Series

INTRODUCTION

Now-a-days questions on series are asked in almost every competitive examination. These questions may involve numbers only, letters (A, B, ...) only or a combination of both.

SERIES

A series is a sequence of numbers. These numbers are called *terms* of the sequence. All the terms of the sequence are arranged according to a certain predefined rule. After carefully studying the given series and finding the specific pattern in which the terms are changing, it is possible to find out the next term of the series.

NUMBER SERIES

1. **Arithmetic Series** An arithmetic series is one in which the difference between any two consecutive terms is always the same and is called the common difference, that is, each successive number is obtained by adding (or subtracting) a fixed number to the previous number.

Illustration 1 Consider the series: 1, 3, 5, 7, 9, ...

Here, 2nd term – Ist term = 3rd term – 2nd term

= 4th term – 3rd term = ... = 2

Hence, 1, 3, 5, 7, ... is an arithmetic series.

2. **Geometric Series** A geometric series is one in which the ratio of any two consecutive terms is always the same and is called the common ratio, that is, each successive number is obtained by multiplying (or dividing) a fixed number by the previous number.

Illustration 2 The series given below:

(a) 2, 4, 8, 16, 32, ...

(b) 3, –6, 12, –24, 48,...

(c) $\frac{1}{4}, \frac{1}{12}, \frac{1}{36}, \frac{1}{100}, \ldots$

(d) $\frac{1}{5}, \frac{1}{30}, \frac{1}{180}, \frac{1}{1080}, \ldots$

(e) $x, x^2, x^3, x^4, \ldots$ (where x is any fixed real number), are all geometric series. The ratio of any term in (a) to the preceding term is 2. The corresponding ratios in (b), (c), (d) and (e) are –2, $\frac{1}{3}$, $\frac{1}{6}$ and x, respectively.

3. **Series of Squares, Cubes and so on.** Simple powers of natural numbers (squares, cubes, etc.) or their combinations are sometimes used to form some series.

Illustration 3

(a) 4, 9, 16, 25, 36, ...

Each term in this series is a perfect square. The square roots of the terms are 2, 3, 4, 5, 6, ... Clearly, the square roots of the terms of the given series are forming an arithmetic series with common difference 1. So, the next term of the series will be $(6 + 1)^2$, that is, 49.

(b) 1, 27, 125, 343, ...

Each term in this series is a perfect cube. The cube roots of its terms are 1, 3, 5, 7, ... clearly, the cube roots of the terms of the given series are forming an arithmetic series with common difference 2.

So, the next term of the series will be 9^3, that is, 729.

(c) $\frac{1}{8}, \frac{4}{27}, \frac{9}{64}, \frac{16}{125}, \ldots$

In the above series, the numerators are squares of natural number (n), while the denominators are cubes of $(n + 1)$.

So, the next term of the series will be $\frac{25}{216}$.

4. **Arithmetic Series of Second Order** We know that in an arithmetic series, the difference of any two consecutive terms is always the same. This is arithmetic series of first order.

A series in which the difference between successive terms themselves form an arithmetic series is called an arithmetic series of second order.

Illustration 4 Consider the series 1, 3, 7, 13, ...

The difference between successive terms of the above series are 2, 4, 6, ... which form an arithmetic series with common difference 2.

So, the next term of the series will be (13 + 8), that is, 21.

5. **Arithmetic Series of Third Order** A series in which the difference between successive terms themselves form an arithmetic series of second order is called an arithmetic series of third order.

Illustration 5 Consider the series:2, 9, 17, 28, ...

The difference of successive terms of the above series is 7, 8, 11, 16, ...

The difference of successive terms of the above series is 1, 3, 5, ... which forms an arithmetic series with common difference 2.

So, the next term of the series will be (28 + 16), i.e., 44.

In this manner, we can construct arithmetic series of higher order.

6. **Arithmetico-Geometric Series** In this series, each successive term is obtained by first adding a fixed number to the previous term and then multiplying it by another fixed number.

Illustration 6 The series: 1, 9, 33, 105, ... is an arithmetico-geometric series as each successive term is obtained by first adding 2 to the previous term and multiplying it by 3.

So, the next term of the series will be $(105 + 2) \times 3$, that is, 321.

It is important to note that the differences of successive numbers in the above series are 8, 24, 72, ... which are forming a geometric series.

7. **Geometrico-Arithmetic Series** In this series, each successive term is obtained by first multiplying (or dividing) the previous term by a fixed number and then adding (or subtracting) another fixed number.

Illustration 7 The series:2, 5, 17, 65, ... is a geometrico-arithmetic series as each successive term is obtained by first multiplying the previous term by 4 and then subtracting 3 from it.

So, the next term of the series will be $(65 \times 4) - 3$, that is, 257.

Again, note that the differences of successive numbers in the above series are 3, 12, 48, ... which are forming a geometric series.

8. **Double Series** It consists of two series combined into a single series. The alternating terms of this series form an independent series.

Illustration 8 Consider the series:

1, 2, 4, 6, 7, 18, 10, 54, ...

Terms at odd places of the series: 1, 4, 7, 10, ... is an arithmetic series.

Terms at even places of the series: 2, 6, 18, 54, ... is a geometric series.

So, the next term of the series will be (10 + 3), that is, 13.

Finding the Wrong Term in a Series

In such questions, a number series is given of which all others except one are similar in some respect. The one term of the sequence does not follow the same pattern as is followed by the others. This one is the wrong term in the series. To find the wrong term in a given series we must study the given series carefully and find the pattern/rule in which the terms are changing. After that, we should find which of the terms is not changing according that pattern/rule. Thus, the wrong term is found.

Illustration 9 Find the wrong term in the given series: 5, 10, 17, 24, 37, 50, 65

Solution: The terms of the series are in the following order:

$2^2 + 1, 3^2 + 1, 4^2 + 1, 5^2 + 1, 6^2 + 1, 7^2 + 1, 8^2 + 1$

Clearly, fourth term of the series, that is, 24 should be replaced by 26 so that all the terms of the series follow a particular pattern. Thus, 24 is the wrong term in the given series.

Finding the Missing Term of the Series

In such questions, a number series is given in which a blank space or question mark is provided in place of any one term of the series. The term at the blank space follow the same pattern as followed by other terms. We are required to find the missing term to replace the blank space or question mark.

Illustration 10 Find the missing term in the given series: 49, 56, 64, 72, ?, 90, 100

Solution: The terms of the series are in the following order

$$7^2, 7^2 + 7, 8^2, 8^2 + 8, 9^2, 9^2 + 9, 10^2$$

Clearly, fifth term in place of question mark will be 9^2, that is, 81.

SOME SPECIAL SERIES

1. Series of Date or Time

(*a*) Consider the series,

3 – 2 – 2004, 13 – 2 – 2004, 23 – 2 – 2004,

5 – 3 – 2004,

Here, each successive date differs by 10 days. Since 2004 is a leap year, 5 – 3 – 2004 should be replaced by 4 – 3 – 2004.

(*b*) Consider the series,

3.35, 5.00, 6.25, 7.40, 9.15, 10.40

Here, each successive time differs by 1 hr 25 min. Therefore, 7.40 should be replaced by 7.50.

2. Numbers Followed by Their L.C.M. or H.C.F.

(*a*) Consider the series,

1, 2, 3, 6, 4, 5, 6, 60, 5, 6, 7, ...?

1st part	2nd part	3rd part
1, 2, 3, 6	4, 5, 6, 60	5, 6, 7 ?

Here, in each part fourth number is L.C.M. of first three numbers. Thus, the number in place of question mark will be 210 (L.C.M. of 5, 6, 7).

(*b*) Consider the series,

8, 4, 4, 7, 8, 1, 3, 9, 3, 2, 1, ?

1st part	2nd part	3rd part	4th part
8, 4, 4	7, 8, 1	3, 9, 3	2, 1 ?

Here, in each part third number is H.C.F. of first two numbers. Thus , the number in place of question mark will be 1 (H.C.F. of 2, 1,).

3. Numbers Followed by Their Product

Consider the series,

1, 3, 3, 9, 27, 243, ?

Here, $1 \times 3 = 3$

$3 \times 3 = 9$

$3 \times 9 = 27$

$9 \times 27 = 243$

$27 \times 243 = 6561$

Thus, the number in place of question mark will be 27×243, that is, 6561.

4. By Use of Digit Sum

Consider the series,

11, 13, 17, 25, 32, ?

Here, $13 = 11 + (1 + 1)$

$17 = 13 + (1 + 3)$

$25 = 17 + (1 + 7)$

$32 = 25 + (2 + 5)$

That is, next number = previous number + digit sum of pervious number.

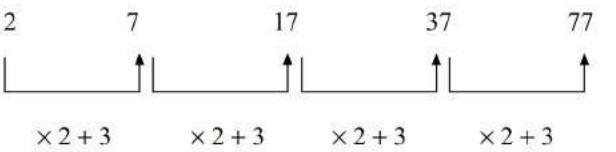
Thus, the number in place of question mark will be $32 + (3 + 2) = 37$.

Alpha–Numeric Series

Such series involve the use of both the letters of the alphabet as well as the numbers. It is a two-line series. One line is a number series while the other line is an alphabet series. The terms of both the series follow the same pattern/rule. One of these two series is completely known. We have to find the required number of the incomplete series.

Illustration 11 2, 7, 17, 37, 77,

3, *a*, *b*, *c*, *d*,



$\therefore$ $a = 3 \times 2 + 3 = 9$

$b = 9 \times 2 + 3 = 21$

$c = 21 \times 2 + 3 = 45$

$d = 45 \times 2 + 3 = 93$

Practice Exercises

Difficulty Level-1 (Based on Memory)

Directions (Q. 1 and 2): *In each of these questions, one term in the given number series is wrong. Find out the wrong term.*

1. 8, 14, 26, 48, 98, 194, 386

(*a*) 14 (*b*) 48

(*c*) 98 (*d*) 194

[Based on MAT, 2004]

2. 11, 5, 20, 12, 40, 26, 74, 54

(*a*) 5 (*b*) 20

(*c*) 40 (*d*) 26

[Based on MAT, 2004]

Directions (Q. 3 to 5): *In each of the following number series, two terms have been put within brackets. Mark your answer as*

(*a*) If both the bracketed terms are right.

(*b*) If the first bracketed term is right and the second is wrong.

(*c*) If the first bracketed term is wrong and the second is right.

(*d*) If both the bracketed terms are wrong.

3. 4, 6, 10, (12), 16, (14), 22. **[Based on MAT, 2004]**

4. 3, 10, 29, (66), (127), 218. **[Based on MAT, 2004]**

5. (2), 5, (12), 25, 41, 61. **[Based on MAT, 2004]**

Directions (Q. 6 and 7): *What number will replace the question mark (?) in these questions:*

6.

3	8	10	2	?	1
6	56	90	2	20	0

(*a*) 0 (*b*) 3

(*c*) 5 (*d*) 7

[Based on MAT, 2004]

7.

1	2	3	2	10	12
2	5	12	10	16	13
1	2	1	?	10	24

(*a*) 5 (*b*) 11

(*c*) 13 (*d*) 8

[Based on MAT, 2004]

8. The missing number in the series 8, 24, 12, 36, 18, 54, — is:

(*a*) 27 (*b*) 108

(*c*) 68 (*d*) 72

[Based on MAT, 2002]

9. What is the next number in the series given below?

2, 5, 9, 14, 20

(*a*) 25 (*b*) 26

(*c*) 27 (*d*) 28

[Based on MAT, 2000]

10. Complete the series:

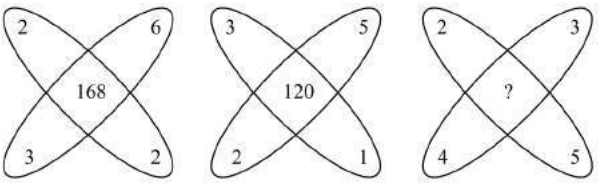
10, 18, 34, ??, 130, 258

(*a*) 32 (*b*) 60

(*c*) 68 (*d*) 66

[Based on MAT, 2000]

11.



(*a*) 240 (*b*) 195

(*c*) 84 (*d*) None of these

[Based on MAT, 2001]

12. 6, 15, 36, 75, ?

(*a*) 231 (*b*) 138

(*c*) 214 (*d*) None of these

[Based on MAT, 2001]

13. 15, 45, ?, 405

(*a*) 90 (*b*) 75

(*c*) 135 (*d*) 51

[Based on MAT, 2001]

14. Find the next number:

2743, 2198, 1729, 1332,?

(*a*) 1015 (*b*) 1001

(*c*) 999 (*d*) 317

[Based on FMS (Delhi), 2004]

15. Find the next number:

–1, 3, –15, 105, –945, 10395,?

(*a*) 145535 (*b*) 135135

(*c*) –145535 (*d*) –135135

[Based on FMS (Delhi), 2004]

16. The first four numbers below form a series. Insert the missing number at the end of the series from the given options:

28, 33, 31, 36,...

(*a*) 32 (*b*) 34

(*c*) 38 (*d*) 40

[Based on Narsee Manjee Inst. of Man. Studies, 2003]

17. Find the next number:

999, 730, 511, 344, 215, ?

(*a*) 103 (*b*) 104

(*c*) 125 (*d*) 126

[Based on FMS (Delhi), 2003]

18. Find the next number:

1, 3, 15, 105, 945,?

(*a*) 9995 (*b*) 10395

(*c*) 956 (*d*) 19395

[Based on FMS (Delhi), 2003]

Directions (Q. 19 to 21): *In each of these questions, a number series is given. After the series, a number is given followed by (a), (b), (c), (d) and (e). You have to complete the series starting with the number given following the sequence of the given series to answer these questions:*

19. 3 10 26 83 336 1683

7 (*a*) (*b*) (*c*) (*d*) (*e*)

What will come in place of (*b*)?

(*a*) 32 (*b*) 30

(*c*) 34 (*d*) 36

(*e*) None of these **[Based on IRMA, 2002]**

20. 4 3 4 7 1.5 23.5

6 (*a*) (*b*) (*c*) (*d*) (*e*)

What will come in place of (*c*) ?

(*a*) 8.5 (*b*) 9.5

(*c*) 8 (*d*) 9

(*e*) None of these **[Based on IRMA, 2002]**

21. 3 4 16 75 364 1945

1 (*a*) (*b*) (*c*) (*d*) (*e*)

What will come in place of (*c*)?

(*a*) 72 (2) 63

(*c*) 66 (*d*) 69

(*e*) None of these **[Based on IRMA, 2002]**

22. 48, 24, 72, 36, 108, ?

(*a*) 115 (*b*) 110

(*c*) 121 (*d*) 54

[Based on MAT, 2008]

23. 7, 9, 13, 21, 37, ?

(*a*) 58 (*b*) 63

(*c*) 69 (*d*) 72

24. 36, 28, 24, 22, ?

(*a*) 18 (*b*) 19

(*c*) 21 (*d*) 22

25. 0, 4, 18, 48, ?, 180

(*a*) 58 (*b*) 68

(*c*) 84 (*d*) 100

26. 987:IHG :: 654:?

(*a*) FDE (*b*) FED

(*c*) EFD (*d*) DEF

27. 24:126 :: 48:?

(*a*) 433

(*b*) 192

(*c*) 240

(*d*) 344

28. 1:8 :: 27:?

(*a*) 37 (*b*) 47

(*c*) 57 (*d*) 64

29. Find the wrong number in the series:

6, 9, 15, 22, 51, 99

(*a*) 99 (*b*) 51

(*c*) 22 (*d*) 15

30. 8, 15, 36, 99, 288, ...?

(*a*) 368

(*b*) 676

(*c*) 855

(*d*) 908

31. 4, 196, 16, 169, ? , 144, 64

(*a*) 21 (*b*) 81

(*c*) 36 (*d*) 32

32. Find out the questioned number. 6:5:: 8:?

(*a*) 2 (*b*) 4

(*c*) 6 (*d*) 10

33. 5, 21, 69, 213, 645, __ ?

(*a*) 1670

(*b*) 1941

(*c*) 720

(*d*) 1320

34. 121, 144, 289, 324, 529, 576, __ ?

(*a*) 961

(*b*) 841

(*c*) 900

(*d*) 729

35. 14, 19, 29, 49, 89, __ ?

(*a*) 139 (*b*) 149

(*c*) 159 (*d*) 169

36. 34, 18, 10, ?

(*a*) 8 (*b*) 5

(*c*) 7 (*d*) 6

37. 9, 8, 10, 16, 11, ?, 12, 64

(*a*) 28 (*b*) 36

(*c*) 25 (*d*) 32

38. 7, 8, 18, 57, ?

(*a*) 232
(*b*) 228
(*c*) 234
(*d*) 226
(*e*) None of these

39. 7, 11, 19, 35, ?

(*a*) 71 (*b*) 69
(*c*) 65 (*d*) 73
(*e*) None of these

40. 5, 11, 23, ?, 95

(*a*) 45 (*b*) 49
(*c*) 47 (*d*) 46
(*e*) None of these

41. 17, 22, 52, 165, ?

(*a*) 648 (*b*) 468
(*c*) 334 (*d*) 668
(*e*) None of these

42. Find the value of x in the series 2, 6, 30, 210, x, 30030, ...

(*a*) 2310 (*b*) 1890
(*c*) 2520 (*d*) 2730

Directions (Q. 43 to 47): *In each of these questions, one term in the given number series is wrong. Find out the wrong term.*

43. 142 119 100 83 65 59 52

(*a*) 65 (*b*) 100
(*c*) 59 (*d*) 119
(*e*) None of these

44. 8 12 24 46 72 108 152

(*a*) 12 (*b*) 24
(*c*) 46 (*d*) 72
(*e*) None of these

45. 13 25 40 57 79 103 130

(*a*) 25 (*b*) 40
(*c*) 57 (*d*) 79
(*e*) None of these

46. 2 10 18 54 162 486 1458

(*a*) 18 (*b*) 54
(*c*) 162 (*d*) 10
(*e*) None of these

47. 850 600 550 500 475 462.5 456.25

(*a*) 600 (*b*) 550
(*c*) 500 (*d*) 462.5
(*e*) None of these

48. 12 12 18 36 90 270 ?

(*a*) 945 (*b*) 810
(*c*) 1080 (*d*) 1215
(*e*) None of these

49. 1015 508 255 129 66.5 ? 20.875

(*a*) 34.50
(*b*) 35
(*c*) 35.30
(*d*) 35.75
(*e*) None of these

50. 8 9 20 63 256 1285 ?

(*a*) 6430
(*b*) 7450
(*c*) 7716
(*d*) 7746
(*e*) None of these

51. 980 484 236 112 50 ? 3.5

(*a*) 25 (*b*) 17
(*c*) 21 (*d*) 29
(*e*) None of these

52. The first three numbers in a series are – 3, 0, 3, the 10th number in the series will be:

(*a*) 18 (*b*) 21
(*c*) 24 (*d*) 27

[Based on MAT (Sept), 2007]

53. Four different integers form an increasing *AP* If one of these numbers is equal to the sum of the squares of the other three numbers, then the numbers are:

(*a*) –2, –1, 0, 1
(*b*) 0, 1, 2, 3
(*c*) –1, 0, 1, 2
(*d*) None of these

[Based on MAT (Dec), 2006]

54. The missing number in the series 8, 24, 12, 36, 18, 54, ... is:

(*a*) 27 (*b*) 108
(*c*) 68 (*d*) 72

[Based on MAT (May), 2002]

55. What is the next number in the series given below?

53, 48, 50, 50, 47

(*a*) 51 (*b*) 46
(*c*) 53 (*d*) 52

[Based on MAT (Dec), 2000]

56. What is the next number in the series given below?
2, 5, 9, 14, 20
(*a*) 25 (*b*) 26
(*c*) 27 (*d*) 28
[Based on MAT (Dec), 2000]

57. In the following number series there is a wrong number. Find out that number.
56, 72, 90, 108, 132
(*a*) 72 (*b*) 132
(*c*) 108 (*d*) None of these
[Based on MAT, 1999]

58. What should come in place of the question mark in the following series?
0, 1, ?, 64, 325
(*a*) 15 (*b*) 12
(*c*) 36 (*d*) 32
[Based on MAT, 1999]

59. The next number of the sequence 5, 25, 50, 250, 500, ... is:
(*a*) 2500 (*b*) 1250
(*c*) 1000 (*d*) 250
[Based on MAT, 1999]

60. What is the next number in the series given be low?
2, 5, 9, 14, 20
(*a*) 25 (*b*) 26
(*c*) 27 (*d*) 28
[Based on MAT, 2000]

61. What is the next number in the series given below?
53, 48, 50, 50, 47
(*a*) 51 (*b*) 46
(*c*) 53 (*d*) 52
[Based on MAT, 2000]

62. Insert the missing number:
4, – 8, 16, – 32, 64, (...)
(*a*) 128 (*b*) –128
(*c*) 192 (*d*) –192
[Based on FMS (MS), 2006]

63. The next 3 terms of the series 121143165 are:
(*a*) 789 (*b*) 246
(*c*) 187 (*d*) 209
[Based on XAT, 2006]

64. The next three terms of the series 814265098 are:
(*a*) 386 (*b*) 194
(*c*) 943 (*d*) 650
[Based on XAT, 2006]

65. The next three terms of the series 813213246 are:
(*a*) 74 (*b*) 98
(*c*) 54 (*d*) 63
[Based on XAT, 2006]

66. The next three terms of the series 28204492188 are:
(*a*) 299
(*b*) 436
(*c*) 380
(*d*) 456
[Based on XAT, 2006]

67. The next three terms of the series 137153163 are:
(*a*) 786 (*b*) 524
(*c*) 127 (*d*) 611
[Based on XAT, 2006]

68. The next three terms of the series 13102164129 are:
(*a*) 778 (*b*) 612
(*c*) 542 (*d*) 388
[Based on XAT, 2006]

69. The next three terms of the series 151620294 are:
(*a*) 436
(*b*) 570
(*c*) 287
(*d*) 698
[Based on XAT, 2006]

Directions (Q. 70 to 79): *In each of these questions, one term in the given number series is wrong. Find out the wrong term.*

70. 484 240 120 57 26.5 11.25 3.625
(*a*) 240
(*b*) 120
(*c*) 57
(*d*) 26.5
(*e*) 11.25

71. 3 5 13 43 176 891 5353
(*a*) 5 (*b*) 13
(*c*) 43 (*d*) 176
(*e*) 891

72. 6 7 16 41 90 154 292
(*a*) 7 (*b*) 16
(*c*) 41 (*d*) 90
(*e*) 154

73. 5 7 16 57 244 1245 7506
(*a*) 7 (*b*) 16
(*c*) 57 (*d*) 244
(*e*) 1245

74. 4 2.5 3.5 6.5 15.5 41.25 126.75
(*a*) 2.5 (*b*) 3.5
(*c*) 6.5 (*d*) 15.5
(*e*) 41.25

75. 32 34 37 46 62 87 123
(*a*) 34 (*b*) 37
(*c*) 62 (*d*) 87
(*e*) 46

76. 7 18 40 106 183 282 403

(*a*) 18 (*b*) 282
(*c*) 40 (*d*) 106
(*e*) 183

77. 850 843 829 808 788 745 703

(*a*) 843
(*b*) 829
(*c*) 808
(*d*) 788
(*e*) 745

78. 33 321 465 537 590 600

(*a*) 321
(*b*) 465
(*c*) 573
(*d*) 537
(*e*) 590

79. 37 47 52 67 87 112 142

(*a*) 47 (*b*) 52
(*c*) 67 (*d*) 87
(*e*) 112

80. 586 587 586 581 570? 522

(*a*) 545 (*b*) 543
(*c*) 551 (*d*) 557
(*e*) None of these

81. 64 54 69 49 74 44 ?

(*a*) 89 (*b*) 69
(*c*) 59 (*d*) 99
(*e*) None of these

82. 4000 2008 1012? 265 140.5 78.25

(*a*) 506
(*b*) 514
(*c*) 520
(*d*) 512
(*e*) None of these

83. 5 5 15 75? 4725 51975

(*a*) 520
(*b*) 450
(*c*) 525
(*d*) 300
(*e*) None of these

84. 52 26 26 39 78? 585

(*a*) 195 (*b*) 156
(*c*) 234 (*d*) 117
(*e*) None of these

85. 7 20 46 98 202?

(*a*) 420
(*b*) 410
(*c*) 310
(*d*) 320
(*e*) None of these

86. 210 209 213 186 202?

(*a*) 138
(*b*) 77
(*c*) 177
(*d*) 327
(*e*) None of these

87. 27 38 71 126 203?

(*a*) 212 (*b*) 202
(*c*) 301 (*d*) 312
(*e*) None of these

88. 435 354 282 219 165?

(*a*) 103
(*b*) 112
(*c*) 120
(*d*) 130
(*e*) None of these

89. 4 200 369 513 634?

(*a*) 788
(*b*) 715
(*c*) 734
(*d*) 755
(*e*) None of these

90. 8 11 17 47 128 371 1100

(*a*) 11 (*b*) 47
(*c*) 17 (*d*) 371
(*e*) 128

91. 1 5 13 31 61 125 253

(*a*) 1 (*b*) 5
(*c*) 31 (*d*) 61
(*e*) 125

92. 325 314 288 247 191?

(*a*) 126 (*b*) 116
(*c*) 130 (*d*) 120
(*e*) None of these

93. 45 46 70 141? 1061.5

(*a*) 353 (*b*) 353.5
(*c*) 352.5 (*d*) 352
(*e*) None of these

94. 620 632 608 644 596?
(*a*) 536 (*b*) 556
(*c*) 656 (*d*) 646
(*e*) None of these

95. 15 25 40 65? 170
(*a*) 115 (*b*) 90
(*c*) 105 (*d*) 120
(*e*) None of these

96. 120 320? 2070 5195 13007.5
(*a*) 800 (*b*) 920
(*c*) 850 (*d*) 900
(*e*) None of these

97. 51 26 29 42 86 217.5
(*a*) 29 (*b*) 217.5
(*c*) 86 (*d*) 42
(*e*) None of these **[Based on IRMA, 2005]**

98. 4 7 24 196 5488 1075648
(*a*) 24
(*b*) 1075648
(*c*) 196
(*d*) 5488
(*e*) None of these **[Based on IRMA, 2005]**

99. 288 432 648 972 1456 2187
(*a*) 2187 (*b*) 648
(*c*) 1456 (*d*) 972
(*e*) None of these **[Based on IRMA, 2005]**

100. 12 35 136 677 4010 28045
(*a*) 4010 (*b*) 677
(*c*) 136 (*d*) 28045
(*e*) None of these **[Based on IRMA, 2005]**

101. 93 309 434 498 521 533
(*a*) 533 (*b*) 498
(*c*) 434 (*d*) 309
(*e*) None of these **[Based on IRMA, 2005]**

102. 33 376 ? 717 781 808
(*a*) 486 (*b*) 621
(*c*) 493 (*d*) 592
(*e*) None of these **[Based on IRMA, 2006]**

103. 11 20 57 244 1115 ?
(*a*) 4371 (*b*) 6684
(*c*) 3246 (*d*) 5148
(*e*) None of these **[Based on IRMA, 2006]**

104. 8 96 515 2084 6267 ?
(*a*) 12542 (*b*) 9863
(*c*) 10495 (*d*) 8916
(*e*) None of these **[Based on IRMA, 2006]**

105. 96 48 72 180 ? 2835
(*a*) 915 (*b*) 584
(*c*) 630 (*d*) 762
(*e*) None of these **[Based on IRMA, 2006]**

106. 83 71 154 ? 379 604
(*a*) 242
(*b*) 205
(*c*) 308
(*d*) 196
(*e*) None of these **[Based on IRMA, 2006]**

107. 3 52 88 113 129 ?
(*a*) 128 (*b*) 142
(*c*) 133 (*d*) 145
(*d*) None of these

108. 2 3 8 ? 112 565
(*a*) 36 (*b*) 14
(*c*) 27 (*d*) 45
(*d*) None of these

109. 6 4 8 23 ? 385.25
(*a*) 84.5
(*b*) 73
(*c*) 78.5
(*d*) 82
(*e*) None of these

110. 8 64 216 512 ? 1728
(*a*) 729
(*b*) 1331
(*c*) 684
(*d*) 1000
(*e*) None of these

111. 5 11 32 108 444 ?
(*a*) 1780
(*b*) 2230
(*c*) 1784
(*d*) 2225
(*e*) None of these

112. 9 11 15 ? 39 71
(*a*) 29 (*b*) 23
(*c*) 21 (*d*) 27
(*e*) None of these

113. 7 8 12 21 ? 62
(*a*) 42 (*b*) 51
(*c*) 48 (*d*) 35
(*e*) None of these

114. 5 6 16 57 244 ?
(*a*) 1225 (*b*) 992
(*c*) 964 (*d*) 1245
(*e*) None of these

115. 3 19 97 391 ? 2359

(*a*) 1084
(*b*) 1567
(*c*) 1177
(*d*) 1958
(*e*) None of these

116. 848 422 208 100 45 ?

(*a*) 16.5 (*b*) 18
(*c*) 22.5 (*d*) 24
(*e*) None of these

117. 7.5 47.5 87.5 157.5 247.5 357.5 487.5

(*a*) 357.5 (*b*) 87.5
(*c*) 157.5 (*d*) 7.5
(*e*) 47.5

118. 1500 1581 1664 1749 1833 1925 2016

(*a*) 1581
(*b*) 1664
(*c*) 1833
(*d*) 1925
(*e*) 1749

119. 1331 2197 3375 4914 6859 9261 12167

(*a*) 4914 (*b*) 6859
(*c*) 9261 (*d*) 2197
(*e*) 12167

120. 13 16 21 27 39 52 69

(*a*) 21 (*b*) 39
(*c*) 27 (*d*) 52
(*e*) 16

121. 66 91 120 153 190 233 276

(*a*) 120 (*b*) 233
(*c*) 153 (*d*) 276
(*e*) 190

122. 2 8 26 ? 242

(*a*) 78 (*b*) 72
(*c*) 82 (*d*) 84
(*e*) None of these

123. 3 4 12 ? 196

(*a*) 45 (*b*) 40
(*c*) 41 (*d*) 49
(*e*) None of these

124. 9 17 ? 65 129

(*a*) 32 (*b*) 24
(*c*) 35 (*d*) 33
(*e*) None of these

125. 7 13 ? 49 97

(*a*) 27 (*b*) 25
(*c*) 23 (*d*) 29
(*e*) None of these

126. 5 3 6 ? 64.75

(*a*) 15 (*b*) 15.5
(*c*) 17.5 (*d*) 17.25
(*e*) None of these

127. 12 12 18 45 180 1170?

(*a*) 12285
(*b*) 10530
(*c*) 11700
(*d*) 12870
(*e*) 7605

128. 444 467 513 582 674 789?

(*a*) 950 (*b*) 904
(*c*) 927 (*d*) 881
(*e*) 973

129. 1 16 81 256 625 1296?

(*a*) 4096
(*b*) 2401
(*c*) 1764
(*d*) 3136
(*e*) 6561

130. 23 25 53 163 657 3291?

(*a*) 16461
(*b*) 13169
(*c*) 9877
(*d*) 23045
(*e*) 19753

131. 13 13 65 585 7605 129285?

(*a*) 2456415
(*b*) 2235675
(*c*) 2980565
(*d*) 2714985
(*e*) 2197845

132. 649.6875 1299.375 866.25 346.5 99 22?

(*a*) 4 (*b*) 7
(*c*) 10 (*d*) 12
(*e*) None of these

133. 30 16 10 8 8 9?

(*a*) 12.75 (*b*) 13
(*c*) 14 (*d*) 10.5
(*e*) None of theses

134. 10 18 63 253 1137 5901?
(*a*) 39754
(*b*) 35749
(*c*) 37594
(*d*) 35794
(*e*) None of these

135. 11 26 58 124 258 528?
(*a*) 1020
(*b*) 1135
(*c*) 1285
(*d*) 1340
(*e*) None of these

136. 738 765 819 900 1008 1143?
(*a*) 1445 (*b*) 1565
(*c*) 1305 (*d*) 1275
(*e*) None of these

137. 9050 5675 3478 2147 1418 1077 950
(*a*) 3478
(*b*) 1418
(*c*) 5675
(*d*) 2147
(*e*) 1077

138. 7 12 40 222 1742 17390 208608
(*a*) 7 (*b*) 12
(*c*) 40 (*d*) 1742
(*e*) 208608

139. 6 91 584 2935 11756 35277 70558
(*a*) 91 (*b*) 70558
(*c*) 584 (*d*) 2935
(*e*) 35277

140. 1 4 25 256 3125 46656 823543
(*a*) 3125
(*b*) 823543
(*c*) 46656
(*d*) 25
(*e*) 256

141. 8424 4212 2106 1051 526.5 263.25 131.625
(*a*) 131.625
(*b*) 1051
(*c*) 4212
(*d*) 8424
(*e*) 263.25

142. 4 5 12 38 160 805 4836
(*a*) 12 (*b*) 160
(*c*) 38 (*d*) 805
(*e*) None of these

143. 3 7 16 32 56 93 142
(*a*) 56 (*b*) 16
(*c*) 32 (*d*) 7
(*e*) None of these

144. 11 18 29 42 59 80 101
(*a*) 42 (*b*) 18
(*c*) 29 (*d*) 59
(*e*) None of these

145. 2 9 32 105 436 2159 13182
(*a*) 436 (*b*) 2195
(*c*) 9 (*d*) 32
(*e*) None of these

146. 5 5 495 3465 17325 34650 51975
(*a*) 495
(*b*) 34650
(*c*) 55
(*d*) 17325
(*e*) None of these

147. 17 52 158 477 ? 4310
(*a*) 1433
(*b*) 1432
(*c*) 1435
(*d*) 1434
(*e*) None of these

148. 3 22 ? 673 2696 8093
(*a*) 133
(*b*) 155
(*c*) 156
(*d*) 134
(*e*) None of these

149. 6 13 38 ? 532 2675
(*a*) 129
(*b*) 123
(*c*) 172
(*d*) 164
(*e*) None of these

150. 286 142 ? 34 16 7
(*a*) 66 (*b*) 72
(*c*) 64 (*d*) 74
(*e*) None of these

151. 17 9 ? 16.5 35 90
(*a*) 5 (*b*) 15
(*c*) 10 (*d*) 20
(*e*) None of these

152. 0 5 18 43 84 145 ?

(*a*) 220 (*b*) 240

(*c*) 260 (*d*) 280

(*e*) None of these

153. 10 17 48 165 688 3475 ?

(*a*) 27584

(*b*) 25670

(*c*) 21369

(*d*) 20892

(*e*) None of these

154. 1 3 24 360 8640 302400 ?

(*a*) 14525100

(*b*) 154152000

(*c*) 14515200

(*d*) 15425100

(*e*) None of these

155. 12 14 32 102 416 2090 ?

(*a*) 15522

(*b*) 12552

(*c*) 13525

(*d*) 17552

(*e*) None of these

156. 10 15 15 12.5 9.375 6.5625 ?

(*a*) 4.375

(*b*) 3.2375

(*c*) 4.6275

(*d*) 3.575

(*e*) None of these

157. 15 25 40 130 ? 2560

(*a*) 500 (*b*) 520

(*c*) 490 (*d*) 480

(*e*) None of these

158. 186 94 48 25 ? 7.75

(*a*) 13.5 (*b*) 14.8

(*c*) 12.5 (*d*) 14

(*e*) None of these

159. 124 112 176 420 1488 ?

(*a*) 8568 (*b*) 7140

(*c*) 5712 (*d*) 6150

(*e*) None of these

160. 384 381 372 345 264 ?

(*a*) 23 (*b*) 25

(*c*) 43 (*d*) 24

(*e*) None of these

161. 282 286 302 ? 402 502

(*a*) 366

(*b*) 318

(*c*) 326

(*d*) 338

(*e*) None of these

162. 2187 729 243 81 27 9 ?

(*a*) 36 (*b*) 3

(*c*) 18 (*d*) 6

(*e*) 12

163. 522 1235 2661 4800 7652 11217 ?

(*a*) 15495

(*b*) 16208

(*c*) 14782

(*d*) 16921

(*e*) 14069

164. 51975 9450 2100 600 240 160 ?

(*a*) 80 (*b*) 120

(*c*) 320 (*d*) 240

(*e*) 300

165. 4 18 48 100 180 294 ?

(*a*) 416

(*b*) 480

(*c*) 512

(*d*) 384

(*e*) 448

166. 6 26 134 666 3334 16666 ?

(*a*) 84344

(*b*) 83443

(*c*) 84434

(*d*) 83334

(*e*) 83344

167. 30 35 65 100 165 265 ?

(*a*) 270 (*b*) 520

(*c*) 430 (*d*) 395

(*e*) None of these

168. 3 5 7 ? 13 17

(*a*) 9 (*b*) 10

(*c*) 11 (*d*) 8

(*e*) None of these

169. 16 17 15 18 14 ?

(*a*) 10 (*b*) 17

(*c*) 18 (4) 20

(*e*) None of these

170. 3125 256 ? 4 1

(*a*) 27 (*b*) 128

(*c*) 64 (*d*) 32

(*e*) None of these

171. 2 3 6 18 108 ?

(*a*) 126

(*b*) 1944

(*c*) 648

(*d*) 756

(*e*) None of these

172. 9 15 27 51 99?

(*a*) 165

(*b*) 195

(*c*) 180

(*d*) 190

(*e*) None of these

173. 13 21 36 58 87 ?

(*a*) 122

(*b*) 128

(*c*) 133

(*d*) 123

(*e*) None of these

174. 7 9 19 45 95 ?

(*a*) 150 (*b*) 160

(*c*) 145 (*d*) 177

(*e*) None of these

175. 14 15 23 32 96 ?

(*a*) 121 (*b*) 124

(*c*) 152 (*d*) 111

(*e*) None of these

176. 20 24 36 56 84 ?

(*a*) 116 (*b*) 124

(*c*) 120 (*d*) 128

(*e*) None of these

177. 117 389 525 593 627 (?)

(*a*) 654

(*b*) 640

(*c*) 634

(*d*) 630

(*e*) None of these

178. 7 11 23 51 103 (?)

(*a*) 186 (*b*) 188

(*c*) 185 (*d*) 187

(*e*) None of these

179. 18 27 49 84 132 (?)

(*a*) 190 (*b*) 183

(*c*) 180 (*d*) 193

(*e*) None of these

180. 33 43 65 99 145 (?)

(*a*) 201

(*b*) 203

(*c*) 205

(*d*) 211

(*e*) None of these

181. 655 439 314 250 223 (?)

(*a*) 205

(*b*) 210

(*c*) 195

(*d*) 190

(*e*) None of these

182. 15 21 39 77 143 (?)

(*a*) 243

(*b*) 240

(*c*) 253

(*d*) 245

(*e*) None of these

183. 33 39 57 87 129 (?)

(*a*) 183

(*b*) 177

(*c*) 189

(*d*) 199

(*e*) None of these

184. 15 19 83 119 631 (?)

(*a*) 731 (*b*) 693

(*c*) 712 (*d*) 683

(*e*) None of these

185. 19 26 40 68 124 (?)

(*a*) 246 (*b*) 238

(*c*) 236 (*d*) 256

(*e*) None of these

186. 43 69 58 84 73 (?)

(*a*) 62 (*b*) 98

(*c*) 109 (*d*) 63

(*e*) None of these

187. 2.5 4 ? 10 14.5 20 26.5

(*a*) 8 (*b*) 7.5

(*c*) 6 (*d*) 5.5

(*e*) None of these

188. 4 5 12 39 160 805 ?
(*a*) 4836
(*b*) 3224
(*c*) 5642
(*d*) 4030
(*e*) None of these

189. 8 108 189 253 302 ? 363
(*a*) 351
(*b*) 327
(*c*) 338
(*d*) 311
(*e*) None of these

190. 248 217 188 165 ? 129 116
(*a*) 144 (*b*) 136
(*c*) 134 (*d*) 146
(*e*) None of these

191. 3 15 39 75 123 183 ?
(*a*) 255 (*b*) 218
(*c*) 243 (*d*) 225
(*e*) None of these

192.

12	30	120	460	1368	2730
16	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)

What will come in place of (*d*)?
(*a*) 1384 (*b*) 2642
(*c*) 2808 (*d*) 1988
(*e*) None of these

[Based on IRMA, 2009]

193.

154	462	231	693	346.51039.5
276	(*a*)	(*b*)	(*c*)	(*d*) (*e*)

What will come in place of (*e*)?
(*a*) 1746 (*b*) 621
(*c*) 1242 (*d*) 983
(*e*) None of these

[Based on IRMA, 2009]

194.

7	91	1001	7007	35035105105
14.5	(*a*)	(*b*)	(*c*)	(*d*) (*e*)

What will come in place of (*c*)?
(*a*) 21132.5 (*b*) 14514.5
(*c*) 20020.5 (*d*) 13864.5
(*e*) None of these

[Based on IRMA, 2009]

195.

582	574	601	537	662	446
2004	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)

What will come in place of (*d*)?
(*a*) 2084 (*b*) 68
(*c*) 174 (*d*) 331
(*e*) None of these

[Based on IRMA, 2009]

196.

85	43	44	67.5	137	345
125	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)

What will come in place of (*c*)?
(*a*) 86 (*b*) 107.5
(*c*) 112.5 (*d*) 97.5
(*e*) None of these

[Based on IRMA, 2009]

197. Consider the series (1), (2, 3) (4, 5, 6), (7, 8, 9, 10), … Find the sum of numbers in fiftieth such bracket.
(*a*) 62525 (*b*) 1225
(*c*) 12525 (*d*) 13225

[Based on ATMA, 2005]

198. 1 7 49 343 (?)
(*a*) 16807 (*b*) 1227
(*c*) 2058 (*d*) 2401
(*e*) None of these

199. 13 20 39 78 145 (?)
(*a*) 234 (*b*) 244
(*c*) 236 (*d*) 248
(*e*) None of these

200. 12 35 81 173 357 (?)
(*a*) 725 (*b*) 715
(*c*) 726 (*d*) 736
(*e*) None of these

201. 3 100 297 594 991 (?)
(*a*) 1489
(*b*) 1479
(*c*) 1478
(*d*) 1498
(*e*) None of these

202. 112 119 140 175 224 (?)
(*a*) 277 (*b*) 276
(*c*) 287 (*d*) 266
(*e*) None of these

203. 21 27 48 75 123 198 323
(*a*) 198 (*b*) 323
(*c*) 75 (*d*) 27
(*e*) None of these

[Based on NMAT, 2008]

204. 32 52 87 146.5 245.75 403.125 653.6875
(*a*) 52
(*b*) 87
(*c*) 245.75
(*d*) 403.125
(*e*) None of these

[Based on NMAT, 2008]

205. 16 17 32 99 392 1960 11784

(*a*) 17 (*b*) 99

(*c*) 11784 (*d*) 1960

(*e*) None of these

[Based on NMAT, 2008]

206. 5 9 18 34 60 95 144

(*a*) 144 (*b*) 95

(*c*) 18 (*d*) 9

(*e*) None of these

[Based on NMAT, 2008]

207. 36 54 81 120.5 182.25 273.375 410.0625

(*a*) 54 (*b*) 81

(*c*) 120.5 (*d*) 273.375

(*e*) None of these

[Based on NMAT, 2008]

208. 4 10 40 190 940 ? 23440

(*a*) 4690

(*b*) 2930

(*c*) 5140

(*d*) 3680

(*e*) None of these

209. 4000 2008 1012 ? 265 140.5 78.25

(*a*) 506

(*b*) 514

(*c*) 520

(*d*) 512

(*e*) None of these

210. 7 4 5 9 ? 52.5 160.5

(*a*) 32 (*b*) 16

(*c*) 14 (*d*) 20

(*e*) None of these

211. 5 54 90 115 131 140 ?

(*a*) 149 (*b*) 146

(*c*) 142 (*d*) 152

(*e*) None of these

212. 6 42 ? 1260 5040 15120 30240

(*a*) 546

(*b*) 424

(*c*) 252

(*d*) 328

(*e*) None of these

213. 13 16 22 33 51 (?)

(*a*) 89 (*b*) 78

(*c*) 102 (*d*) 69

(*e*) None of these

214. 39 52 78 117 169 (?)

(*a*) 246

(*b*) 182

(*c*) 234

(*d*) 256

(*e*) None of these

215. 656 432 320 264 236 (?)

(*a*) 222

(*b*) 229

(*c*) 232

(*d*) 223

(*e*) None of these

216. 62 87 187 412 812 (?)

(*a*) 1012

(*b*) 1437

(*c*) 1337

(*d*) 1457

(*e*) None of these

217. 7 8 24 105 361 (?)

(*a*) 986

(*b*) 617

(*c*) 486

(*d*) 1657

(*e*) None of these

218. 9 62 ? 1854 7415 22244

(*a*) 433 (*b*) 309

(*c*) 406 (*d*) 371

(*e*) None of these

219. 4 8 24 60 ? 224

(*a*) 178 (*b*) 96

(*c*) 109 (*d*) 141

(*e*) None of these

220. 8000 1600 320 64 12.8 ?

(*a*) 2.56 (*b*) 3.5

(*c*) 3.2 (*d*) 2.98

(*e*) None of these

221. 6 9 15 27 51 ?

(*a*) 84 (*b*) 99

(*c*) 123 (*d*) 75

(*e*) None of these

222. 7 8 18 ? 232 1165

(*a*) 84 (*b*) 42

(*c*) 57 (*d*) 36

(*e*) None of these

223. 9 19 40 83 ? 345 696

(*a*) 162 (*b*) 170

(*c*) 175 (*d*) 166

(*e*) None of these

Answer Keys

Difficulty Level-1

1. (*b*)	**2.** (*c*)	**3.** (*b*)	**4.** (*b*)	**5.** (*d*)	**6.** (*c*)	**7.** (*c*)	**8.** (*a*)	**9.** (*c*)	**10.** (*d*)	**11.** (*b*)	**12.** (*b*)	**13.** (*c*)
14. (*c*)	**15.** (*d*)	**16.** (*a*)	**17.** (*d*)	**18.** (*b*)	**19.** (*c*)	**20.** (*a*)	**21.** (*b*)	**22.** (*e*)	**23.** (*c*)	**24.** (*c*)	**25.** (*d*)	**26.** (*b*)
27. (*d*)	**28.** (*d*)	**29.** (*c*)	**30.** (*c*)	**31.** (*c*)	**32.** (*c*)	**33.** (*b*)	**34.** (*d*)	**35.** (*d*)	**36.** (*d*)	**37.** (*d*)	**38.** (*a*)	**39.** (*e*)
40. (*c*)	**41.** (*d*)	**42.** (*a*)	**43.** (*a*)	**44.** (*c*)	**45.** (*c*)	**46.** (*d*)	**47.** (*a*)	**48.** (*a*)	**49.** (*d*)	**50.** (*c*)	**51.** (*e*)	**52.** (*c*)
53. (*c*)	**54.** (*a*)	**55.** (*d*)	**56.** (*c*)	**57.** (*c*)	**58.** (*a*)	**59.** (*a*)	**60.** (*c*)	**61.** (*d*)	**62.** (*b*)	**63.** (*c*)	**64.** (*b*)	**65.** (*d*)
66. (*c*)	**67.** (*c*)	**68.** (*d*)	**69.** (*b*)	**70.** (*b*)	**71.** (*d*)	**72.** (*e*)	**73.** (*a*)	**74.** (*c*)	**75.** (*a*)	**76.** (*c*)	**77.** (*d*)	**78.** (*e*)
79. (*a*)	**80.** (*c*)	**81.** (*e*)	**82.** (*b*)	**83.** (*c*)	**84.** (*a*)	**85.** (*b*)	**86.** (*b*)	**87.** (*e*)	**88.** (*c*)	**89.** (*c*)	**90.** (*c*)	**91.** (*c*)
92. (*d*)	**93.** (*b*)	**94.** (*c*)	**95.** (*c*)	**96.** (*e*)	**97.** (*a*)	**98.** (*a*)	**99.** (*c*)	**100.** (*b*)	**101.** (*e*)	**102.** (*d*)	**103.** (*b*)	**104.** (*a*)
105. (*c*)	**106.** (*e*)	**107.** (*e*)	**108.** (*c*)	**109.** (a)	**110.** (*d*)	**111.** (*b*)	**112.** (*b*)	**113.** (*e*)	**114.** (*d*)	**115.** (*c*)	**116.** (*a*)	**117.** (*e*)
118. (*c*)	**119.** (*a*)	**120.** (*c*)	**121.** (*b*)	**122.** (*e*)	**123.** (*a*)	**124.** (*d*)	**125.** (*b*)	**126.** (*c*)	**127.** (*a*)	**128.** (*c*)	**129.** (*b*)	**130.** (*e*)
131. (*d*)	**132.** (*a*)	**133.** (*d*)	**134.** (*b*)	**135.** (*e*)	**136.** (*c*)	**137.** (*e*)	**138.** (*d*)	**139.** (*c*)	**140.** (*d*)	**141.** (*b*)	**142.** (*c*)	**143.** (*a*)
144. (*e*)	**145.** (*d*)	**146.** (*b*)	**147.** (*c*)	**148.** (*d*)	**149.** (*a*)	**150.** (*e*)	**151.** (*e*)	**152.** (*e*)	**153.** (*d*)	**154.** (*c*)	**155.** (*b*)	**156.** (*a*)
157. (*e*)	**158.** (*a*)	**159.** (*b*)	**160.** (*e*)	**161.** (*d*)	**162.** (*b*)	**163.** (*a*)	**164.** (*c*)	**165.** (*e*)	**166.** (*d*)	**167.** (*c*)	**168.** (*b*)	**169.** (*e*)
170. (*a*)	**171.** (*b*)	**172.** (*b*)	**173.** (*d*)	**174.** (*d*)	**175.** (*a*)	**176.** (*c*)	**177.** (*e*)	**178.** (*d*)	**179.** (*d*)	**180.** (*b*)	**181.** (*e*)	**182.** (*e*)
183. (*a*)	**184.** (*a*)	**185.** (*c*)	**186.** (*e*)	**187.** (*e*)	**188.** (*a*)	**189.** (*c*)	**190.** (*d*)	**191.** (*a*)	**192.** (*c*)	**193.** (*e*)	**194.** (*a*)	**195.** (*a*)
196. (*d*)	**197.** (*a*)	**198.** (*d*)	**199.** (*d*)	**200.** (*a*)	**201.** (*e*)	**202.** (*c*)	**203.** (*b*)	**204.** (*c*)	**205.** (*d*)	**206.** (*e*)	**207.** (*c*)	**208.** (*a*)
209. (*b*)	**210.** (*d*)	**211.** (*e*)	**212.** (*c*)	**213.** (*b*)	**214.** (*c*)	**215.** (*a*)	**216.** (*b*)	**217.** (*a*)	**218.** (*d*)	**219.** (*e*)	**220.** (*a*)	**221.** (*b*)
222. (*c*)	**223.** (*b*)											

Explanatory Answers

Difficulty Level-1

1. (*b*) The sequence in the given series is + 6, + 12, + 24, + 48, + 96, + 192. Hence the number 48 must be replaced by 50.

2. (*c*) Series I: 11 20 38 74

The sequence in this series is × 2 – 2.

Series II: 5 12 26 24

The sequence in this series is × 2 + 2. Hence the number 40 must be replaced by 38.

3. (*b*) The sequence in the given series is + 2, + 4, + 2, + 4, + 2, + 4. Therefore, 14 must be replaced by 18.

4. (*b*) The terms of the given series are $1^3 + 2$, $2^3 + 2$, $3^3 + 2$, $4^3 + 2$, $5^3 + 2$, $6^3 + 2$.

5. (*d*) Here 2 must be replaced by 1 and 12 must be replaced by 3.

Then, the sequence in the series will be + 4, + 8, + 12, + 16, + 20.

6. (*c*) Sum of the numbers in each column is a perfect square.

7. (*c*) Sum of the numbers in each column is a perfect square.

8. (*a*) The sequence in the given series is × 2 ÷ 2.

9. (*c*) The sequence in the given series is + 3, + 4, + 5, + 6, + 7.

10. (*d*) The sequence in the given series is + 8, + 16, + 32, + 64, + 128.

11. (*b*) $(6 + 2 + 3 + 2)^2 - 1 = 169 - 1 = 168$

$(5 + 1 + 2 + 3)^2 - 1 = 121 - 1 = 120$

$(3 + 5 + 4 + 2)^2 - 1 = 196 - 1 = 195$

12. (*b*) The sequence in the given series is + 9, + 21, + 39, + 63. Therefore, the next number should be 138.

13. (*c*) The sequence in the given series is × 3.

14. (*c*) The sequence in the given series is – 545, – 469, – 397, – 333, because in the series 545, 469, 397, 333 the sequence is – 76, – 72, – 64.

15. (*d*) The sequence in the given series is
× (–3), × (–5) × (–7), × (–9), × (–11), × (–13).

16. (*a*) The sequence in the given series is + 5, – 2, + 5, – 2.

17. (*d*) The terms of the given series are
$10^3 - 1$, $9^3 + 1$, $8^3 - 1$, $7^3 + 1$, $6^3 - 1$, $5^3 + 1$.

18. (*b*) The sequence in the given series is × 3, × 5, × 7, × 9, × 11.

19. (*c*) The sequence in the given series is × 1 + 7, × 2 + 6, × 3 + 5, × 4 + 4, × 5 + 3.

∴ The new series formed must be 7, 14, 34, 107,...

20. (*a*) The sequence in the given series is $\times \frac{1}{2} + 1, \times 1 + 1, \times 1.5 + 1, \times 2 + 1, \times 2.5 + 1$

The new series formed must be 6, 4, 5, 8.5, 18, 46.

21. (*b*) The sequence in the given series is $\times 1 + 1^3, \times 2 + 2^3, \times 3 + 3^3, \times 4 + 4^3, \times 5 + 5^3$.

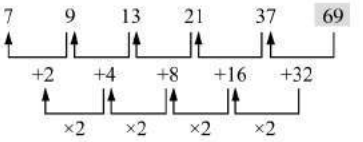
$\therefore$ The new series must be 1, 2, 12, 63, 316,...

22. (*e*) 48, 24, 72, 36, 108, ? ÷ 2, × 3 (series)

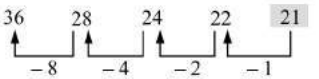
$48, 48 \div 2 = 24, 24 \times 3 = 72, 72 \div 3 = 36, 36 \times 3 = 108$

$108 \div 2 = 54$

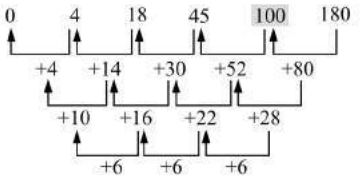
23. (*c*)



24. (*c*)



25. (*d*)



26. (*b*) 9 8 7

↓ ↓ ↓

I H G

Likewise,

6 5 4

↓ ↓ ↓

F E D

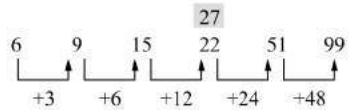
27. (*d*) $5^2 - 1 = 24; 5^3 + 1 = 126$ ::

$7^2 - 1 = 48; 7^3 + 1 = 344$

28. (*d*) $(1)^3 = 1; (2)^3 = 8$ ::

$(3)^3 = 27; (4)^3 = 64$

29. (*c*)



$\therefore$ 22 should be replaced by 27.

30. (*c*) $8 \xrightarrow{+7} 15 \xrightarrow{+21} 36 \xrightarrow{+63}$

$99 \xrightarrow{+189} 288 \xrightarrow{+567} 855$

The difference between the consecutive term keeps on multiplying by 3.

31. (*c*) $2^2 = 4, 4^2 = 16, 8^2 = 64$

Consider the alternative term

$2^2 = 4, 4^2 = 16, ? = ?, 8^2 = 64$

Hence ? has to be replaced by $(6)^2 = 36$

32. (*c*) $6 - 5 = 1$

$8 - ? = 2$

$-? = 2 - 8$

$-? = -6$

$\therefore \quad ? = 6$

33. (*b*) 5, 21, 69, 213, 645

$21 - 5 = 16$

$\therefore \quad 16 \times 3 = 48$

$69 - 21 = 48$

and, $48 \times 3 = 144$

$213 - 69 = 144$

$\therefore \quad 144 \times 3 = 432$

$645 - 213 = 432$

$432 \times 3 = 1296$

Likewise,

$? - 645 = 1296$

$\therefore \quad ? = 1296 + 645$

$? = 1941$

34. (*d*) $11 \times 11 = 121$

$12 \times 12 = 144$

Difference $= 17 - 12 = 5$

$17 \times 17 = 289$

$18 \times 18 = 324$

Difference $= 23 - 18 = 5$

$23 \times 23 = 529$

$24 \times 24 = 576$

Likewise,

$? - 24 = 5$

$? = 29$

Hence, $29 \times 29 = 729$

35. (*d*) $19 - 14 = 5$

$29 - 19 = 10$

$49 - 29 = 20$

$89 - 49 = 40$

Likewise,

$? - 89 = 80$

$? = 80 + 89$

$? = 169$

36. (*d*) 34, 18, 10, ?

$34 - 18 = 16$

$18 - 10 = 8$ } $16 \div 2 = 8$, $8 \div 2 = 4$

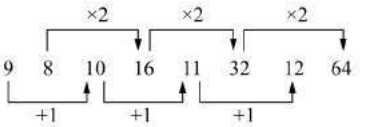
$10 - ? = 4$

Therefore, $-? = 4 - 10$

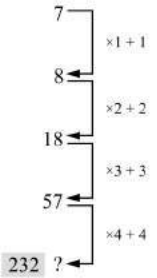
$\Rightarrow \quad = ? = -6$

$\Rightarrow \quad ? = 6$

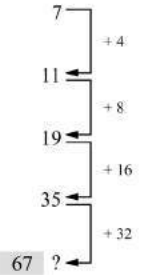
37. (*d*)



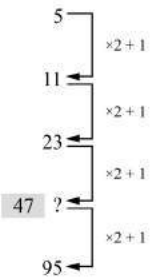
38. (*a*)



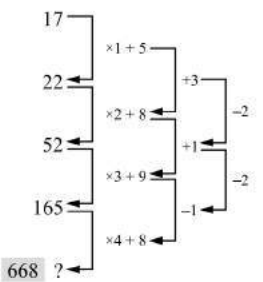
39. (*e*)



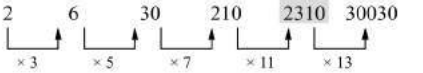
40. (*c*)



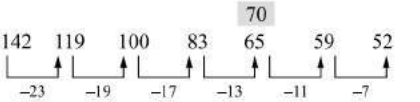
41. (*d*)



42. (*a*)



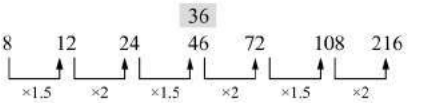
43. (*a*)



So, wrong number = 65

Correct number = 83 – 13 = 70

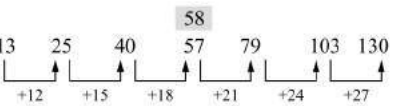
44. (*c*)



So, wrong number = 46

Correct number = 24 × 1.5 = 36

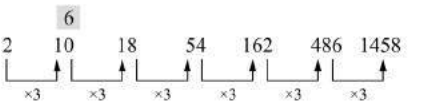
45. (*c*)



So, wrong number = 57

Correct number = 40 + 18 = 58

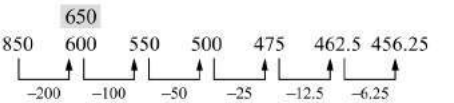
46. (*d*)



So, wrong number = 10

Correct number = 2 × 3 = 6

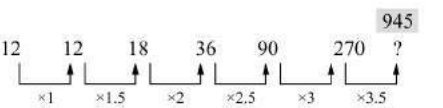
47. (*a*)



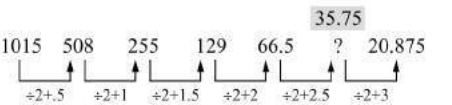
So, wrong number = 600

Correct number = 850 – 200 = 650

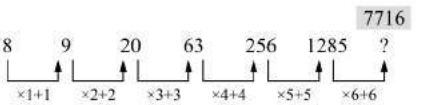
48. (*a*)



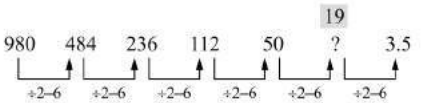
49. (*d*)



50. (*c*)



51. (*e*)



52. (*c*) $a = -3, d = 3$

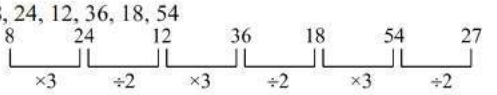
$\therefore \quad T_{10} = a + (10 - 1) \times d$

$T_{10} = -3 + 9 \times 3 = 24$

53. (*c*) By hit and trial or common sense,

$2 = (-1)^2 + (0)^2 + (1)^2$

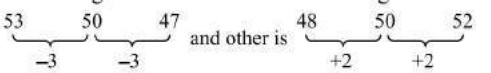
54. (*a*) 8, 24, 12, 36, 18, 54



Hence, 27 will come in the blank space.

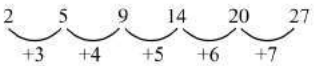
55. (*d*) 53, 48, 50, 50, 47, ...

The above series can be splitted into two series one in ascending order and other in descending order



Hence, 52 will be the next number.

56. (*c*)



Hence, the next number of the series will be 27.

57. (*c*) The sequence in the given series is + 16, + 18, + 20, + 22. Hence the number 108 must be replaced by 110.

58. (*a*) The sequence in the given series is

$\times 1 + 1, \times 2 + 2, \times 3 + 3, \times 4 + 4, \times 5 + 5.$

59. (*a*) The sequence in the given series is $\times 5, \times 2, \times 5, \times 2, \times 5$.

60. (*c*) The sequence in the given series is + 3, + 4, + 5, + 6, + 7.

61. (*d*) The numbers at even places form an *AP*, e.g., 48, 50, 52, …

62. (*b*) $64 \times (-2) = -128$

63. (*c*) The given series is | 2 | 143 165

The series is of the form 121 + 143 + 165 + …

It is in AP with common difference 22.

Hence, the next term is 165 + 22 = 187

64. (*b*) The given series is 8 14 26 50 98.

$14 = (8 \times 2) - 2$

$26 = (14 \times 2) - 2$

$50 = (26 \times 2) - 2$

Hence, the next term must be $(98 \times 2) - 2 = 194$.

65. (*d*) 8 13 21 32 46

The difference between the consecutive terms forms a series of 5 + 8 + 11 + 14 + ...

8, (8 + 5), (13 + 8), (21 + 11), (32 + 14), ...

Hence, the next term must be 46 + 17 = 63.

66. (*c*) 2 8 20 44 92 188

2, (2 + 6), (8 + 12), (20 + 24), (44 + 48), (92 + 96)

Hence, the next term must be 188 + 192 = 380.

67. (*c*) 1 3 10 21 64 129

1, 3, 7, 15, 31, 63, …

1, (1 × 2) + 1, (3 × 2) + 1, (7 × 2) + 1, (15 × 2) + 1, (31 × 2) + 1

Hence, the next term must be (63 × 2) + 1 = 127.

68. (*d*) 13 102 164 129

1, 3, 10, 21, 64, 129, …

1, (1 × 2) + 1, (3 × 3) + 1, (10 × 2) + 1, (21 × 3) + 1, (64 × 2) + 1, (129 × 3) + 1

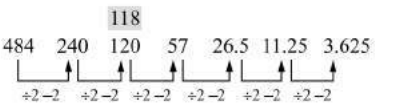
Hence, the last term is (129 × 3) + 1 = 388.

69. (*b*) 15 16 20 294

$15, 15 + 1^2, 16 + 2^2, 20 + 3^2, 29 + 4^2, 45 + 5^2$

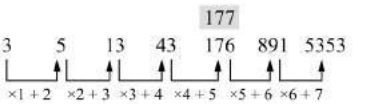
Hence, the next three terms must be 570.

70. (*b*)



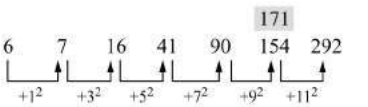
Hence, wrong number is 120.

71. (*d*)



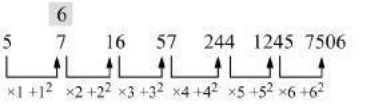
Hence, wrong number is 176.

72. (*e*)



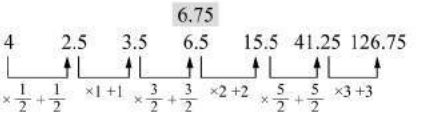
Hence, wrong number is 154.

73. (*a*)



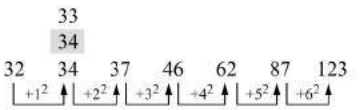
Hence wrong number is 7.

74. (*c*)



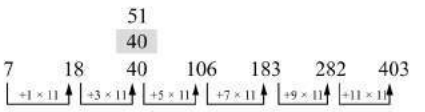
Hence wrong number is 6.5.

75. (*a*)



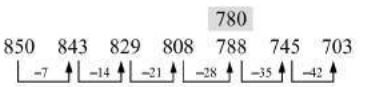
So, the wrong number is 34 which must be 33.

76. (*c*)



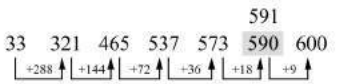
So, the wrong number is 40 which must be 51.

77. (*d*)



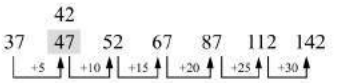
So, the wrong number is 788 which must be 780.

78. (*e*)



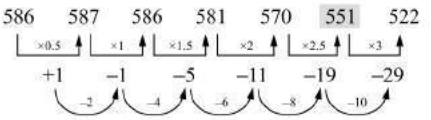
So, the wrong number is 590 which must be 591.

79. (*a*)

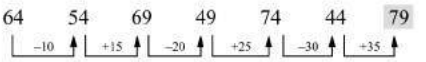


So, the wrong number is 47 which must be 42.

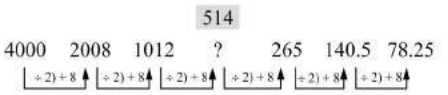
80. (*c*)



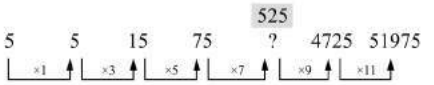
81. (*e*)



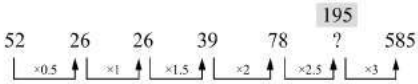
82. (*b*)



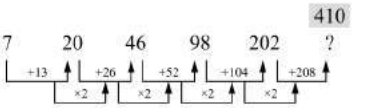
83. (*c*)



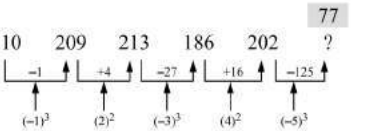
84. (*a*)



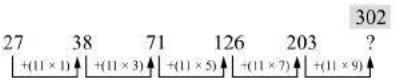
85. (*b*)



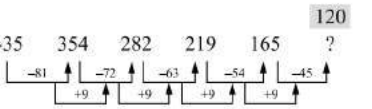
86. (*b*)



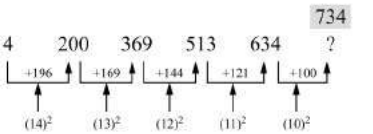
87. (*e*)



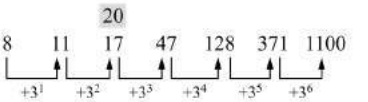
88. (*c*)



89. (*c*)



90. (*c*)

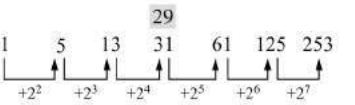


Right number $= 11 + 3^2$

$= 11 + 9 = 20$

Wrong number is 17.

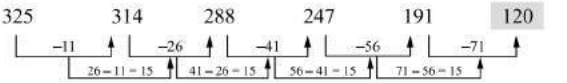
91. (*c*)



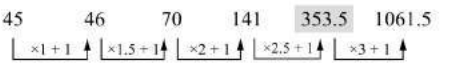
Wrong number is 31.

Right number $= 13 + 2^4 = 13 + 16 = 29.$

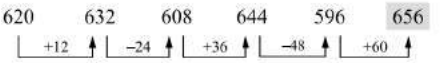
92. (*d*)



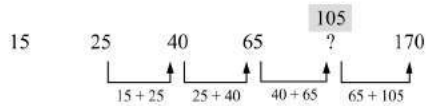
93. (*b*)



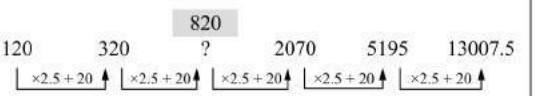
94. (*c*)



95. (*c*)



96. (*e*)



97. (*a*) $51 \times \frac{1}{2} + \frac{1}{2} = 26$

$26 \times 1 + 1 = 27$

$27 \times 1.5 + 1.5 = 42$

Therefore, wrong number is 29.

98. (*a*) The given pattern is

$4 \times 7 = 28$

$7 \times 28 = 196$

$28 \times 196 = 5488$

$196 \times 5488 = 1075648$

The wrong number is 24.

99. (*c*) The given pattern is

$288 \times \frac{3}{2} = 432$

$432 \times \frac{3}{2} = 648$

$648 \times \frac{3}{2} = 972$

$972 \times \frac{3}{2} = 1458$

The wrong number is 1456.

100. (*b*) The given pattern is

$12 \times 3 - 1^2, 35 \times 4 - 2^2, 136 \times 5 - 3^2,$

$671 \times 6 - 4^2, 4010 \times 7 - 5^2$

Hence, the wrong number is 677.

101. (*e*) The given pattern is

$93 + 6^3 = 309$

$309 + 5^3 = 434$

$434 + 4^3 = 498$

$498 + 3^3 = 525$

$525 + 2^3 = 533$

Hence, the wrong number is 521.

102. (*d*) 33 376 ? 717 781 808

$808 - 781 = 27 = 3^3$

$781 - 717 = 64 = 4^3$

$717 - 5^3 = 717 - 125 = 592$

103. (*b*) $11 \times 2 - 2 = 20$

$20 \times 3 - 3 = 57$

$57 \times 4 - 4 = 224$

$224 \times 5 - 5 = 1115$

$1115 \times 6 - 6 = 6690 - 6 = 6684$

104. (*a*) $8 \times 6 + 48 = 96$

$96 \times 5 + 35 = 515$

$515 \times 4 + 24 = 2084$

$2084 \times 3 + 15 = 6267$

$6267 \times 2 + 8 = 12542$

105. (*c*) $96 \times 0.5 = 48$

$48 \times 1.5 = 72$

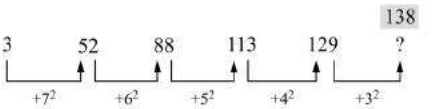
$72 \times 2.5 = 180$

$180 \times 3.5 = 630$

106. (*e*) $83 + 71 = 154$

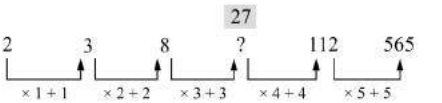
$71 + 154 = 225$

107. (*e*)



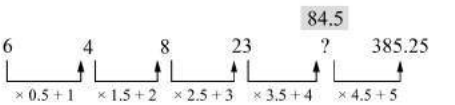
So, 138 is the answer.

108. (*c*)



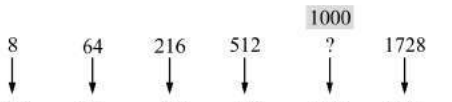
So, the answer is 27.

109. (*a*)



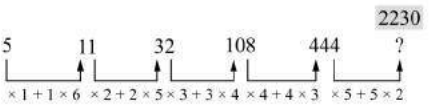
So, the answer is 84.5.

110. (*d*)



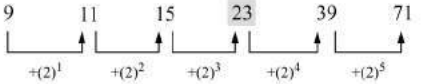
So, the answer is 1000.

111. (*b*)



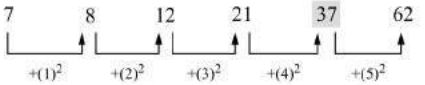
So, the answer is 2230.

112. (*b*)



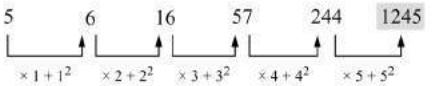
So, 23 will come at the place of question mark (?).

113. (*e*)



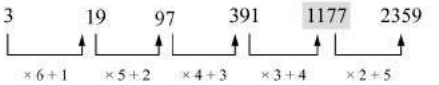
So, 37 will come at the place of question mark (?).

114. (*d*)



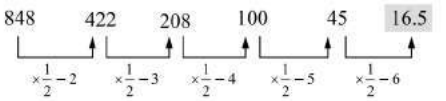
So, 1245 will come at the place of question mark (?).

115. (*c*)



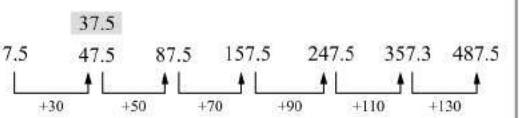
So, 1177 will come at the place of question mark (?).

116. (*a*)



So, 16.5 will come at the place of question mark (?).

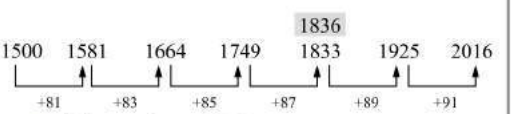
117. (*e*)



Right number = 7.5 + 30 = 37.5

So, wrong number = 47.5.

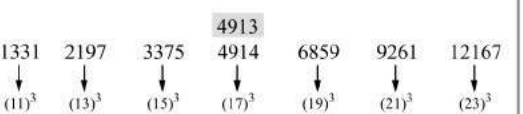
118. (*c*)



Right number = 1836

So, wrong number = 1833.

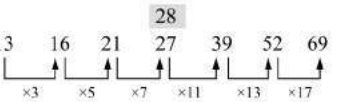
119. (*a*)



Right number = $(17)^3 = 4913$

So, wrong number = 4914.

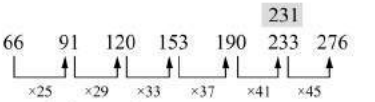
120. (*c*)



Right number = 21 + 7 = 28

So, wrong number = 27.

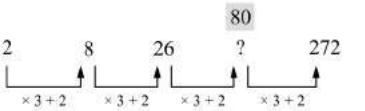
121. (*b*)



Right number = 190 + 41 = 231

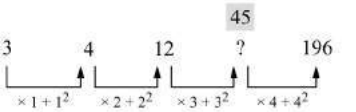
So, wrong number = 233.

122. (*e*)



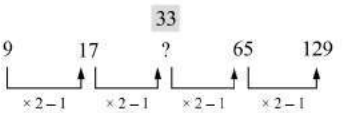
So, 80 will come at the place of question mark.

123. (*a*)



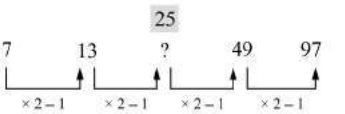
Hence, the answer is 45.

124. (*d*)



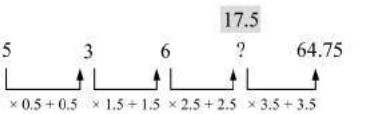
Hence, the answer is 33.

125. (*b*)



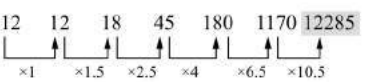
Hence, the answer is 25.

126. (*c*)



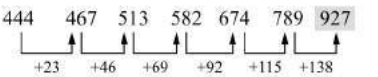
Hence, the answer is 17.5.

127. (*a*)



So, 12285 will come at the place of question mark.

128. (*c*)



So, 927 will come at the place of question mark.

129. (*b*)

1	16	81	256	625	1296	2401
↓	↓	↓	↓	↓	↓	
$(2)^2$	$(3)^4$	$(4)^4$	$(5)^4$	$(6)^4$	$(7)^4$	

So, 2401 will come at the place of question mark.

130. (*e*)

23	25	53	163	657	3291	19753
	×1 + 2	×2 + 3	×3 + 4	×4 + 5	×5 + 6	×6 + 7

So, 19753 will come at the place of question mark.

131. (*d*)

13	13	65	585	7605	129285	2714985
	×1	×5	×9	×13	×17	×21

So, 2714985 will come at the place of question mark.

132. (*a*)

649.6875	1299.375	866.25	346.5	99	22	4
	$\times\frac{2}{1}$	$\times\frac{2}{3}$	$\times\frac{2}{5}$	$\times\frac{2}{7}$	$\times\frac{2}{9}$	$\times\frac{2}{11}$

So, 4 will come at the place of question mark.

133. (*d*)

30	16	10	8	8	9	10.5
	$\times\frac{1}{2}+1$	$\times\frac{1}{2}+2$	$\times\frac{1}{2}+3$	$\times\frac{1}{2}+4$	$\times\frac{1}{2}+5$	$\times\frac{1}{2}+6$

So, 10.5 will come at the place of question mark.

134. (*b*)

10	18	63	253	1137	5901	35749
	$\times1+2^3$	$\times2+2^3$	$\times3+4^3$	$\times4+5^3$	$\times5+6^3$	$\times6+7^3$

So, 35749 will come at the place of question mark.

135. (*e*)

11	26	58	124	258	528	1070
	×2+4	×2+6	×2+8	×2+10	×2+12	×2+14

So, 1070 will come at the place of question mark.

136. (*c*)

738	765	819	900	1008	1143	1305
	+27	+54	+81	+108	+135	+162

So, 1305 will come at the place of question mark.

137. (*e*)

9050	5675	3478	2147	1418	1075	950
	$(5)^3$	$(7)^3$	$(9)^3$	$(11)^3$	$(13)^3$	$(15)^3$

∴ Hence, 1077 is wrong number.

138. (*d*)

$7 \times 2 - 2 = 12$

$12 \times 4 - 8 = 40$

$40 \times 6 - 18 = 222$

$222 \times 8 - 32 = 1742 \rightarrow 1744$

$1744 \times 10 - 50 = 17390$

$17390 \times 12 - 72 = 208608$

Hence, 1742 is wrong number.

Here, $2 = 2 \times \frac{2}{2}$; $8 = 4 \times \frac{4}{2}$; $18 = 6 \times \frac{6}{2}$

$32 = 8 \times \frac{8}{2}$; $50 = 10 \times \frac{10}{2}$; $72 = 12 \times \frac{12}{2}$

139. (*c*)

6	91	582	2935	11756	35277	70558
	(6+7)×7	(91+6)×6	(582+5)×5	(2935+4)×4	(11756+3)×3	(35277+2)×2

Hence, 584 is the wrong number.

140. (*d*)

1	4	27	256	3125	46656	823543
↓	↓	↓	↓	↓	↓	↓
$(1)^1$	$(2)^2$	$(3)^3$	$(4)^4$	$(5)^5$	$(6)^6$	$(7)^7$

Hence, 25 is the wrong number.

141. (*b*)

8424	4212	2106	1053	526.5	263.25	131.625
	÷ 2	÷ 2	÷ 2	÷ 2	÷ 2	÷ 2

Hence, 1051 is the wrong number.

142. (*c*)

4	5	12	39	160	805	4836
	×1 + 1	×2 + 2	×3 + 3	×4 + 4	×5 + 5	×6 + 6

Hence, the wrong number is 38.

Right number = $12 \times 3 + 3 = 36 + 3 = 39$

143. (*a*)

3	7	16	32	57	93	142
	$+(2)^2$	$+(3)^2$	$+(4)^2$	$+(5)^2$	$+(6)^2$	$+(7)^2$

Hence, the wrong number is 56.

Right number = $32 + (5)^2$

$= 32 + 25$

$= 57.$

144. (*e*)

11	18	29	42	59	78	101
	+7	+11	+13	+17	+19	+23

Hence, the wrong number is 78.

Right number = 59 + 19 = 78.

145. (*d*)

2	9	30	105	436	2195	13182
	×1+(1×7)	×2+(2×6)	×3+(3×5)	×4+(4×4)	×5+(5×3)	×6+(6×2)

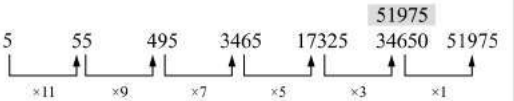
So, the wrong number is 32.

Right number = $9 \times 2 + 2 \times 6$

$= 18 + 12$

$= 30.$

146. (*b*)

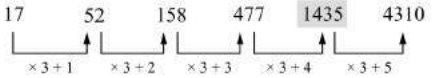


So, the wrong number is 34650.

Right number = 17325×3

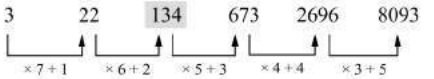
$= 51975.$

147. (*c*)



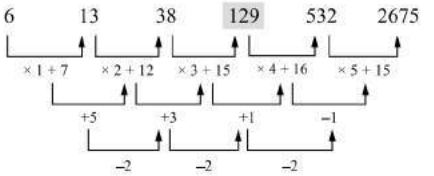
? = 1435

148. (*d*)



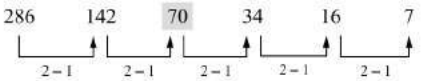
? = 134

149. (*a*)



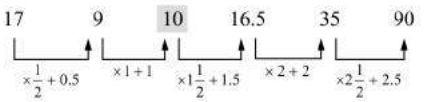
? = 70

150. (*e*)



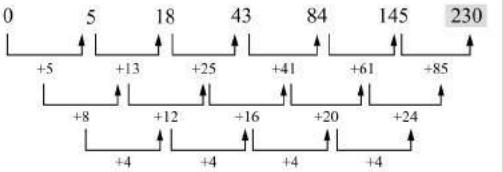
? = 129

151. (*c*)

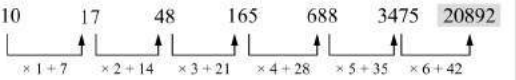


? = 10

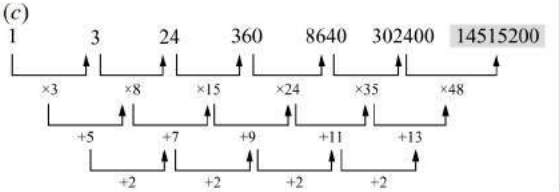
152. (*e*)



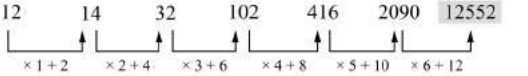
153. (*d*)



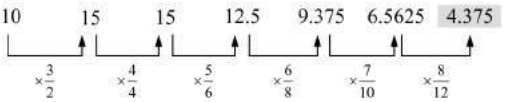
154. (*c*)



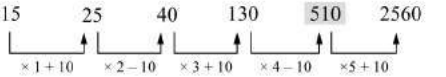
155. (*b*)



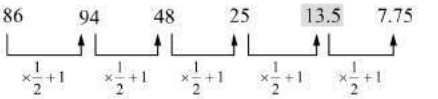
156. (*a*)



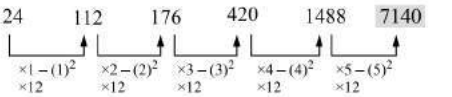
157. (*e*)



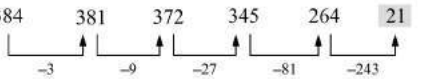
158. (*a*)



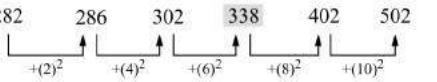
159. (*b*)



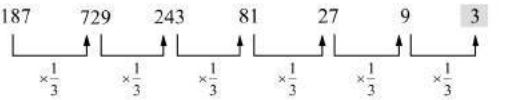
160. (*e*)



161. (*d*)

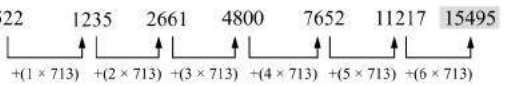


162. (*b*)



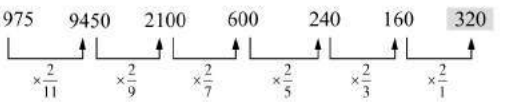
So, 3 will come at the place of question mark.

163. (*a*)



So, 15495 will come at the place of question mark.

164. (*c*)



So, 320 will come at the place of question mark.

165. (*e*) $4 \rightarrow 2 \times 2$

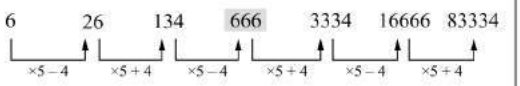
$18 \rightarrow 3 \times 6$

$48 \rightarrow 4 \times 12$

$100 \rightarrow 5 \times 20$
$180 \rightarrow 6 \times 30$
$294 \rightarrow 7 \times 42$
$448 \rightarrow 8 \times 56$

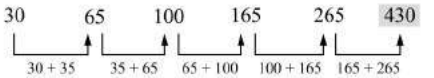
So, 448 will come at the place of question mark.

166. (*d*)

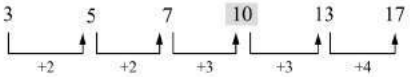


So, 83334 will come at the place of question mark.

167. (*c*)

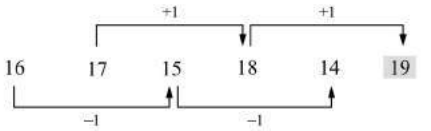


168. (*b*)



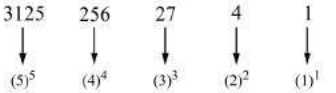
So, 10 will come at the place of question mark.

169. (*e*)



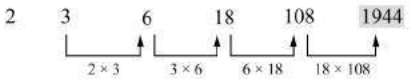
So 19 will come at the place of question mark.

170. (*a*)



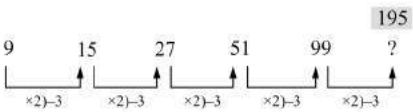
So, 27 will come at the place of question mark.

171. (*b*)

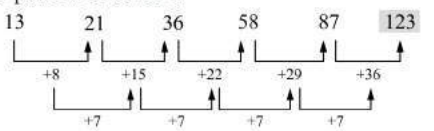


So, 1944 will come at the place of question mark.

172. (*b*)



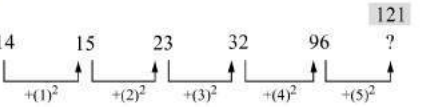
173. (*d*) The pattern of series is



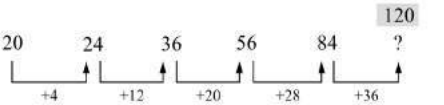
174. (*d*) The pattern of series is

$7 + (1)^2 + 1 = 9$
$+2 \downarrow$
$9 + (3)^2 + 1 = 19$
$+2 \downarrow$
$19 + (5)^2 + 1 = 45$
$+2 \downarrow$
$45 + (7)^2 + 1 = 95$
$+2 \downarrow$
$95 + (9)^2 + 1 = 177$

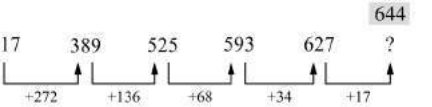
175. (*a*)



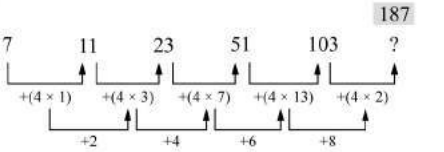
176. (*c*)



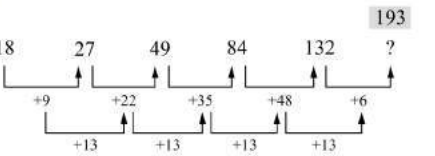
177. (*e*)



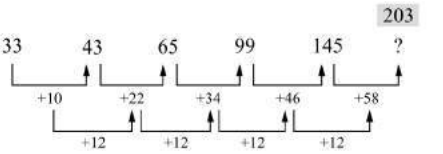
178. (*d*)



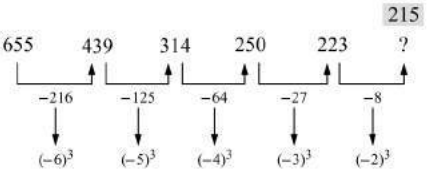
179. (*d*)



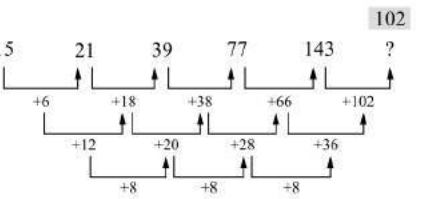
180. (*b*)



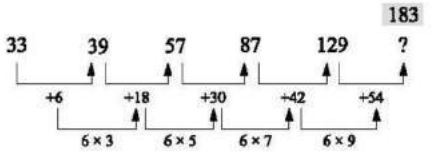
181. (*e*)



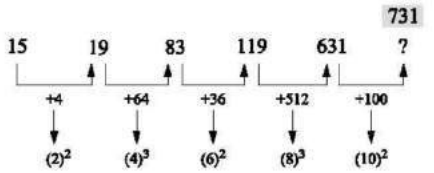
182. (*e*)



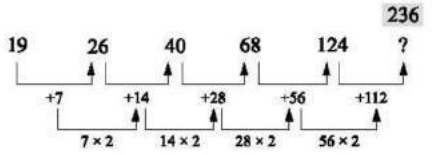
183. (*a*)



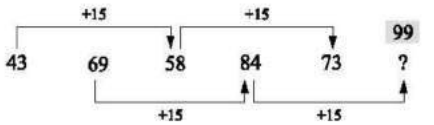
184. (*a*)



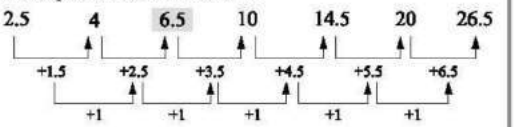
185. (*c*)



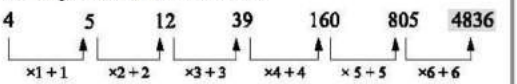
186. (*e*)



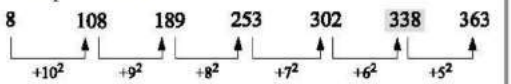
187. (*e*) The sequence of the series is



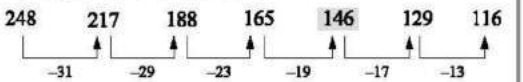
188. (*a*) The sequence of the series is



189. (*c*) The sequence of the series is

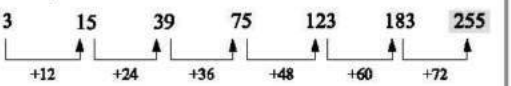


190. (*d*) The sequence of the series is



In the above series numbers are decreasing by prime numbers.

191. (*a*) The sequence of the series is



192. (*c*)
$12 \times 6 - 6 \times 7$
$30 \times 5 - 5 \times 6$
$120 \times 4 - 4 \times 5$
$460 \times 3 - 3 \times 4$
$1368 \times 2 - 2 \times 3$

Thus, answer is (c).

193. (*e*)
$154 \times 3 = 462$
$462 \div 2 = 231$
$231 \times 3 = 693$

Thus, answer is (*e*).

194. (*a*)
$7 \times 13 = 91$
$91 \times 11 = 1001$
$1001 \times 7 = 7007$
$7007 \times 5 = 35035$
$35035 \times 3 = 105105$

Thus, answer is (*a*).

195. (*a*)
$582 - (2)^3 = 574$
$574 + (3)^3 = 601$
$601 - (4)^3 = 537$
$537 + (5)^3 = 662$
$662 - (6)^3 = 446$

Thus, answer is (*a*)

196. (*d*)
$85 \times .5 + .5 = 43$
$43 \times 1 + 1 = 44$
$44 \times 1.5 + 1.5 = 67.5$
$67.5 \times 2 + 2 = 137$

Thus, answer is (*d*).

197. (*a*) Addition of 1, 2, 3, 4 will be 10 and 10 the last digit of 4th term. What will be the 50th term?

$$50\text{th term} = 50\frac{(50+1)}{2} - 49 = 1275 - 49 = 1226$$

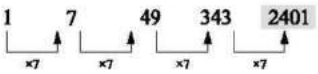
We know that

$$S_n = \frac{n}{2}\{2a + (n-1)d\}$$

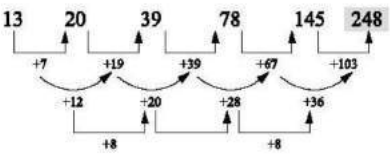
$$S_n = \frac{50}{2}\{2 \times 1276 + (50-1)1\}$$

$$S_n = 2501 \times 25 = 62525$$

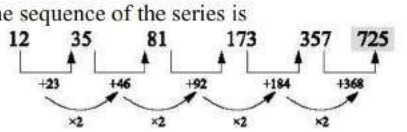
198. (*d*) The sequence of the series is



199. (*d*) The sequence of the series is

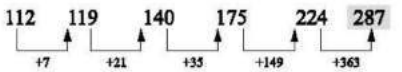


200. (*a*) The sequence of the series is

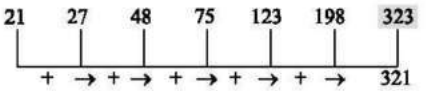


201. (*e*)
$$3 + 97 = 100$$
$$+ 100 \downarrow$$
$$100 + 197 = 297$$
$$+ 100 \downarrow$$
$$297 + 297 = 594$$
$$+ 100 \downarrow$$
$$594 + 397 = 991$$
$$+ 100 \downarrow$$
$$991 + 497 = 1488$$

202. (*c*)



203. (*b*)



204. (*c*) 32, 52, 87, 146.5, 245.75, 403.125, 653.6875

Now, $32 \times 1.5 + (2)^2 = 52$

$52 \times 1.5 + (3)^2 = 87$

$87 \times 1.5 + (4)^2 = 146.5$

$146.5 \times 1.5 + (5)^2 = 244.75 \neq 245.75$

205. (*d*) 16, 17, 32, 99, 392, 1960, 11784

$16 \times 1 + 1 = 17$

$17 \times 2 - 2 = 32$

$32 \times 3 + 3 = 99$

$99 \times 4 - 4 = 392$

$392 \times 5 + 5 = 1965 \neq 1960$

206. (*e*) 5, 9, 18, 34, 60, 95, 144

$5 + (2)^2 = 9$

$9 + (3)^2 = 18$

$18 + (4)^2 = 34$

$34 + (5)^2 = 59 \neq 60$

$59 + (6)^2 = 95$

207. (*c*) 36, 54, 81, 120.5, 182.25, 273. 375, 410.0625

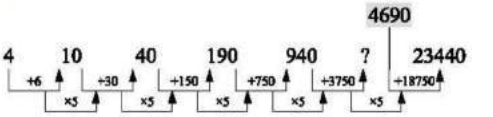
$$\frac{36}{2} = 18 + 36 = 54$$

$$\frac{54}{2} = 27 + 54 = 81$$

$$\frac{81}{2} = 40.5 + 81 = 121.5 \neq 120.5$$

$$\frac{121.5}{2} = 60.75 + 121.5 = 182.25$$

208. (*a*)



209. (*b*) 4000 2008 1012 ? 265 140.5 78.25

$4000 - 2008 = 1992 \div 2 = 996$

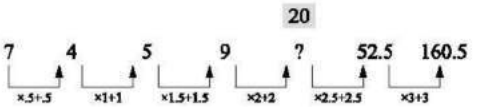
$2008 - 1012 = 996 \div 2 = 498$

$1012 - 514 = 498 \div 2 = 249$

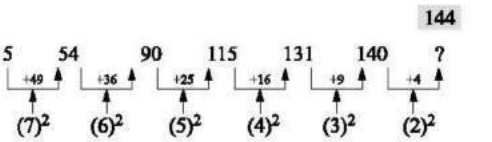
$514 - 265 = 249 \div 2 = 124.5$

$265 - 140.5 = 124.5 \div 2 = 62.25$

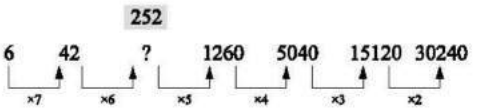
210. (*d*)



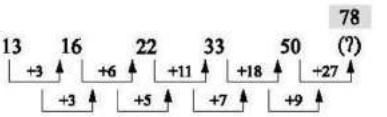
211. (*e*)



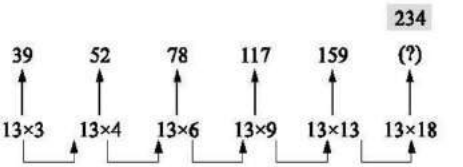
212. (*c*)



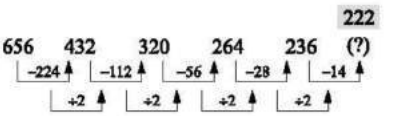
213. (*b*)



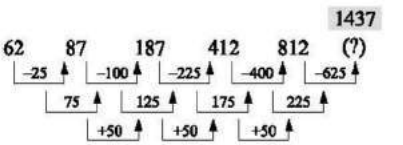
214. (*c*)



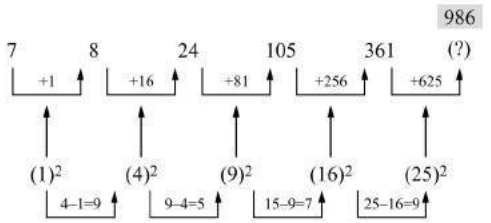
215. (*a*)



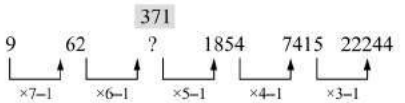
216. (*b*)



217. (*a*)

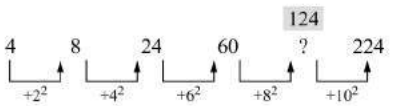


218. (*d*)



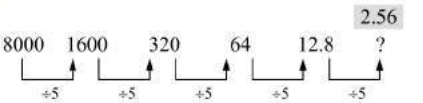
Hence, the answer will be 371.

219. (*e*)



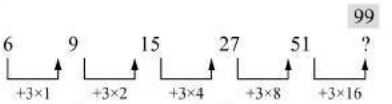
Hence, the answer will be 124.

220. (*a*)



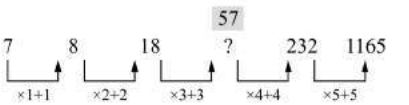
Hence, the answer will be 2.56.

221. (*b*)



Hence, the answer will be 99.

222. (*c*)



Hence, the answer will be 57.

223. (*b*)