.
Correct Option: B) Humbled
Explanation: The author reflects on feeling humbled rather than flattered by the implied acknowledgement of coding expertise. This indicates that the teenager's trust in the author's coding knowledge made the author feel humble.

113.
Correct Option: D) Abyss
Explanation: The passage compares the author's coding knowledge to an abyss, emphasizing the vastness and unexplored nature of the coding languages and frameworks that the author has yet to explore.

114.
Correct Option: D) Expertise
Explanation: The passage suggests that the author does not take their coding skills for granted but recognises their expertise. The term "custodian of an expansive unknown" implies a sense of responsibility and proficiency.

115.
Correct Option: B) Unexplored
Explanation: The phrase "colossal, uncharted territories" indicates that the author considers the areas of programming mentioned as unexplored or not yet ventured into, supporting the choice of "Unexplored."

116.
Correct Option: B) Cozy and comfortable
Explanation: The passage describes the bookstore as having creaking wooden floors and shelves filled with books, creating a feeling of coziness. The word "cozy" implies a warm and comfortable atmosphere.

117.
Correct Option: B) Stories
Explanation: The passage mentions that the owner of the bookstore is a friendly person who loves stories. This is evident in the line "The owner, a friendly old person who loved stories."

118.
Correct Option: B) Scent of old paper and ink
Explanation: The passage states that the air in the bookstore smells like old paper and ink, creating a special atmosphere. This sensory experience is described as a unique feature of the place.

119.
Correct Option: B) Casts warm hues

Explanation: The passage mentions that as the sun shines through colorful windows, students gather to talk about books. The phrase "casts warm hues" indicates that the sunlight contributes to a warm and pleasant atmosphere in the bookstore.

120.
Correct Option: B) A peaceful place
Explanation: The passage highlights that the bookstore serves as a calm place for the town's people to escape their busy lives. The word "peaceful" implies a serene and quiet environment, offering a refuge from the hustle and bustle of daily life.

121.
Correct Option: B) They were participating in the annual treasure hunt.
The passage mentions that the children in the bustling village gathered for the annual treasure hunt, creating an atmosphere of excitement in the village square.

122.
Correct Option: C) Eyed the children curiously.
While the children were engrossed in deciphering clues, the mischievous cat Whiskers roamed the square and eyed the children curiously, showing curiosity about the ongoing festivities.

123.
Correct Option: C) Whiskers pounced on fallen leaves and chased imaginary foes.
Whiskers unintentionally became a part of the treasure hunt by playfully pouncing on fallen leaves and chasing imaginary foes, adding an unexpected element to the children's adventure.

124.
Correct Option: C) Whiskers was perceived as disrupting the event.
An adult scolded Whiskers during the treasure hunt because the cat, in its playful actions, was perceived as disrupting the event, although it was unintentional.

125.
Correct Option: C) Whiskers slinked away, leaving the children to resume their quest.
As a result of the scolding, Whiskers felt unjustly scolded and slinked away, leaving the children to continue their treasure hunt without the unintended participant.

126.
Correct Option: B) Collecting pebbles by the stream.
Explanation: The passage mentions that Lily's favourite pastime in the woods was collecting pebbles by the bubbling stream.

127.
Correct Option: C) Forgotten treasures.
Explanation: Lily found a mysterious box in the attic, and upon opening it, she revealed a trove of forgotten treasures, including old photographs, faded letters, and a dusty journal.

128.
Correct Option: A) Sad
Explanation: An antonym for "cheerful" is "sad." In the passage, Lily is described as cheerful, meaning happy and joyful.

129.
Correct Option: B) Walked slowly
Explanation: The term "ambled" means to walk slowly or leisurely. In the sentence "as she ambled through the forest," it suggests that Lily was walking at a relaxed pace.

130.
Correct Option: B) Interested
Explanation: A synonym for "intrigued" is "interested." In the sentence "Intrigued, she opened it to reveal a trove of forgotten treasures," it indicates that Lily was interested and curious about the mysterious box she found in the attic.

131.
Correct Option: B) To prioritize and understand the email's purpose quickly
Explanation: Clear and concise subject lines help recipients prioritize and quickly understand the purpose of the email, facilitating effective communication.

132.
Correct Option: C) To acknowledge receipt and prioritize effective communication
Explanation: Timely responses show acknowledgment and prioritize effective communication, demonstrating respect for others' time and maintaining professionalism.

133.
Correct Option: C) Understanding the audience's needs, preferences, and knowledge levels
Explanation: The Audience-Centered Approach emphasizes tailoring presentations based on a thorough understanding of the audience's needs, preferences, and knowledge levels.

134.
Correct Option: B) It emphasizes the interactive and dynamic nature of communication during negotiations
Explanation: The Transactional Model of Communication aligns with negotiation processes by highlighting the interactive and dynamic nature of communication in negotiation settings.

135.
Correct Option: B) How individuals assign meanings to symbols, ensuring shared understanding
Explanation: Symbolic Interactionism explains how individuals assign meanings to symbols, ensuring shared understanding and effective communication in the business context.

136.
Correct Option: C) Conceptual Clarity
Explanation: Emphasizing the importance of clear and consistent conceptualization in business terminology, Conceptual Clarity ensures shared understanding among individuals using business terms.

137.
Correct Option: B) Agreement or understanding
Explanation: In a business context, the phrase "On the same page" signifies agreement or understanding among team members regarding a particular topic or project.

138.
CPU (Central Processing Unit)
Explanation: CPU stands for Central Processing Unit, which is the primary component of a computer responsible for performing calculations and executing instructions.

139.
RAM (Random Access Memory)
Explanation: RAM is used for temporary storage of data and machine code, providing fast access for the CPU during program execution.

140.
GPU (Graphics Processing Unit)
Explanation: GPU stands for Graphics Processing Unit, a specialized processor designed to handle tasks related to rendering graphics and images, relieving the CPU of this workload.

141.
OS (Operating System)
Explanation: OS stands for Operating System, a software that manages computer hardware resources and provides common services for computer programs.

142.
HDD (Hard Disk Drive)
Explanation: HDD is a non-volatile storage device used for long-term data retention, providing a large storage capacity for files and programs.

143.
HTTPS (Hypertext Transfer Protocol Secure)
Explanation: HTTPS is an encrypted version of HTTP, providing a secure way to transfer data over the internet, often used for secure transactions.

144.
API (Application Programming Interface)

Explanation: API stands for Application Programming Interface, which is a set of protocols and tools for building software applications, allowing them to communicate and interact with each other.

145.
CRUD (Create, Read, Update, Delete)
Explanation: CRUD represents the basic functions of persistent storage in databases—Create, Read, Update, and Delete—encompassing the fundamental operations for managing data.

146.
$\tan^2(\theta) + \cot^2(\theta) - \sec^2(\theta)\,\mathrm{cosec}^2(\theta)$
$= \sin^2(\theta)/\cos^2(\theta) + \cos^2(\theta)/\sin^2(\theta) - 1/(\sin^2(\theta)\cos^2(\theta))$
$= (\sin^4(\theta) + \cos^4(\theta) - 1)/(\sin^2(\theta)\cos^2(\theta))$
$= ((\sin^2(\theta) + \cos^2(\theta))^2 - 2\sin^2(\theta)\cos^2(\theta) - 1)/(\sin^2(\theta)\cos^2(\theta))$
$= (1 - 2\sin^2(\theta)\cos^2(\theta) - 1)/(\sin^2(\theta)\cos^2(\theta))$
$= -2$
Hence, the correct answer is -2

147.
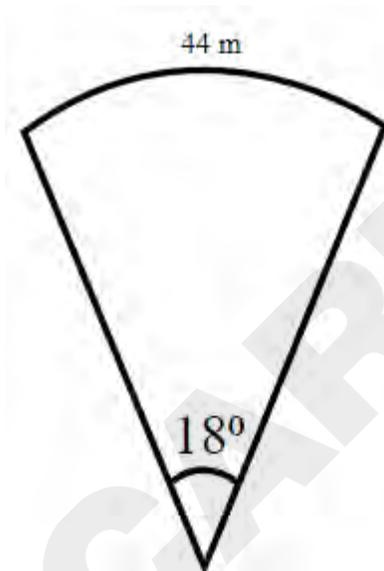
Let the length of the tree be l metres.
According to the question,
$2\pi l \times (18°/360°) = 44$
$\Rightarrow (44l/7) \times (1/20) = 44$
$\Rightarrow l = 140$ metres
Hence, the correct answer is 140 metres.

148.
Given: The two numbers are in the ratio 6 : 5.
Their HCF is 3.
Let the numbers be 6x and 5x
HCF(6x, 5x) = x
So, x = 3
The numbers are 18 and 15.
LCM(18, 15) = 90
Hence, the correct answer is 90.

149.
Let the HCF be a.
We know that,
HCF × LCM = Product of two numbers
$\Rightarrow$ 48 × a = 384
$\Rightarrow$ a = 384/48
$\Rightarrow$ a = 8
Therefore, HCF : LCM = 8 : 48
= 1 : 6
Hence, the correct answer is 1 : 6.

150.
Given: a 7-digit number 54p3987 is divisible by 11
$\Rightarrow$ 5 + p + 9 + 7 – 4 – 3 – 8 = 0 or multiple of 11
$\Rightarrow$ 21 + p – 15 = 0 or multiple of 11
$\Rightarrow$ 6 + p = 0 or multiple of 11
For p = 5, we get 11
$\Rightarrow$ p = 5
Hence, the correct answer is 5.

151.
Divisibility rule for 11 = difference in the sum of digits at even places and odd places is divisible by 11.
Given number = 6788934a4
Sum of digits at odd places = 6 + 8 + 9 + 4 + 4 = 31
Sum of digits at even places = 7 + 8 + 3 + a = 18 + a
Now, 31 – (18 + a) should be divisible by 11.
i.e., 13 – a should be divisible by 11 which is possible when the value of a is 2.
Hence, the correct answer is 2.

152.
Given: Number = 148109326
The last three digits of the given number are 326.

When 326 is divided by 8 gives a remainder of 6.
So, 148109326 – 6 = 148109320 is completely divisible by 8.
So, the smallest required number is 6.
Hence, the correct answer is 6.

153.
Given: 80.40 ÷ 20 - (-4.02) + 2.06
= 80.40/20 + 4.02 + 2.06
= 4.02 + 4.02 + 2.06
= 10.1
Hence, the correct answer is 10.1.

154.
120 ÷ 15 of 4 + [11 × 4 ÷ 4 of {4 × 2 – (8 – 11)}]
= 120 ÷ 15 of 4 + [11 × 4 ÷ 4 of {4 × 2 + 3}]
= 120 ÷ 15 of 4 + [11 × 4 ÷ 4 of {8 + 3}]
= 120 ÷ 15 of 4 + [11 × 4 ÷ 4 of 11]
= 120 ÷ 15 of 4 + [11 × 4 ÷ 44]
= 120 ÷ 15 of 4 + [11 × $\frac{1}{11}$]
= 120 ÷ 15 of 4 + 1
= 120 ÷ 60 + 1
= 2 + 1
= 3
Hence, the correct answer is 3.

155.
Given, HCF = 9
Therefore, First number = 14 × 9 = 126
Also, Second number = 19 × 9 = 171
⇒ LCM of 126 and 171 = 9 × 14 × 19 = 2394
Hence, the correct answer is 2394.

156.
98 = 2 × 7 × 7
175 = 5 × 5 × 7
210 = 2 × 3 × 5 × 7
The common prime factor is 7.
So, the HCF = 7
Hence, the correct answer is 7.

157.
We have,
The HCF of two numbers = 21
and The LCM of two numbers = 840

One number = 49

Let the other number be x

We know the product of two numbers = HCF × LCM

⇒ 49x = 21 × 840

⇒ x = (21 × 840) / 49 = 360

Hence, the correct answer is 360.

158.

Given: The ratio of expenditure to savings of a woman is 5 : 1. Her income and expenditure are increased by 10% and 20%, respectively.

Let the initial expenditure and savings be 500 units and 100 units respectively.

So, the initial income = 500 + 100 = 600 units

After her income and expenditure are increased by 10% and 20%, respectively

The new income = 600 × (110/100) = 660 units

and the new expenditure = 500 × (120/100) = 600 units

So, the new savings = 660 – 600 = 60 units

Therefore, the percentage change in her savings = (100-60)/100 × 100 = 40%

Hence, the correct answer is 40%.

159.

Let the length and breadth be l and b

Original area = lb

Length after 8% increase = 1.08l

Breadth after 5% increase = 1.05b

New area = 1.08l × 1.05b = 1.134lb

Percentage increase in area = (1.134lb - lb)/lb × 100

= 13.4%

Hence, the correct answer is 13.4%.

160.

Let the initial price of the scooter be 100.

After successive increment of 10%, 5%, and 15% = 100 × (110/100) × (105/100) × (115/100)

= 100 × (11/10) × (21/20) × (23/20)

= (11 × 21 × 23)/40

= 5313/40

Difference = Price after increment – initial price

= 5313/40 - 100

= (5313 - 4000)/40

= 1313/40

Percentage increased = (Difference / Initial price) × 100

= (1313/40) / 100 × 100

= 1313/40

= 32 33/40 %

Hence, the correct answer is 32 33/40 %.

161.

Let the salary of the man be 100a

So, expenditure = 100a × 60% = 60a

Savings = 100a – 60a = 40a

Now, his new salary = 100a × (130/100) × (160/100) = 208a

His new savings = 40a + 40a × 250% = 140a

Expenditure = 208a – 140a = 68a

Required percentage = (68a / 208a) × 100

= 32.69 ~ 32.7%

Hence, the correct answer is 32.7%.

162.

Let the bigger number be x.

Smaller number = 680 - x

According to the question,

x(1 - 15%) = (680 - x)(1 + 15%)

$\Rightarrow$ x/(680 - x) = 23/17

$\Rightarrow$ 17x = 23 × 680 - 23x

$\Rightarrow$ 40x = 23 × 680

$\Rightarrow$ x = 23 × 17

$\Rightarrow$ x = 391

So, the smaller number = 680 – 391 = 289

Hence, the correct answer is 289

163.

Percentage Donated = (Amount Donated / Total Income) × 100

First, let's calculate the total expenses:

Total Expenses = Household items + LIC and mutual funds + Children's education + Miscellaneous expenses

= Rs. 12,000 + Rs. 14,000 + Rs. 15,000 + Rs. 10,000 = Rs. 51,000

Amount Donated = Total Income – Total Expenses – Savings

Amount Donated = Rs. 75,000 – Rs. 51,000 – Rs. 21,000 = Rs. 3,000

Now, you can calculate the percentage donated:

Percentage Donated = (3,000 / 75,000) × 100 = (1 / 25) × 100 = 4%

Hence, the correct answer is 4%.

164.

Single discount of 30% on INR 3840 = (30/100) × 3840

= 1152

Successive discount of 25% and 5% on INR 3840 = (25 + 5 - (25 × 5)/100) × 3840

= (28.75/100) × 3840

= 1104

The difference in discount = 1152 – 1104 = 48
Hence, the correct answer is INR 48.

165. Given,
450 men can finish the construction of an apartment in 20 days
Let the efficiency of each man be M.
Total work = Number of workers × Efficiency of each worker × Number of days required
⇒ Total work = 450 × M × 20 = 9,000M
⇒ The number of men required to complete the task in 30 days = 9000M / (M × 30)
⇒ 300
Hence, the correct answer is 300

166.
Person A can sanitize a building in 6 hrs.
Person B can sanitize a building in 10 hrs.
Total work = Efficiency × Time
Let the total work = LCM of 6 and 10 = 30 units
Efficiency of A = 30/6 = 5 units
Efficiency of B = 30/10 = 3 units
According to the question,
(5+3) = 8 units of work done in 2 hours
So, in 6 hours work done = 8 × (6/2) = 24 units
Till the 7th hour, work completed = 24 + 5 = 29 units
Remaining work = 30 – 29 = 1 unit
1 unit of work is completed by B in 1/3 hour
Total time taken to complete the total work = 7 1/3 hours
Hence, the correct answer is 7 1/3 hours.

167.
Speed of the policeman = 15 m/s
Speed of the snatcher = 5 m/s
Relative speed of policeman with respect to snatcher = (15 – 5) m/s = 10 m/s
Distance the policeman has to cover = 500 m
Now, Time by which snatcher is caught, t = Distance / Relative Speed
⇒ t = 500 / 10
⇒ t = 50 seconds
Distance covered by snatcher = Speed of snatcher × t = 5 × 50 = 250 m
Hence, the correct answer is 250 m.

168.
In 1500 m race, Anil beats Bakul by 150 m.
When Anil completes the race, Bakul covers 1500 – 150 = 1350 m
Bakul beats Charles by 75 m in 1500 m race.

So in a 1350 m race, Bakul is ahead of Charles by $\frac{75}{1500}\times 1350=67.5$ m

So, Anil beats Charles by (150 + 67.5) = 217.5 m

Hence, the correct answer is 217.5 m.

169.

Given: Time taken for upstream = 18 hours

Time taken for downstream = 9 hours

LCM of 9 and 18 is 18.

Let the distance be 18 km.

Downstream speed = Distance / Time = 18 / 9 = 2 km/hr

Upstream speed = Distance / Time = 18 / 18 = 1 km/hr

Speed of the boat in still water = (1 + 2) / 2 = 1.5 km/hr

Now, 3/5th of 18 km = (3/5) × 18 = 54/5 km

Thus, the boat can row 54/5 km with a speed of 1.5 km/hr = (54/5) / 1.5 = 54/7.5 = 7.2 hours

Hence, the correct answer is 7.2 hours.

170.

Let the speed of the slower train be "x" km/hr. Since the speed of the first train is 4 km/hr more than the second train, its speed is "x + 4" km/hr.

Distance = Speed × Time

For the first train (the faster one), the distance is (x + 4) km/hr × 10 hours = 10(x + 4) km.

For the second train (slower one), the distance is x km/hr × 10 hours = 10x km

⇒ 10(x + 4) + 10x = 400

⇒ 10x + 40 + 10x = 400

⇒ 20x = 360

⇒ x = 18

Hence, the correct answer is 18 km/hr.

171.

To find: Mean proportion of 1.6 and 3.6.

Mean proportion = √(ab)

= √(1.6 × 3.6)

= 2.4

Now, the third proportion of 5 and 8.

Third proportion = b² / a

= 8² / 5

= 64/5

Ratio of mean proportion to third proportion = 2.4 : (64/5)

= 12 : 64

= 3 : 16.

Hence, the correct answer is 3 : 16.

172.
Let the present age of the father be 7x years, and the present age of the son be 2x years.
After 10 years, the father's age will be 7x + 10, and the son's age will be 2x + 10.
According to the question,
After 10 years, the ratio of their ages will be 9: 4.
Therefore, (7x + 10) / (2x + 10) = 9/4
⇒ 4(7x + 10) = 9(2x + 10)
⇒ 28x + 40 = 18x + 90
⇒ 28x - 18x + 40 = 90
⇒ 10x + 40 = 90
⇒ 10x = 90 - 40
⇒ 10x = 50
⇒ x = 5
So, the present age of the father is 7x = 7 × 5 = 35 years.
Hence, the correct answer is 35 years.

173.
Left Quantity = Initial Quantity(1 – [Fraction removed])^N (Where N = Number of times the process is carried out)
Fraction of milk removed = 5/25 = 1/5
Now, the quantity of milk left in the container
= 25(1 - 1/5)^3
= 25 × (4/5)^3
= 25 × 64/125
= 12.8 litre
∴ There are 12.8 liters of milk left in the container.
Hence, the correct answer is 12.8 liter.

174.
Given, The batting average for 27 innings of a cricket player is 47 runs
And, The batting average for 25 innings is 42 runs (High and low scores excluded)
Also, His highest score (H) in an innings exceeds his lowest score (L) by 157 runs
⇒ H – L = 157
Now, for total runs in those two innings,
(H + L) = 47 × 27 – 42 ×25
⇒ (H + L) = 219 runs
Adding the two equations, we get
So, 2H = 219 + 157
⇒ H = 188 runs
Hence, the correct answer is 188 runs.

175.
Number of days taken by 10 men to complete the work = 40
Number of days taken to complete the work after 4 men left after some days = 50
Total work = 10 × 40 = 400 units
Let the number of days after the commencement of the work when the four men left be x.
So, 10x + 6(50 – x) = 400
⇒ 4x = 100
⇒ x = 25
Hence, the correct answer is 25 days.

176.
Given, A and B can complete a piece of work in 10 and 16 days respectively.
Work done by A in a day = 1/10
Work done by B in a day = 1/16
⇒ Work done by A and B in 2 days if they work alternatively = 1/10 + 1/16 = 13/80
⇒ Work done by A and B in 12 days if they work alternatively = (13/80) × 6 = 39/40
⇒ Work left after 12 days = 1 - 39/40 = 1/40
⇒ Time taken by A to complete remaining work = (1/40) / (1/10) = 1/4 days
⇒ Total time = 12 + 1/4 = 12 1/4 days
Hence, the correct answer is 12 1/4 days.

177.
Given, The average of six numbers = 3.52.
The average of two of them = 3.7.
The average of the other two is 2.5.
We know that, the sum of numbers = Average × Count of numbers.
So, the total sum of six numbers = 3.52 × 6 = 21.12. And, the total sum of the first two numbers = 3.7 × 2 = 7.4.
And, the total sum of the other two numbers = 2.5 × 2 = 5.
So, the total sum of the remaining two numbers = 21.12 – 7.4 – 5 = 8.72.
Now, the average of the remaining two numbers = 8.72 / 2 = 4.36. Hence, the correct answer is 4.36.

178.
Let the weight of Ram be x kg.
Average weight = x kg
According to the question,
After adding Shyam, the average weight = (x + 2) kg
Weight of Shyam = 2(x + 2) - x = (x + 4) kg
After adding Rohan, the average weight = (x + 4) kg
Weight of Rohan = 3(x + 4) - x - (x + 4) = (x + 8) kg
After adding Reeta, the average weight = (x + 6) kg
Weight of Reeta = 4(x + 6) - x - (x + 4) - (x + 8) = (x + 12) kg

After adding Mukesh, the average weight = (x + 8) kg
Weight of Mukesh = 5(x + 8) - x- (x + 4) - (x + 8) - (x + 12) = (x + 16) kg
Now, Mukesh is heavier than Ram by = (x + 16) - x = 16 kg
Hence, the correct answer is 16 kg.

179.
Diameter of sphere = 18 cm
Radius of sphere, R = 9 cm
Diameter of wire = 6 mm
The radius of wire, r = 3 mm = 0.3 cm
Let l be the length of the wire.
Volume of sphere = volume of wire
$(4/3)\pi R^3 = \pi r^2 l$
$(4/3) \times 9^3 = 0.3^2 l$
l = (4 × 729)/(3 × 0.09) = 10800 cm = 108 m
Hence, the answer is 108 m.

180.
Volume of hemisphere = $(2\pi \times Radius^2)/3$
Volume of cone = $(\pi \times Radius^2 \times Height)/3$
Given, Radius = 4 cm
Volume of hemisphere = $(2\pi \times 4^3)/3 = (128\pi)/3$ cm³
Height of cone = 72 cm
Volume of cone = $(\pi \times R^2 \times 72)/3$
The volume of the hemisphere must be equal to the volume of the cone.
Let the radius of the base of the right circular cone be R cm.
According to the concept,
$(128\pi)/3 = (\pi \times R^2 \times 72)/3$
$\Rightarrow R^2 = 16/9$
$\Rightarrow R = 4/3$
$\Rightarrow R \approx 1.33$
Therefore, the radius of the base of the cone is 1.33 cm.
Hence, the correct answer is 1.33 cm.

181.
According to the question,
The volume of the sphere = Volume of the cone
So, $(4/3)\pi 12^3 = (1/3)\pi 6^2 h$
$\Rightarrow 4 \times 12^3 = \pi 6^2 h$
$\Rightarrow 4 \times 48 = h$
$\Rightarrow h = 192$
Hence, the correct answer is 192 cm

182.
Volume of conical vessel = $(1/3)\pi\, r^{2h}$ = $(1/3)\pi \times 20^2 \times 27$ cm³
Volume of cylindrical vessel = $\pi \times 15^2 \times$ height cm³
Now, $(1/3) \times \pi \times 20^2 \times 27 = \pi \times 15^2 \times$ height
So, the height of the cylindrical vessel = $(20^2 \times 27) / (15^2 \times 3)$ = 16 cm
Hence, the correct answer is 16 cm

183.
Base radius of conical vessel = 7 cm
Height of conical vessel = 15 cm.
Weight of the iron per cubic centimetre (density) = 15 g
Volume of the Conical Vessel = $(1/3)\pi\, r^{2h}$
= $(1/3)\pi \times 7^{2h} \times 15$ = 770 cm³
Weight of vessel = Volume × Density
= 770 × 15
= 11550 gm
= 11.55 kg
Hence, the correct answer is 11.55 kg.

184.
Given: The area of the floor of a cubical room is 64 m².
Let the sides of the room be a.
So, $a^2 = 64$
$\Rightarrow a = 8$ m
The length of the longest rod = the diagonal of the cubical room = $a\sqrt{3}$
The length of the longest rod = $8 \times \sqrt{3} = 8\sqrt{3}$ m
Hence, the correct answer is $8\sqrt{3}$ m.

185.
Outer radius, R = 6 cm
Inner radius, r = 3 cm
Volume of hollow sphere = $(4/3)\pi \times R^3 - (4/3)\pi \times r^3$
= $(4/3)\pi \times 6^3 - (4/3)\pi \times 3^3$
= $(4/3)\pi \times (6^3 - 3^3)$
= $(4/3)\pi \times (216 - 27)$
= $(4 \times 189)/3 \times \pi$
= 252π
Hence, the correct answer is 252π cm³

186.
A number is divisible by 5 if and only it its last digit is either 5 or 0. But, 0 is not available here.
So, we have to fix 5 as a last digit of 4-digit number and fill 3 places with remaining 6 digits.
Number of ways to arrange the chosen digit = 3!
Hence, total number of required ways = $^6C_3 \times 3! = ^6p_3 = 120$

187.

7 persons are to be seated in a row   ….. (given)

Let us consider 2 persons as 1 group since 2 person sit next to each other

Thus, we have to arrange 6 persons,

Thus, the no. of arrangement = 2! X 6!

Thus, total no. of arrangement of 7 persons = 7!

Now,

Probability = no. of favorable outcomes/ total no. of outcomes

$$= 2! \text{ X } 6! / 7!$$
$$= 2 \text{ x } 1 \text{ x } 6! / 7 \text{ x } 6!$$
$$= 2/ 7$$

Thus, option C is the correct answer.

188.

The set has 3 consecutive nos. from 1 to 20,

Thus, it is – (1,2,3), (2,3,4), (3,4,5), …….. , (18,19,20)

Now, if we consider 3 nos. as a single digit, there will be 18 nos.

Now, choosing 3 nos. out of 20 can be done in 20C3 ways

This, n(S) = 20C3

Required event – the 3 nos. chosen must be consecutive, thus,

P (nos. are consecutive) = 18/ 30C3

$$= \frac{\frac{18}{20!}}{3!(20-3)!}$$

$$= \frac{18}{\frac{20 \times 19 \times 18 \times 17!}{3 \times 2 \times 1 \times 17!}}$$

$$= \frac{18}{\frac{20 \times 19 \times 18}{6}}$$

$$= \frac{6}{20 \times 19}$$

$$= \frac{3}{190}$$

Now,

P (nos. that are not consecutive) = 1 – 3/190

$$= 190 – 3/ 190$$
$$= 187 / 190$$

Thus, option B is the correct answer.

189.
Total cards = 52
Favourable = 4 king +9 of heart +3 of spade =4+1+1=6
∴ Required probability = 6/52 = 3/26

190. To find the probability that an individual actually has the disease given a positive test result, we need to use Bayes' theorem. Let's define the events:

A: Person has the disease

B: Person tests positive for the disease

We are given:
$P(A) = 1/1000$ (prevalence of the disease in the general population)
$P(B \mid A) = 0.98$ (sensitivity of the test)
$P(B \mid \mathrm{not} A) = 0.05$ (1-specificity of the test)
$P(A \mid \mathrm{high} - \mathrm{risk\ group}) = 5\%$ (disease prevalence in the high - risk group)
We want to find

$P(A \mid B)$,the probability that the individual actually has the disease given a positive test result.
Using Bayes' theorem:

$P(A \mid B) = P(B \mid A) \times P(A \mid \text{ high-risk group })/P(B)$
To calculate $P(B)$, we can use the law of total probability:

$P(B) = P(B \mid A) \times P(A) + P(B \mid \text{ not } A) \times P(\text{ not } A)$

Given:
$P(A) = 1/1000$
$P(B \mid A) = 0.98$
$P(B \mid \text{ not } A) = 0.05$
$P(A \mid \text{ high-risk group }) = 5\%$
Substituting the values into the equation, we can calculate $P(A \mid B)$ to be approximately 0.49%.

Substituting the values into the equation, we can calculate $P(A \mid B)$ to be approximately 0.49%
.

Therefore, the probability that an individual actually has the disease given a positive test result in the high-risk group is 0.49%.

191.

To find the correct mean and standard deviation, we need to adjust the wrongly recorded weight and recalculate these statistics.

First, let's adjust the weight of 80 kg to the correct weight of 75 kg.

The sum of the original 200 weights is 75 kg 200 = 15,000 kg.

We need to subtract the wrongly recorded weight (80 kg) and add the correct weight (75 kg) to the sum.

Corrected sum = (15,000 kg - 80 kg) + 75 kg = 15,000 kg - 80 kg + 75 kg = 14,995 kg.

The correct mean is the corrected sum divided by the number of objects (200).

Corrected mean = 14,995 kg / 200 = 74.975 kg.

Next, let's adjust the standard deviation. Since we only changed one weight, the impact on the standard deviation is minimal.

The corrected standard deviation remains the same as the original standard deviation, which is 9 kg.

Therefore, the correct mean is approximately 74.975 kg, and the correct standard deviation is 9 kg.

Among the given options, 74 kg and 9 kg is the closest to the correct mean and standard deviation.

192.

Given: The slope of the line passing through the points (2, –1) and (x, 5) is –1.

Slope (m) of the line joining (x_1, y_1) and (x_2, y_2) is:

$\Rightarrow$ m = (y₂ - y₁)/(x₂ - x₁)

$\Rightarrow$ -1 = (5 - (-1))/(x - 2) = 6/(x - 2)

$\Rightarrow$ -x + 2 = 6

$\Rightarrow$ x = -4

Hence, the correct answer is -4.

193.

$$\lim_{x \to 0} \frac{\sin^{-1} x - \tan^{-1} x}{x^3} \qquad \left[\frac{0}{0} \ form\right]$$

$$= \lim_{x \to 0} \frac{\frac{1}{\sqrt{1-x^2}} - \frac{1}{1+x^2}}{3x^2} \qquad (\text{L' Hospital rule})$$

$$= \lim_{x \to 0} \left[\frac{(1+x^2) - \sqrt{1-x^2}}{3x^2(1+x^2)\sqrt{1-x^2}} \times \frac{(1+x^2) + \sqrt{1-x^2}}{(1+x^2) + \sqrt{1-x^2}}\right]$$

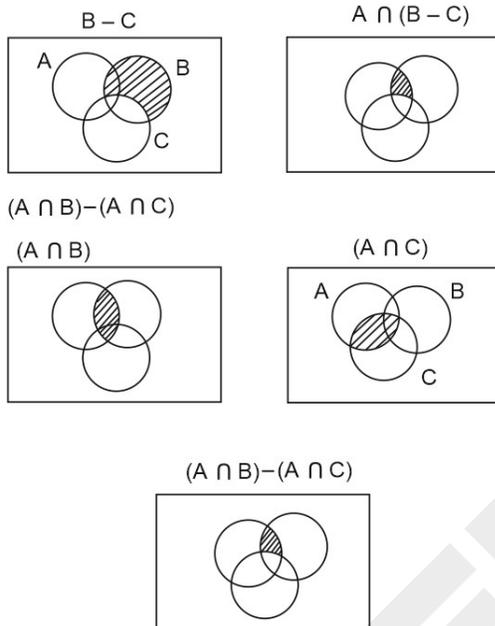$$= \lim_{x \to 0} \left[\frac{(1+x^2)^2 - (1-x^2)}{3x^2(1+x^2)\sqrt{1-x^2} + (1+x^2)(1-x^2)}\right]$$

$$= \lim_{x \to 0} \left[\frac{(3+x^2)}{3\left((1+x^2)^2 \sqrt{1-x^2} + (1-x^4)\right)} \right] = \frac{1}{3}\left(\frac{3}{2}\right) = \frac{1}{2}.$$

194.
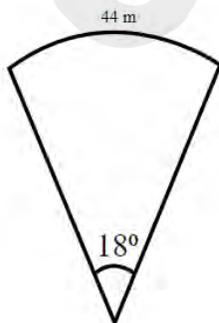Using Venn diagram one can see that

A ∩ (B - C) = (A ∩ B) - (A ∩ C)

So, $A \cap (B-C) = (A \cap B) - (A \cap C) = \{3,4,5,6\} - \{5\} = \{3,4,6\}$

195.
The domain of the greatest integer function is Integers.
Hence all positive, negative, and zero integers are domain of G.I.F.

196.

Let the length of the tree be l metres.
According to the question,
2πl × (18°/360°) = 44
⇒ (44l/7) × (1/20) = 44
⇒ l = 140 metres
Hence, the correct answer is 140 metres.

197.

Given ∠A = 30°
We have to find the value of BC i.e., x.
sin 30° = x/10
⇒ 1/2 = x/10
⇒ x = 5 units
Hence, the correct answer is 5.

198.

We know, sec² A = 1 + tan² A
So, the false statement is: 1 - sec² A = tan² A
Hence, the answer is 1 - sec² A = tan² A.

199.

Scores	Frequencies	Mid Point	Mid Point × Frequencies
0-10	2	5	10
10-20	4	15	60
20-30	12	25	300
30-40	21	35	735
40-50	6	45	270
50-60	3	55	165
60-70	2	65	130

Mean = (Σ (Mid Point × Frequencies)) / Σ Mid Point
= (10 + 60 + 300 + 735 + 270 + 165 + 130) / (2 + 4 + 12 + 21 + 6 + 3 + 65)
= 1670 / 50
= 33.4
Hence, the correct answer is 33.4.

200.
The average of 20 numbers = 35
The sum of 20 numbers = 20 × 35 = 700
Now add 85 and subtract 45,
Correct sum = 700 – 45 + 85 = 740
Therefore, Correct average = 740 / 20 = 37
Hence, the correct answer is 37.

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