Series

23

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 − 1st 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.

Illustrations 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 are 7, 8, 11, 16, ...

The difference of successive terms of the above series are 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 hour 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.

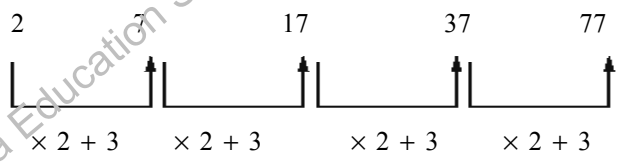
Thus, the number in place of question mark will be $32 + (3 + 2) = 37$.

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*,



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

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

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

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

Exercise-I

1. Insert the missing number

5, 8, 12, 17, 23, __, 38

(a) 29 (b) 30

(c) 32 (d) 25

2. Insert the missing number

4, 9, 20, 43, 90, __

(a) 185 (b) 172

(c) 179 (d) 165

3. Insert the missing number

1, 1, 4, 8, 9, 27, 16, __

(a) 25 (b) 36

(c) 125 (d) 64

4. Fill in the missing number

2, 6, 3, 4, 20, 5, 6, ?, 7

(a) 25 (b) 42

(c) 24 (d) 18

5. Fill in the missing number

1, 5, 11, 19, 29, ?

(a) 47 (b) 41

(c) 39 (d) 55

6. Fill in the missing number

3, 6, 21, 28, 55, 66, ?, 120

(a) 106 (b) 108

(c) 105 (d) 102

7. Fill in the missing number

5, 13, 25, 41, ?, 85, 113, 145

(a) 42 (b) 64

(c) 63 (d) 61

8. Fill in the missing number
4, 5, 9, 18, 34, ?

(a) 42 (b) 59
(c) 38 (d) None of these

9. Fill in the missing number
1799, 899, 449, ?

(a) 333 (b) 114
(c) 111 (d) 224

10. Fill in the missing number
2, 1, 2, 4, 4, 5, 6, 8, 8, 10, 11, ?

(a) 12 (b) 8
(c) 10 (d) 9

11. Fill in the missing number
5, 11, 19, 29, ?

(a) 31 (b) 52
(c) 41 (d) 51

12. Fill in the missing number
0, 3, 12, 30, ?, 105, 168

(a) 61 (b) 62
(c) 60 (d) 63

13. Fill in the missing number
15, 20, 30, ?

(a) 45 (b) 40
(c) 48 (d) 50

14. Fill in the missing number
11, 10, ?, 100, 1001, 1000, 1001

(a) 110 (b) 111
(c) 101 (d) None of these

15. Fill in the missing number
99, 95, 86, 70, ?

(a) 45 (b) 62
(c) 65 (d) 55

16. Fill in the missing number
5, 18, 10, 12, 15, ?

(a) 4 (b) 8
(c) 6 (d) 10

17. Fill in the missing number
12, 8, 14, 6, 16, ?

(a) 18 (b) 4
(c) 32 (d) 10

18. Fill in the missing number
13, 21, 29, 34, 43, 92, 12, ?

(a) 84 (b) 31
(c) 92 (d) 12

19. Fill in the missing number
3, 15, 35, ... , 99, 143

(a) 68 (b) 58
(c) 63 (d) 45

20. Fill in the missing number
4, 7, 11, 18, 29, 47, ?, 123, 199

(a) 71 (b) 82
(c) 86 (d) 76

In the following number series a wrong number is given. Find out the wrong number.

21. 455, 445, 465, 435, 485, 415, 475

(a) 475 (b) 465
(c) 435 (d) 455
(e) 445

22. 3, 10, 24, 54, 108, 220, 444

(a) 108 (b) 10
(c) 24 (d) 54
(e) 220

23. 8, 13, 40, 86, 178, 370, 752

(a) 86 (b) 178
(c) 40 (d) 370
(e) 752

24. 1, 2, 6, 21, 84, 445, 2676

(a) 6 (b) 21
(c) 2676 (d) 84
(e) 445

25. 1, 16, 9, 64, 25, 216, 49

(a) 64 (b) 216
(c) 16 (d) 49
(e) 9

26. 864, 420, 200, 96, 40, 16, 6

(a) 864 (b) 200
(c) 96 (d) 16
(e) 40

27. 9, 13, 21, 37, 69, 132, 261

(a) 9 (b) 13
(c) 261 (d) 261
(e) 132

28. 2, 5, 18, 19, 24, 29, 34

(a) 18 (b) 2
(c) 19 (d) 29
(e) 34

29. 1, 5, 11, 19, 29, 55

(a) 29 (b) 55
(c) 11 (d) 5

30. 2, 4, 4, 16, 8, 256, 64

(a) 8 (b) 16
(c) 64 (d) 256
(e) 4

Directions (31–40): In each of the questions below a number series has been given followed by five alternatives. One term of the given number series is wrong. Find out that wrong term and spot out a number from the alternatives which will replace the wrong term of the series.

31. 2, 9, 28, 65, 126, 216, 344

(a) 38 (b) 217
(c) 356 (d) 66

32. 58, 57, 54, 50, 42, 33, 22

(a) 48 (b) 49
(c) 52 (d) 30
(e) 18

33. 0, 9, 64, 169, 576, 1225

(a) 225 (b) 360
(c) 444 (d) 556
(e) 630

34. 1, 3, 7, 19, 42, 89, 184

(a) 8 (b) 9
(c) 24 (d) 30
(e) 182

35. 169, 121, 80, 49, 25, 9, 1

(a) 100 (b) 81
(c) 36 (d) 16
(e) 4

36. 7, 9, 17, 42, 91, 172, 293

(a) 16 (b) 25
(c) 36 (d) 8
(e) 49

37. 8, 14, 26, 48, 98, 194, 386

(a) 60 (b) 50
(c) 72 (d) 96
(e) 108

38. 95, 86, 73, 62, 47, 30, 11

(a) 90 (b) 75
(c) 64 (d) 35
(e) 15

39. 7, 14, 56, 168, 336, 1344, 2688, 8064

(a) 3032 (b) 5032
(c) 4032 (d) 2680
(e) 332

40. 11, 15, 17, 19, 23, 25

(a) 1 (b) 18
(c) 21 (d) 10
(e) 13

Direction (41–49): In each of the following questions a number series is given. After the series a number is given followed by (A), (B), (C), (D) and (E). Complete the series starting with the number given following the sequence of the given series. Then, answer the question given below each:

41. 1 9 65 393

2 (A) (B) (C) (D) (E)

Which of the following numbers will come in place of (C)?

(a) 490 (b) 729
(c) 854 (d) 734
(e) None of these

42. 616, 496, 397, 317, 254,

838 (A), (B), (C), (D), (E),

Which of the following numbers will come in place of (E)?

(a) 428 (b) 608
(c) 426 (d) 529
(e) 712

43. 434, 353, 417, 368, 404, 379,

108 (A), (B), (C), (D), (E)

Which of the following numbers will come in place of (E)?

(a) 27 (b) 91
(c) 42 (d) 53
(e) 78

44. 4, 16, 48, 120, 272,

124, (A), (B), (C), (D), (E)

Which of the following numbers will come in place of (C)?

(a) 4424 (b) 256
(c) 528 (d) 1080
(e) 2192

45. 1, 9, 65, 393,

2, (A), (B), (C), (D), (E)

Which of the following numbers will come in place of (C)?

(a) 490 (b) 729
(c) 854 (d) 734
(e) None of these

46. 848, 420, 206, 99, 45.5,

664, (A), (B), (C), (D), (E)

Which of the following numbers will come in place of (D)?

(a) 32 (b) 34
(c) 160 (d) 328
(e) 13

47. 8, 8, 12, 24,

36 (A), (B), (C), (D), (E)

Which of the following numbers will come in place of (E)?

(a) 108 (b) 36
(c) 810 (d) 54
(e) None of these

48. 6, 14, 35, 111, 449,

3 (A), (B), (C), (D), (E)

Which of the following numbers will come in place of (B)?

(a) 93 (b) 377
(c) 1892 (d) 11
(e) 29

49. 8, 49, 288, 1435, 5736,

5 (A), (B), (C), (D), (E)

Which of the following numbers will come in place of (E)?

(a) 162 (b) 805
(c) 9645 (d) 3216
(e) 28

EXERCISE-2
(BASED ON MEMORY)

1. The missing number in the sequence 0, 2, 8, 18, ..., 50 is:

(a) 28 (b) 30
(c) 32 (d) 36

[SSC (GL) Prel. Examination, 2005]

2. The next number in the sequence 2, 5, 10, 14, 18, 23, 26, 32, ... is:

(a) 33 (b) 34
(c) 36 (d) 37

[SSC (GL) Prel. Examination, 2005]

Directions (3–15): What should come in place of the question mark (?) in the following number series?

3. 7413, 7422, 7440, ?, 7503, 7548

(a) 7464 (b) 7456
(c) 7466 (d) 7477
(e) None of these

[SBI PO, 2008]

4. 4, 16, 36, 64, 100, ?

(a) 120 (b) 180
(c) 136 (d) 144
(e) None of these

[SBI PO, 2008]

5. 12, 33, 96, ?, 852, 2553

(a) 285 (b) 288
(c) 250 (d) 384
(e) None of these **[SBI PO, 2008]**

6. 70000, 14000, 2800, ?, 112, 22.4

(a) 640 (b) 420
(c) 560 (d) 540
(e) None of these **[SBI PO, 2008]**

7. 102, 99, 104, 97, 106, ?

(a) 96 (b) 95
(c) 100 (d) 94
(e) None of these **[SBI PO, 2008]**

8. 14, 43.5, 264, ?, 76188

(a) 3168 (b) 3176
(c) 1587 (d) 1590
(e) None of these

[Bank of Maharashtra PO, 2008]

9. 41, 164, 2624, ?, 6045696

(a) 104244 (b) 94644
(c) 94464 (d) 102444
(e) None of these

[Bank of Maharashtra PO, 2008]

10. 32, 49, 83, 151, 287, 559, ?

(a) 1118 (b) 979
(c) 1103 (d) 1120
(e) None of these

[Andhra Bank PO, 2006]

11. 12, 14, 17, 13, 8, 14, 21, 13, 4, ?

(a) 14 (b) 13
(c) 15 (d) 2
(e) None of these

[Corporation Bank PO, 2006]

12. 4, 6, 12, 30, 90, 315, ?

(a) 945 (b) 1102
(c) 1260 (d) 1417.5
(e) None of these

[Corporation Bank PO, 2006]

13. 25, 16, ?, 4, 1

(a) 3 (b) 6
(c) 12 (d) 18
(e) None of these

[Corporation Bank PO, 2006]

14. 15, 12, 17, 10, ?, 8, 25, 6

(a) 3 (b) 7
(c) 21 (d) 19
(e) None of these

[Corporation Bank PO, 2006]

15. 15, 29, 57, 113, ?, 449

(a) 226 (b) 235
(c) 215 (d) 224
(e) None of these

[LIC ADO Examination, 2007]

16. In the following number series, one number is wrong. Find out the wrong number.
17, 22, 32, 45, 67, 92

(a) 67 (b) 32
(c) 22 (d) 45
(e) None of these

[LIC ADO Examination, 2007]

Directions (17–20): One number is wrong in each of the number series given in each of the following questions. You have to identify that number and assuming that a new series starts with that number following the same logic as in the given series, which of the numbers given in (a), (b), (c), (d) and (e) given below each series will be the third number in the new series?

17. 3 4 10 34 136 685 4116

(a) 22 (b) 276
(c) 72 (d) 1374
(e) 12

[SBI PO, 1999]

18. 214 18 162 62 143 90 106

(a) –34 (b) 110
(c) 10 (d) 91
(e) 38

[SBI PO, 1999]

19. 160 80 120 180 1050 4725 25987.5

(a) 60 (b) 90
(c) 3564 (d) 787.5
(e) 135

[SBI PO, 1999]

20. 2 3 7 13 26 26 47 78

(a) 11 (b) 13
(c) 15 (d) 18
(e) 20

[SBI PO, 1999]

Directions (21–25): In each of the questions given below there is a mathematical series. After the series a number is being given followed by (a), (b), (c), (d) and (e). You have to create another series after understanding the sequence of the given series which starts with the given number. Then, answer the question given below.

21. 1 9 65 393
2 (a) (b) (c) (d) (e)

Out of the following numbers which would come in the place of (c)?

(a) 490 (b) 853
(c) 731 (d) 729
(e) None of these

[Bank of Baroda PO, 1999]

22. 8 8 12 24
36 (a) (b) (c) (d) (e)

Out of the following numbers which would come in the place of (e)

(a) 810 (b) 36
(c) 54 (d) 108
(e) None of these

[Bank of Baroda PO, 1999]

23. 424 208 100 46
888 (a) (b) (c) (d) (e)

What number would come in place of (b)?

(a) 20 (b) 440
(c) 216 (d) 56
(e) None of these

[Bank of Baroda PO, 1999]

24. 4 5 9.75 23.5
7 (a) (b) (c) (d) (e)
What number would come in the place of (d)?
(a) 32.5 (b) 271.5
(c) 8 (d) 14.25
(e) None of these
[Bank of Baroda PO, 1999]

25. 5 294 69 238
13 (a) (b) (c) (d) (e)
Which of the following numbers would come in the place of (e)?
(a) 246 (b) 206
(c) 125 (d) 302
(e) None of these
[Bank of Baroda PO, 1999]

Directions (26–30): In each of the following questions a number series is given. Only one number is wrong in each series. Find out that wrong number, and taking this wrong number as the first term of the second series formed following the same logic, find out the third term of the second series.

26. 1 2 8 21 88 445
(a) 24.5 (b) 25
(c) 25.5 (d) 24
(e) None of these
[SBI Associates PO, 1999]

27. 6 7 18 63 265 1365
(a) 530 (b) 534
(c) 526 (d) 562
(e) None of these
[SBI Associates PO, 1999]

28. 7 23 58 127 269 555
(a) 263 (b) 261
(c) 299 (d) 286
(e) None of these

29. 2 7 28 146 877 6140
(a) 242 (b) 246
(c) 252 (d) 341
(e) None of these
[SBI Associates PO, 1999]

30. 1 2 6 33 148 765 4626
(a) 46 (b) 124
(c) 18 (d) 82
(e) None of these
[SBI Associates PO, 1999]

31. 7, 9, 13, 21, 37, ?
(a) 58 (b) 63
(c) 69 (d) 72
[SSC (GL), 2010]

32. 36, 28, 24, 22, ?
(a) 18 (b) 19
(c) 21 (d) 22
[SSC (GL), 2010]

33. 0, 4, 18, 48, ?, 180
(a) 58 (b) 68
(c) 84 (d) 100
[SSC (GL), 2010]

34. 987:IHG :: 654:?
(a) FDE (b) FED
(c) EFD (d) DEF
[SSC (GL), 2010]

35. 24:126 :: 48:?
(a) 433 (b) 192
(c) 240 (d) 344
[SSC (GL), 2010]

36. 1:8 :: 27:?
(a) 37 (b) 47
(c) 57 (d) 64
[SSC (GL), 2010]

37. Find the wrong number in the series:
6, 9, 15, 22, 51, 99
(a) 99 (b) 51
(c) 22 (d) 15
[SSC (GL), 2011]

38. 8, 15, 36, 99, 288, ...?
(a) 368 (b) 676
(c) 855 (d) 908
[SSC (GL), 2011]

39. 4, 196, 16, 169, ? , 144, 64
(a) 21 (b) 81
(c) 36 (d) 32
[SSC (GL), 2011]

40. Find out the questioned number. 6:5:: 8:?
(a) 2 (b) 4
(c) 6 (d) 10
[SSC (GL), 2011]

41. 5, 21, 69, 213, 645, __?
(a) 1670 (b) 1941
(c) 720 (d) 1320
[SSC (GL), 2011]

42. 121, 144, 289, 324, 529, 576, __?

(a) 961 (b) 841
(c) 900 (d) 729

[SSC (GL), 2011]

43. 14, 19, 29, 49, 89, __?

(a) 139 (b) 149
(c) 159 (d) 169

[SSC (GL), 2011]

44. 34, 18, 10, ?

(a) 8 (b) 5
(c) 7 (d) 6

[SSC (GL), 2011]

45. 9, 8, 10, 16, 11, ?, 12, 64

(a) 28 (b) 36
(c) 25 (d) 32

[SSC (GL), 2011]

46. 7, 8, 18, 57, ?

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

[Gramin Bank U.P. (SO) Examination, 2012]

47. 7, 11, 19, 35, ?

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

[Gramin Bank U.P. (SO) Examination, 2012]

48. 5, 11, 23, ?, 95

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

[Gramin Bank U.P. (SO) Examination, 2012]

49. 17, 22, 52, 165, ?

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

[Gramin Bank U.P. (SO) Examination, 2012]

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

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

[UPPCS, 2012]

Directions (Q. 51 to 55): In each of these questions, one term in the given number series is wrong. Find out the wrong term.

51. 142 119 100 83 65 59 52

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

[Bank of Baroda PO, 2010]

52. 8 12 24 46 72 108 152

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

[Bank of Baroda PO, 2010]

53. 13 25 40 57 79 103 130

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

[Bank of Baroda PO, 2010]

54. 2 10 18 54 162 486 1458

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

[Bank of Baroda PO, 2010]

55. 850 600 550 500 475 462.5 456.25

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

[Bank of Baroda PO, 2010]

56. 12 12 18 36 90 270 ?

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

[Syndicate Bank PO, 2010]

57. 1015 508 255 129 66.5 ? 20.875

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

[Syndicate Bank PO, 2010]

58. 8 9 20 63 256 1285 ?

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

[Syndicate Bank PO, 2010]

59. 980 484 236 112 50 ? 3.5

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

[Syndicate Bank PO, 2010]

Directions (Q. 60 to 69): In each of these questions, one term in the given number series is wrong. Find out the wrong term.

60. 484 240 120 57 26.5 11.25 3.625

(a) 240 (b) 120
(c) 57 (d) 26.5
(e) 11.25

[Allahabad Bank PO, 2010]

61. 3 5 13 43 176 891 5353

(a) 5 (b) 13
(c) 43 (d) 176
(e) 891

[Allahabad Bank PO, 2010]

62. 6 7 16 41 90 154 292

(a) 7 (b) 16
(c) 41 (d) 90
(e) 154 **[Allahabad Bank PO, 2010]**

63. 5 7 16 57 244 1245 7506

(a) 7 (b) 16
(c) 57 (d) 244
(e) 1245 **[Allahabad Bank PO, 2010]**

64. 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

[Allahabad Bank PO, 2010]

65. 32 34 37 46 62 87 123

(a) 34 (b) 37
(c) 62 (d) 87
(e) 46

[Punjab and Sind Bank PO, 2010]

66. 7 18 40 106 183 282 403

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

[Punjab and Sind Bank PO, 2010]

67. 850 843 829 808 788 745 703

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

[Punjab and Sind Bank PO, 2010]

68. 33 321 465 537 590 600

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

[Punjab and Sind Bank PO, 2010]

69. 37 47 52 67 87 112 142

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

[Punjab and Sind Bank PO, 2010]

70. 586 587 586 581 570 ? 522

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

[Punjab National Bank PO, 2010]

71. 64 54 69 49 74 44 ?

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

[Punjab National Bank PO, 2010]

72. 4000 2008 1012 ? 265 140.5 78.25

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

[Punjab National Bank PO, 2010]

73. 5 5 15 75? 4725 51975

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

[Punjab National Bank PO, 2010]

74. 52 26 26 39 78 ? 585

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

[Punjab National Bank PO, 2010]

75. 7 20 46 98 202 ?

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

[Punjab National Bank PO, 2010]

76. 210 209 213 186 202 ?

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

[CBI (PO), 2010]

77. 27 38 71 126 203 ?

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

[CBI (PO), 2010]

78. 435 354 282 219 165 ?

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

[CBI (PO), 2010]

79. 4 200 369 513 634 ?

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

[CBI (PO), 2010]

80. 8 11 17 47 128 371 1100

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

[Corporation Bank PO, 2009]

81. 1 5 13 31 61 125 253

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

[Corporation Bank PO, 2009]

82. 325 314 288 247 191 ?

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

[Corporation Bank PO, 2010]

83. 45 46 70 141 ? 1061.5

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

[Corporation Bank PO, 2010]

84. 620 632 608 644 596 ?

(a) 536 (b) 556
(c) 656 (d) 646
(e) None of these

[Corporation Bank PO, 2010]

85. 15 25 40 65 ? 170

(a) 115 (b) 90
(c) 105 (d) 120
(e) None of these

[Corporation Bank PO, 2010]

86. 3 52 88 113 129 ?

(a) 128 (b) 142
(c) 133 (d) 145
(d) None of these

[New Indian Insurance PO, 2009]

87. 2 3 8 ? 112 565

(a) 36 (b) 14
(c) 27 (d) 45
(d) None of these

[New Indian Insurance PO, 2009]

88. 6 4 8 23 ? 385.25

(a) 84.5 (b) 73
(c) 78.5 (d) 82
(e) None of these

[New Indian Insurance PO, 2009]

89. 8 64 216 512 ? 1728

(a) 729 (b) 1331
(c) 684 (d) 1000
(e) None of these

[New Indian Insurance PO, 2009]

90. 5 11 32 108 444 ?

(a) 1780 (b) 2230
(c) 1784 (d) 2225
(e) None of these

[New Indian Insurance PO, 2009]

91. 9 11 15 ? 39 71

(a) 29 (b) 23
(c) 21 (d) 27
(e) None of these

[Haryana Grameen Bank PO, 2009]

92. 7 8 12 21 ? 62

(a) 42 (b) 51
(c) 48 (d) 35
(e) None of these

[Haryana Grameen Bank PO, 2009]

93. 5 6 16 57 244 ?

(a) 1225 (b) 992
(c) 964 (d) 1245
(e) None of these

[Haryana Grameen Bank PO, 2009]

94. 3 19 97 391 ? 2359

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

[Haryana Grameen Bank PO, 2009]

95. 848 422 208 100 45 ?

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

[Haryana Grameen Bank PO, 2009]

Directions (Q. 96 to 100): Mark the wrong number in the series

96. 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

[Andhra Bank PO, 2007]

97. 1500 1581 1664 1749 1833 1925 2016

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

[Andhra Bank PO, 2007]

98. 1331 2197 3375 4914 6859 9261 12167

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

[Andhra Bank PO, 2007]

99. 13 16 21 27 39 52 69

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

[Andhra Bank PO, 2007]

100. 66 91 120 153 190 233 276

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

[Andhra Bank PO, 2007]

101. 2 8 26 ? 242

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

[Andhra Bank PO, 2009]

102. 3 4 12 ? 196

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

[Andhra Bank PO, 2009]

103. 9 17 ? 65 129

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

[Andhra Bank PO, 2009]

104. 7 13 ? 49 97

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

[Andhra Bank PO, 2009]

105. 5 3 6 ? 64.75

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

[Andhra Bank PO, 2009]

106. 12 12 18 45 180 1170 ?

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

[IOB PO, 2008]

107. 444 467 513 582 674 789 ?

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

[IOB PO, 2008]

108. 1 16 81 256 625 1296 ?

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

[IOB PO, 2008]

109. 23 25 53 163 657 3291 ?

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

[IOB PO, 2008]

110. 13 13 65 585 7605 129285 ?

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

[IOB PO, 2008]

111. 649.6875 1299.375 866.25 346.5 99 22 ?

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

[Uttrakhand GBO PO, 2007]

112. 30 16 10 8 8 9 ?

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

[Uttrakhand GBO PO, 2007]

113. 10 18 63 253 1137 5901 ?

(a) 39754 (b) 35749
(c) 37594 (d) 35794
(e) None of these

[Uttrakhand GBO PO, 2007]

114. 11 26 58 124 258 528 ?

(a) 1020 (b) 1135
(c) 1285 (d) 1340
(e) None of these

[Uttrakhand GBO PO, 2007]

115. 738 765 819 900 1008 1143 ?

(a) 1445 (b) 1565
(c) 1305 (d) 1275
(e) None of these

[Uttrakhand GBO PO, 2007]

116. 9050 5675 3478 2147 1418 1077 950

(a) 3478 (b) 1418
(c) 5675 (d) 2147
(e) 1077

[IBPS Bank PO, 2011]

117. 7 12 40 222 1742 17390 208608

(a) 7 (b) 12
(c) 40 (d) 1742
(e) 208608

[IBPS Bank PO, 2011]

118. 6 91 584 2935 11756 35277 70558

(a) 91 (b) 70558
(c) 584 (d) 2935
(e) 35277

[IBPS Bank PO, 2011]

119. 1 4 25 256 3125 46656 823543

(a) 3125 (b) 823543
(c) 46656 (d) 25
(e) 256

[IBPS Bank PO, 2011]

120. 8424 4212 2106 1051 526.5 263.25 131.625

(a) 131.625 (b) 1051
(c) 4212 (d) 8424
(e) 263.25

[IBPS Bank PO, 2011]

121. 4 5 12 38 160 805 4836

(a) 12 (b) 160
(c) 38 (d) 805
(e) None of these

[OBC PO, 2009]

122. 3 7 16 32 56 93 142

(a) 56 (b) 16
(c) 32 (d) 7
(e) None of these

[OBC PO, 2009]

123. 11 18 29 42 59 80 101

(a) 42 (b) 18
(c) 29 (d) 59
(e) None of these

[OBC PO, 2009]

124. 2 9 32 105 436 2159 13182

(a) 436 (b) 2195
(c) 9 (d) 32
(e) None of these

[OBC PO, 2009]

125. 5 5 495 3465 17325 34650 51975

(a) 495 (b) 34650
(c) 55 (d) 17325
(e) None of these

[OBC PO, 2009]

126. 17 52 158 477 ? 4310

(a) 1433 (b) 1432
(c) 1435 (d) 1434
(e) None of these

[United Bank of India PO, 2009]

127. 3 22 ? 673 2696 8093

(a) 133 (b) 155
(c) 156 (d) 134
(e) None of these

[United Bank of India PO, 2009]

128. 6 13 38 ? 532 2675

(a) 129 (b) 123
(c) 172 (d) 164
(e) None of these

[United Bank of India PO, 2009]

129. 286 142 ? 34 16 7

(a) 66 (b) 72
(c) 64 (d) 74
(e) None of these

[United Bank of India PO, 2009]

130. 17 9 ? 16.5 35 90

(a) 5 (b) 15
(c) 10 (d) 20
(e) None of these

[United Bank of India PO, 2009]

131. 0 5 18 43 84 145 ?

(a) 220 (b) 240
(c) 260 (d) 280
(e) None of these

[IOB PO, 2009]

132. 10 17 48 165 688 3475 ?

(a) 27584 (b) 25670
(c) 21369 (d) 20892
(e) None of these

[IOB PO, 2009]

133. 1 3 24 360 8640 302400 ?

(a) 14525100 (b) 154152000
(c) 14515200 (d) 15425100
(e) None of these

[IOB PO, 2009]

134. 12 14 32 102 416 2090 ?

(a) 15522 (b) 12552
(c) 13525 (d) 17552
(e) None of these

[IOB PO, 2009]

135. 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

[IOB PO, 2009]

136. 15 25 40 130 ? 2560

(a) 500 (b) 520
(c) 490 (d) 480
(e) None of these

[NABARD Bank PO, 2009]

137. 186 94 48 25 ? 7.75

(a) 13.5 (b) 14.8
(c) 12.5 (d) 14
(e) None of these

[NABARD Bank PO, 2009]

138. 124 112 176 420 1488 ?

(a) 8568 (b) 7140
(c) 5712 (d) 6150
(e) None of these

[NABARD Bank PO, 2009]

139. 384 381 372 345 264 ?

(a) 23 (b) 25
(c) 43 (d) 24
(e) None of these

[NABARD Bank PO, 2009]

140. 282 286 302 ? 402 502

(a) 366 (b) 318
(c) 326 (d) 338
(e) None of these

[NABARD Bank PO, 2009]

141. 2187 729 243 81 27 9 ?

(a) 36 (b) 3
(c) 18 (d) 6
(e) 12

[SBI PO, 2008]

142. 522 1235 2661 4800 7652 11217 ?

(a) 15495 (b) 16208
(c) 14782 (d) 16921
(e) 14069

[SBI PO, 2008]

143. 51975 9450 2100 600 240 160 ?

(a) 80 (b) 120
(c) 320 (d) 240
(e) 300

[SBI PO, 2008]

144. 4 18 48 100 180 294 ?

(a) 416 (b) 480
(c) 512 (d) 384
(e) 448

[SBI PO, 2008]

145. 6 26 134 666 3334 16666 ?

(a) 84344 (b) 83443
(c) 84434 (d) 83334
(e) 83344

[SBI PO, 2008]

146. 30 35 65 100 165 265 ?

(a) 270 (b) 520
(c) 430 (d) 395
(e) None of these

[Dena Bank PO, 2008]

147. 3 5 7 ? 13 17

(a) 9 (b) 10
(c) 11 (d) 8
(e) None of these

[Dena Bank PO, 2008]

148. 16 17 15 18 14 ?

(a) 10 (b) 17
(c) 18 (4) 20
(e) None of these

[Dena Bank PO, 2008]

149. 3125 256 ? 4 1

(a) 27 (b) 128
(c) 64 (d) 32
(e) None of these

[Dena Bank PO, 2008]

150. 2 3 6 18 108 ?

(a) 126 (b) 1944
(c) 648 (d) 756
(e) None of these

[Dena Bank PO, 2008]

151. 9 15 27 51 99 ?

(a) 165 (b) 195
(c) 180 (d) 190
(e) None of these

[OBC PO, 2010]

152. 13 21 36 58 87 ?

(a) 122 (b) 128
(c) 133 (d) 123
(e) None of these

[OBC PO, 2010]

153. 7 9 19 45 95 ?

(a) 150 (b) 160
(c) 145 (d) 177
(e) None of these

[OBC PO, 2010]

154. 14 15 23 32 96 ?

(a) 121 (b) 124
(c) 152 (d) 111
(e) None of these

[OBC PO, 2010]

155. 20 24 36 56 84 ?

(a) 116 (b) 124
(c) 120 (d) 128
(e) None of these

[OBC PO, 2010]

156. 117 389 525 593 627 (?)

(a) 654 (b) 640
(c) 634 (d) 630
(e) None of these

[Union Bank of India PO, 2011]

157. 7 11 23 51 103 (?)

(a) 186 (b) 188
(c) 185 (d) 187
(e) None of these

[Union Bank of India PO, 2011]

158. 18 27 49 84 132 (?)

(a) 190 (b) 183
(c) 180 (d) 193
(e) None of these

[Union Bank of India PO, 2011]

159. 33 43 65 99 145 (?)

(a) 201 (b) 203
(c) 205 (d) 211
(e) None of these

[Union Bank of India PO, 2011]

160. 655 439 314 250 223 (?)

(a) 205 (b) 210
(c) 195 (d) 190
(e) None of these

[Union Bank of India PO, 2011]

161. 15 21 39 77 143 (?)

(a) 243 (b) 240
(c) 253 (d) 245
(e) None of these

[Corporation Bank PO, 2011]

162. 33 39 57 87 129 (?)

(a) 183 (b) 177
(c) 189 (d) 199
(e) None of these

[Corporation Bank PO, 2011]

163. 15 19 83 119 631 (?)

(a) 731 (b) 693
(c) 712 (d) 683
(e) None of these

[Corporation Bank PO, 2011]

164. 19 26 40 68 124 (?)

(a) 246 (b) 238
(c) 236 (d) 256
(e) None of these

[Corporation Bank PO, 2011]

165. 43 69 58 84 73 (?)

(a) 62 (b) 98
(c) 109 (d) 63
(e) None of these

[Corporation Bank PO, 2011]

166. 2.5 4 ? 10 14.5 20 26.5

(a) 8 (b) 7.5
(c) 6 (d) 5.5
(e) None of these

[Rajasthan Grameen Bank PO, 2011]

167. 4 5 12 39 160 805 ?

(a) 4836 (b) 3224
(c) 5642 (d) 4030
(e) None of these

[Rajasthan Grameen Bank PO, 2011]

168. 8 108 189 253 302 ? 363

(a) 351 (b) 327
(c) 338 (d) 311
(e) None of these

[Rajasthan Grameen Bank PO, 2011]

169. 248 217 188 165 ? 129 116

(a) 144 (b) 136
(c) 134 (d) 146
(e) None of these

[Rajasthan Grameen Bank PO, 2011]

170. 3 15 39 75 123 183 ?

(a) 255 (b) 218
(c) 243 (d) 225
(e) None of these

[Rajasthan Grameen Bank PO, 2011]

171. 1 7 49 343 (?)

(a) 16807 (b) 1227
(c) 2058 (d) 2401
(e) None of these

[Bank of Baroda PO Examination, 2011]

172. 13 20 39 78 145 (?)

(a) 234 (b) 244
(c) 236 (d) 248
(e) None of these

[Bank of Baroda PO Examination, 2011]

173. 12 35 81 173 357 (?)

(a) 725 (b) 715
(c) 726 (d) 736
(e) None of these

[Bank of Baroda PO Examination, 2011]

174. 3 100 297 594 991 (?)

(a) 1489 (b) 1479
(c) 1478 (d) 1498
(e) None of these

[Bank of Baroda PO Examination, 2011]

175. 112 119 140 175 224 (?)

(a) 277 (b) 276
(c) 287 (d) 266
(e) None of these

[Bank of Baroda PO Examination, 2011]

176. 4 10 40 190 940 ? 23440

(a) 4690 (b) 2930
(c) 5140 (d) 3680
(e) None of these

[Bank of India PO, 2010]

177. 4000 2008 1012 ? 265 140.5 78.25

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

[Bank of India PO, 2010]

178. 7 4 5 9 ? 52.5 160.5

(a) 32 (b) 16
(c) 14 (d) 20
(e) None of these

[Bank of India PO, 2010]

179. 5 54 90 115 131 140 ?

(a) 149 (b) 146
(c) 142 (d) 152
(e) None of these

[Bank of India PO, 2010]

180. 6 42 ? 1260 5040 15120 30240

(a) 546 (b) 424
(c) 252 (d) 328
(e) None of these

[Bank of India PO, 2010]

181. 13 16 22 33 51 (?)

(a) 89 (b) 78
(c) 102 (d) 69
(e) None of these

[Bank of Baroda PO, 2010]

182. 39 52 78 117 169 (?)

(a) 246 (b) 182
(c) 234 (d) 256
(e) None of these

[Bank of Baroda PO, 2010]

183. 656 432 320 264 236 (?)

(a) 222 (b) 229
(c) 232 (d) 223
(e) None of these

[Bank of Baroda PO, 2010]

184. 62 87 187 412 812 (?)

(a) 1012 (b) 1437
(c) 1337 (d) 1457
(e) None of these

[Bank of Baroda PO, 2010]

185. 7 8 24 105 361 (?)

(a) 986 (b) 617
(c) 486 (d) 1657
(e) None of these

[Bank of Baroda PO, 2010]

186. 9 62 ? 1854 7415 22244

(a) 433 (b) 309
(c) 406 (d) 371
(e) None of these

[IDBI PO, 2009]

187. 4 8 24 60 ? 224

(a) 178 (b) 96
(c) 109 (d) 141
(e) None of these

[IDBI PO, 2009]

188. 8000 1600 320 64 12.8 ?

(a) 2.56 (b) 3.5
(c) 3.2 (d) 2.98
(e) None of these

[IDBI PO, 2009]

189. 6 9 15 27 51 ?

(a) 84 (b) 99
(c) 123 (d) 75
(e) None of these

[IDBI PO, 2009]

190. 7 8 18 ? 232 1165

(a) 84 (b) 42
(c) 57 (d) 36
(e) None of these

[IDBI PO, 2009]

191. 9 19 40 83 ? 345 696

(a) 162 (b) 170
(c) 175 (d) 166
(e) None of these

[Syndicate Bank PO, 2010]

192. The odd term in the sequence 0, 7, 26, 63, 124, 217 is:

(a) 217 (b) 7
(c) 26 (d) 63

[SSC, 2013]

193. Insert the missing number

3, 18, 12, 72, 66, 396, ?

(a) 300 (b) 380
(c) 350 (d) 390

[SSC, 2012]

194. The missing term in the sequence 2,3,5,7,11,__,17,19 is:

(a) 16 (b) 1
(c) 14 (d) 13

[SSC, 2010]

195. The wrong number in the sequence 8, 13, 21, 32, 47, 63, 83 is:

(a) 32 (b) 47
(c) 63 (d) 83

[SSC, 2010]

Directions (Q. 196–200): In the following number series, only one number is wrong. Find out the wrong number.

196. 41 45 61 97 181 261 405

(a) 181 (b) 97
(c) 261 (d) 61
(e) 45

[IBPS PO/MT, 2014]

197. 16 30 58 114 226 496 898

(a) 58 (b) 226
(c) 30 (d) 114
(e) 496

[IBPS PO/MT, 2014]

198. 15 21.5 46.5 145 585.5 2933 17603.5

(a) 585.5 (b) 2933
(c) 46.5 (d) 145
(e) 21.5

[IBPS PO/MT, 2014]

199. 5 6 16 57 246 1245 7506

(a) 16 (b) 6
(c) 1245 (d) 246
(e) 57

[IBPS PO/MT, 2014]

200. 2 13 46 145 452 1333 4006

(a) 1333 (b) 452
(c) 46 (d) 145
(e) 13

[IBPS PO/MT, 2014]

Directions (Q. 201–205): In each of these questions a number series is given. In each series only one number is wrong. Find out the wrong number.

201. 5531 5506 5425 5304 5135 4910 4621

(a) 5531 (b) 5425
(c) 4621 (d) 5135
(e) 5506

[IBPS PO/MT, 2012]

202. 6 7 9 13 26 37 69

(a) 7 (b) 26
(c) 69 (d) 37
(e) 9

[IBPS PO/MT, 2012]

203. 1 3 10 36 152 760 4632

(a) 3 (b) 36
(c) 4632 (d) 760
(e) 152

[IBPS PO/MT, 2012]

204. 4 3 9 34 96 219 435

(a) 4 (b) 9
(c) 34 (d) 435
(e) 219

[IBPS PO/MT, 2012] (23)

205. 157.5 45 15 6 3 2 1

(a) 1 (b) 2
(c) 6 (d) 157.5
(e) 45

[IBPS PO/MT, 2012]

Directions (Q. 206–210): In the following number series only one number is wrong. Find out the wrong number.

206. 7 12 40 222 1742 17390 208608

(a) 7 (b) 12
(c) 40 (d) 1742
(e) 208608

[IBPS PO/MT, 2011]

207. 6 91 584 2935 11756 35277 70558

(a) 91 (b) 70558
(c) 584 (d) 2935
(e) 35277

[IBPS PO/MT, 2011]

208. 9050 5675 3478 2147 1418 1077 950

(a) 3478 (b) 1418
(c) 5675 (d) 2147
(e) 1077

[IBPS PO/MT, 2011]

209. 1 4 25 256 3125 46656 823543

(a) 3125 (b) 823543
(c) 46656 (d) 25
(e) 256 **[IBPS PO/MT, 2011]**

210. 8424 4212 2106 1051 526.5 263.25 131.625

(a) 131.625 (b) 1051
(c) 4212 (d) 8424
(e) 263.25

[IBPS PO/MT, 2011]

Directions(Q.211–115): In each of these questions, a number series is given. In each series, only one number is wrong. Find out the wrong number.

211. 3601 3602 1803 604 154 36 12

(a) 3602 (b) 1803
(c) 604 (d) 154
(e) 36

[SBI Associates Banks PO, 2011]

212. 4 12 42 196 1005 6066 42511

(a) 12 (b) 42
(c) 1005 (d) 196
(e) 6066

[SBI Associates Banks PO, 2011]

213. 2 8 12 20 30 42 56

(a) 8 (b) 42
(c) 30 (d) 20
(e) 12

[SBI Associates Banks PO, 2011]

214. 32 16 24 65 210 945 5197.5

(a) 945 (b) 16
(c) 24 (d) 210
(e) 65

[SBI Associates Banks PO, 2011]

215. 7 13 25 49 97 194 385

(a) 13 (b) 49
(c) 97 (d) 194
(5) 25

[SBI Associates Banks PO, 2011]

Directions (Q. 216–220): What will come in place of the question mark (?) in the following number series?

216. 8 10 18 44 124 (?)

(a) 344 (b) 366
(c) 354 (d) 356
(e) None of these

[IOB PO, 2011]

217. 13 25 61 121 205 (?)

(a) 323 (b) 326
(c) 324 (d) 313
(e) None of these

[IOB PO, 2011]

218. 656 352 200 124 86 (?)

(a) 67 (b) 59
(c) 62 (d) 57
(e) None of these **[IOB PO, 2011]**

219. 454 472 445 463 436 (?)

(a) 436 (b) 456
(c) 454 (d) 434
(e) None of these

[IOB PO, 2011]

220. 12 18 36 102 360 (?)

(a) 1364 (b) 1386
(c) 1384 (d) 1376
(e) None of these

[IOB PO, 2011]

Directions (Q. 221–225): What should come in place of question mark (?) in the following number series?

221. 32 49 83 151 287 559 ?

(a) 1118 (b) 979
(c) 1103 (d) 1120
(e) None of these

[Andhra Bank PO, 2011]

222. 462 552 650 756 870 992 ?

(a) 1040 (b) 1122
(c) 1132 (d) 1050
(e) None of these

[Andhra Bank PO, 2011]

223. 15 18 16 19 17 20 ?

(a) 23 (b) 22
(c) 16 (d) 18
(e) None of these

[Andhra Bank PO, 2011]

224. 1050 420 168 67.2 26.88 10.752 ?

(a) 4.3008 (b) 6.5038
(c) 4.4015 (d) 5.6002
(e) None of these

[Andhra Bank PO, 2011]

225. 0 6 24 60 120 210 ?

(a) 343 (b) 280
(c) 335 (d) 295
(e) None of these

[Andhra Bank PO, 2011]

Directions (Q. 226–230): In each question below, a number series is given in which one number is wrong. Find out the wrong number.

226. 484 240 120 57 26.5 11.25 3.625

(a) 240 (b) 120
(c) 57 (d) 26.5
(e) 11.25

[Allahabad Bank Po, 2010]

227. 3 5 13 43 176 891 5353

(a) 5 (b) 13
(c) 43 (d) 176
(e) 891

[Allahabad Bank Po, 2010]

228. 6 7 16 41 90 154 292

(a) 7 (b) 16
(c) 41 (d) 90
(e) 154

[Allahabad Bank Po, 2010]

229. 5 7 16 57 244 1245 7506

(a) 7 (b) 16
(c) 57 (d) 244
(e) 1245

[Allahabad Bank Po, 2010]

230. 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

[Allahabad Bank Po, 2010]

Directions (Q. 231–235): In the following number series only one number is wrong. Find out the wrong number.

231. 2 10 18 54 162 486 1458

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

[Indian Bank PO, 2010]

232. 13 25 40 57 79 103 130

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

[Indian Bank PO, 2010]

233. 850 600 550 500 475 462.5 456.25

(a) 600 (b) 550
(c) 500 (d) 4625
(e) None of these

[Indian Bank PO, 2010]

234. 142 119 100 83 65 49 42

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

[Indian Bank PO, 2010]

235. 8 12 24 46 72 108 216

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

[Indian Bank PO, 2010]

236. What is the ratio of the marks scored by E in Science and that in Hindi?

(a) 35:83 (b) 61.75
(c) 83:35 (d) 75:61
(e) None of these **[Indian Bank PO, 2010]**

237. If a minimum of 101 marks in Science subjects is required for opting science stream in the next academic year, how many students will not be able to opt science stream due to insufficient marks in Science subject?

(a) None (b) 2
(c) 4 (d) 5
(e) 3

[Indian Bank PO, 2010]

238. What is the total marks obtained by D in Hindi, E in Social Studies and C in Mathematics together?

(a) 258 (b) 244
(c) 235 (d) 210
(e) None of these

[Indian Bank PO, 2010]

Directions (Q. 239–243): What should come in place of the question mark (?) in the following number series?

239. 9 62 ? 1854 7415 22244

(a) 433 (b) 309
(c) 406 (d) 371
(e) None of these

[IDBI Bank PO, 2009]

240. 4 8 24 60 ? 224

(a) 178 (b) 96
(c) 109 (d) 141
(e) None of these

[IDBI Bank PO, 2009]

241. 8000 1600 320 64 12.8 ?

(a) 2.56 (b) 3.5
(c) 3.2 (d) 2.98
(e) None of these

[IDBI Bank PO, 2009]

242. 6 9 15 27 51 ?

(a) 84 (b) 99
(c) 123 (d) 75
(e) None of these

[IDBI Bank PO, 2009]

243. 7 8 18 ? 232 1165

(a) 84 (b) 42
(c) 57 (d) 36
(e) None of these **[IDBI Bank PO, 2009]**

Directions (Q. 244–248): In the following number series only one number is wrong. Find out the wrong number.

244. 11 18 29 42 59 80 101

(a) 42 (b) 18
(c) 29 (d) 59
(e) None of these **[OBC PO, 2009]**

245. 2 9 32 105 436 2195 13182

(a) 436 (b) 2195
(c) 9 (d) 32
(e) None of these

[OBC PO, 2009]

246. 5 55 495 3465 17325 34650 51975

(a) 495 (b) 34650
(c) 55 (d) 17325
(e) None of these

[OBC PO, 2009]

247. 3 7 16 32 56 93 142

(a) 56 (b) 16
(c) 32 (d) 7
(e) None of these

[OBC PO, 2009]

248. 4 5 12 38 160 805 4836

(a) 12 (b) 160
(c) 38 (d) 805
(e) None of these

[OBC PO, 2009]

Directions (Q. 249–253): What should come in place ofthe question mark (?) in the following number series?

249. 15 25 40 130 ?

(a) 500 (b) 520
(c) 490 (d) 480
(e) None of these

[NABARD Bank Officer, 2009]

250. 186 94 48 25 ?

(a) 13.5 (b) 14.8
(c) 12.5 (d) 14
(e) None of these

[NABARD Bank Officer, 2009]

251. 124 112 176 420 1488 ?

(a) 8568 (b) 7140
(c) 5712 (d) 6150
(e) None of these

[NABARD Bank Officer, 2009]

252. 384 381 372 345 264 ?

(a) 23 (b) 25
(c) 43 (d) 24
(e) None of these

[NABARD Bank Officer, 2009]

253. 282 286 302 ? 502

(a)366 (b) 318
(c) 326 (d) 338
(e) None of these

[NABARD Bank Officer, 2009]

Directions (Q. 254–255): In the following number series, only one number is wrong. Find out the wrong number.

254. 8 11 17 47 128 371 1100

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

[Corporation Bank PO, 2009]

255. 1 5 13 31 61 125 253

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

[Corporation Bank PO, 2009]

ANSWER KEYS

Exercise-1

1. (b)	**2.** (a)	**3.** (d)	**4.** (b)	**5.** (b)	**6.** (c)	**7.** (d)	**8.** (b)	**9.** (d)	**10.** (c)	**11.** (c)	**12.** (c)
13. (a)	**14.** (c)	**15.** (a)	**16.** (c)	**17.** (b)	**18.** (b)	**19.** (c)	**20.** (d)	**21.** (a)	**22.** (d)	**23.** (b)	**24.** (d)
25. (b)	**26.** (c)	**27.** (e)	**28.** (b)	**29.** (b)	**30.** (c)	**31.** (b)	**32.** (b)	**33.** (a)	**34.** (a)	**35.** (b)	**36.** (d)
37. (b)	**38.** (b)	**39.** (c)	**40.** (e)	**41.** (b)	**42.** (a)	**43.** (d)	**44.** (d)	**45.** (b)	**46.** (b)	**47.** (c)	**48.** (e)
49. (c)											

Exercise-2

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

181. (b)	**182.** (c)	**183.** (a)	**184.** (b)	**185.** (a)	**186.** (d)	**187.** (e)	**188.** (a)	**189.** (b)	**190.** (c)	**191** (b)	**192.** (a)
193. (d)	**194.** (d)	**195.** (b)	**196.** (a)	**197.** (e)	**198.** (e)	**199.** (d)	**200.** (b)	**201.** (a)	**202.** (b)	**203.** (d)	**204.** (d)
205. (a)	**206.** (d)	**207.** (c)	**208.** (e)	**209.** (d)	**210.** (b)	**211.** (d)	**212.** (b)	**213.** (a)	**214.** (e)	**215.** (d)	**216.** (b)
217. (d)	**218.** (a)	**219.** (c)	**220.** (b)	**221.** (c)	**222.** (b)	**223.** (d)	**224.** (a)	**225.** (e)	**226.** (b)	**227.** (d)	**228.** (e)
229. (a)	**230.** (c)	**231.** (d)	**232.** (c)	**233.** (a)	**234.** (a)	**235.** (c)	**236.** (a)	**237.** (e)	**238.** (b)	**239.** (d)	**240.** (e)
241. (a)	**242.** (b)	**243.** (c)	**244.** (e)	**245.** (d)	**246.** (b)	**247.** (a)	**248.** (c)	**249.** (e)	**250.** (a)	**251.** (b)	**252.** (e)
253. (d)	**254.** (c)	**255.** (c)									

EXPLANATORY ANSWERS

EXERCISE-1

1. **(b)** $8 - 5 = 3$, $12 - 8 = 4$, $17 - 12 = 5$, $23 - 17 = 6$
$\therefore$ $? - 23 = 7$
i.e., $? = 23 + 7 = 30$
With this, $38 - 30 = 8$.

2. **(a)** The pattern is
$9 = 2 \times 4 + 1$
$20 = 2 \times 9 + 2$
$43 = 2 \times 20 + 3$
$90 = 2 \times 43 + 4$
$\therefore$? should be $2 \times 90 + 5 = 185$.

3. **(d)** The first alternate series is 1, 4, 9, 16
i.e., 1^2, 2^2, 3^2, 4^2 and the second one is
1, 8, 27, ?
i.e., 1^3, 2^3, 3^3, 4^3.

4. **(b)** $2 \times 3 = 6$
$4 \times 5 = 20$
$6 \times 7 = 42$.

5. **(b)** $5 - 1 = 4$, $11 - 5 = 6$, $19 - 11 = 8$
$29 - 19 = 10$
$\therefore$ $? - 29 = 12$
$\therefore$ $? = 41$.

6. **(c)** Difference between successive terms are
3, 15, 7, 27, 11, ? − 66, 120 − ?
Here, odd places terms form a series
3, 7, 11, 120 − ?
which is an A.P. with common difference 4 and even places terms form a series
15, 27, ? − 66
$\therefore$ $120 - ? = 11 + 4 = 15$
$\therefore$ $? = 120 - 15 = 105$.

7. **(d)** $13 = 5 + 4 \times 2$, $25 = 13 + 4 \times 3$, $41 = 25 + 4 \times 4$
$? = 41 + 4 \times 5$, $85 = ? + 4 \times 6$
$113 = 85 + 4 \times 7$, $145 = 113 + 4 \times 8$
$\therefore$ $? = 41 \times 4 \times 5 = 61$. With this choice
$85 = ? + 4 \times 6$
$= 61 + 24$, which follows the pattern.

8. **(b)** $5 = 4 + 1^2$, $9 = 5 + 2^2$, $18 = 9 + 3^2$,
$34 = 18 + 4^2$,
$\therefore$ $? = 34 + 5^2 = 59$.

9. **(d)** $1799 - 899 = 900$
$899 - 449 = 450 \left(= \frac{1}{2} \times 900\right)$
$\therefore$ $449 - ? = \frac{1}{2} \times 450 = 225$
$\therefore$ $? = 449 - 225 = 224$.

10. **(c)** 1st, 4th, 7th, 10th, and 13th terms are:
2, 4, 6, 8, ?
which is an A.P. with common difference 2
$\therefore$ $? = 8 + 2 = 10$.

11. **(c)** $11 - 5 = 6$, $19 - 11 = 8$, $29 - 19 = 10$
$\therefore$ $? - 29 = 12$
$\therefore$ $? = 12 + 29 = 41$.

12. **(c)** 0, 3, 12, 30, ?, 105, 168
3, 9, 18, ? − 30, 105 − ?, 63
6, 9, ? − 48, 135 − 2?, ? − 42
If we take $? - 48 = 12$, then $? = 60$, with this choice $135 - 2? = 135 - 120 = 15$
and, $? - 42 = 18$
$\therefore$ 3rd row becomes
6, 9, 12, 15, 18,

which is an A.P. of common difference 3

$\therefore$? should be 60.

13. (a) $20 = 15 + 5 \times 1$;

$30 = 20 + 5 \times 2$

$\therefore$? should be $30 + 5 \times 3 = 45$.

14. (c) 1st, 3rd, 5th, 7th, terms are 1: 11, ?, 1001 10001 and 2nd, 4th, 6th, terms are

2: 10, 100, 1000

In 1:

(1) at first place there is no zero between 1's

(2) at 3rd place there are 2 zeros between 1's

(3) at 4th place there are 3 zeros between 1's

$\therefore$ According to this pattern there should be 1 zero between 1's at 2nd place

$\therefore$? be 101.

15. (a) $99 - 95 = 4 = 2^2$, $95 - 86 = 9 = 3^2$

$86 - 70 = 16 = 4^2$

$\therefore$ $70 - ? = 5^2$

$\therefore$ $70 - 25 = ?$

$\therefore$ $? = 45$.

16. (c) Numbers at even places form series

1: 18, 12, ?

and numbers at odd places form series

2: 5, 10, 15

Keeping the pattern in 1

? should be $12 - 6 = 6$.

17. (b) In the first alternate series, namely, 12, 14, 16 each term is increased by 2 and in the second, namely, 8, 6 each term is decreased by 2, missing figure is of 2nd series and hence should by $6 - 2 = 4$.

18. (b) Making pairs taking first number from right and first from left, 2nd number from right and 2nd number from left and so on.

(13, ?); (21, 12); (29, 92); (34, 43)

In each pair numbers have their digits reversed keeping this pattern, ? should be 31.

19. (c) $43 = 2^2 - 1$; $15 = 4^2 - 1$; $35 = 6^2 - 1$

$99 = 10^2 - 1$; $143 = 12^2 - 1$

$\therefore$ Missing figure should be $8^2 - 1 = 63$.

20. (d) The pattern is

$4 + 7 = 11$

$18 + 29 = 47$

$? + 123 = 199$

$\therefore$ $? = 199 - 123 = 76$.

21. (a) Series formed by numbers at odd and even places respectively are:

455, 465, 485, 475 …(1)

and, 445, 435, 415 …(2)

The difference between successive terms of I are:

10, 20, –10

and of 2 are

–10, – 20

–10 in (1) is abnormal. It should be 30

$\therefore$ 475 is wrong and should be replaced by $485 + 30 = 515$.

22. (d) $10 = 2 \times 3 + 4$

$24 = 2 \times 10 + 4$

$54 = 2 \times 24 + 6$

$108 = 2 \times 54 + 0$

$220 = 2 \times 108 + 4$

$444 = 2 \times 220 + 4$

Pattern is disturbed at 3rd and 4th stages.

$\therefore$ 54 is wrong and should be replaced by $2 \times 24 + 4 = 52$. With this choice at 4th stage, $108 = 2 \times 52 + 4$ which follows pattern.

23. (b) $18 = 8 \times 2 + 2 \times 1$; $40 = 18 \times 2 + 2 \times 2$

$86 = 40 \times 2 + 2 \times 3$; $178 \neq 86 \times 2 + 2 \times 4$

$370 \neq 178 \times 2 + 2 \times 5$; $752 = 370 \times 2 + 2 \times 6$

$\therefore$ 178 is wrong and should be replaced by

$2 \times 86 + 2 \times 4 = 180$

With this choice 5th place

$2 \times 180 + 2 \times 5 = 370$

which is according to the pattern.

24. (d) $2676 = 6 \times 445 + 6$; $445 \neq 5 \times 84 + 5$

$84 \neq 4 \times 21 + 4$; $21 = 3 \times 6 + 3$

$6 = 2 \times 2 + 2$; $2 = 1 \times 1 + 1$

Obviously, 84 is wrong and should be replaced by $4 \times 21 + 4 = 88$

With this, $445 = 5 \times 88 + 5$.

25. (b) Numbers at even places are

$16 = 4^2$; $64 = 8^2$; $216 \neq 12^2$

and numbers at odd places are

$1 = 1^2$; $9 = 3^2$; $25 = 5^2$; $49 = 7^2$

$\therefore$ 216 is wrong.

26. (c) $864 = 2 \times 420 + 4 \times 6$; $420 = 2 \times 200 + 4 \times 5$

$200 \neq 2 \times 96 + 4 \times 4$; $96 \neq 2 \times 40 + 4 \times 3$

$40 = 2 \times 16 + 4 \times 2$; $16 = 2 \times 6 + 4 \times 1$

$\therefore$ 96 is wrong and should be replaced by $2 \times 40 + 4 \times 3 = 92$. With this choice at 3rd stage

$200 = 2 \times 92 + 4 \times 4$.

27. (e) $13 - 9 = 4$; $21 - 13 = 8$; $37 - 21 = 16$

$69 - 37 = 32$; $132 - 69 = 63$; $261 - 132 = 129$

Pattern is disturbed at last 2 stages.

$\therefore$ 132 is wrong and should be replaced by $69 + 64 = 133$. With this choice at last stage

$261 - 133 = 128$.

28. (b) Series formed by numbers at odd places and even places respectively are

1: 2, 18, 24, 34

2: 5, 19, 29

Successive terms in 1 and 2 have difference

16, 6, 10

and 14, 10, respectively.

Abnormality is at 16. It should be replaced by 2

$\therefore$ 2 is wrong and should be replaced by 16.

29. (b) 5 − 1 = 4; 11 − 5 = 6; 19 − 11 = 8

29 − 19 = 10; 55 − 29 = 26

Pattern gets disturbed at last stage

$\therefore$ 55 is wrong

It should be 29 + 12 = 41.

30. (c) Numbers at odd and even places form respective series

1: 2, 4, 8, 64

i.e., 2^1, 2^2, 2^3, 2^6

and, 2: 4, 16, 256

i.e., 2^2, 2^4, 2^8

Obviously, $2^6 = 64$ is wrong and should be replaced by $2^4 = 16$.

31. (b) If 216 is replaced by 217 the terms of the series will get arranged in the order of

$1 \times (1)^2 + 1$, $2 \times (2)^2 + 1$, $3 \times (3)^2 + 1$, $4 \times (4)^2 + 1$ .... and so on.

Therefore, alternative (b) is the correct answer.

32. (b) A careful scrutiny of the series reveals that if 50 is replaced by 49, then difference between successive terms will be in the order of 1, 3, 5, 7, 9, 11. Therefore, alternative (b) is the correct answer.

33. (a) If 169 is replaced by 225 the terms will get arranged in a particular series, that is, $(1^2 - 1)^2$,

$(2^2 - 1)^2$, $(3^2 - 1)^2$, $(4^2 - 1)^2$, $(5^2 - 1)^2$ and $(6^2 - 1)^2$.

Therefore, alternative (a) is the correct answer.

34. (a) If 7 is replaced by 8 these terms of the series will get arranged in order of

$1 \times 2 + 1$, $3 \times 2 + 2$, $8 \times 2 + 3$,

$19 \times 2 + 4$, $42 \times 2 + 5$, $89 \times 2 + 6$

Therefore, alternative (a) is the correct answer.

35. (b) A careful scrutiny of the series reveals that if 80 is replaced by 81 then the series will be arranged in the order of

13^2, 11^2, 9^2, 7^2, 5^2, 3^2, 1^2. Therefore, (b) is the correct alternative.

36. (d) It is obvious from the given series that if 9 is replaced by 8 then difference between successive terms will be in the order of 1^2, 3^2, 5^2, 7^2, 9^2 and 11^2

Therefore, alternative (d) is the correct answer.

37. (b) If 48 is replaced by 50 each term of the series is obtained by subtracting 2 from twice its previous term. Therefore, alternative (b) is the correct answer.

38. (b) If 73 is replaced by 75, difference between successive terms of the series will be in the order of 9, 11, 13, 15, 17 and 19.

Therefore, alternative (b) is the correct alternative.

39. (c) A careful scrutiny of the given series reveals that second term is 2 times the first, third term is 4 times the second and fourth term is 3 times the third. The same pattern is being followed by the remaining terms of the series. Therefore, 2688 should be replaced by 4032. Hence, alternative (c) is the correct alternative.

40. (e) If 15 is replaced by 13 the difference between successive terms will be in the order of 2, 4, 2, 4, ... and so on. Therefore, alternative (e) is the correct alternative.

41. (b) The pattern followed by the numbers of the given series is:

$9 = 8 \times 1 + 1$; $65 = 7 \times 9 + 2$

$393 = 6 \times 65 + 3$

$\therefore$ (A) $= 8 \times 2 + 1 = 17$

(B) $= 7 \times 17 + 2 = 121$

(C) $= 6 \times 121 + 3 = 729$

(D) $= 5 \times 729 + 4 = 3649$

(E) $= 4 \times 3649 + 5 = 14601$.

42. (a) The pattern is

$616 - 496 = 120 = 12 \times 10$

$469 - 397 = 99 = 11 \times 9$

$397 - 317 = 80 = 10 \times 8$

$317 - 254 = 63 = 9 \times 7$

$\therefore$ (A) $= 838 - 120 = 718$

(B) $= 718 - 99 = 619$

(C) $= 619 - 80 = 539$

(D) $= 539 - 63 = 476$

(E) $= 476 - 48\ (= 8 \times 6) = 428$.

43. (d) $434 - 353 = 9^2$

$353 - 417 = 8^2$

$417 - 368 = 7^2$

$368 - 404 = 6^2$

$404 - 379 = 5^2$

$\therefore$ $108 - (A) = 9^2 \Rightarrow (A) = 108 - 81 = 27$

$27 - (B) = -8^2 \Rightarrow (B) = 27 + 64 = 91$

$91 - (C) = 7^2 \Rightarrow (C) = 91 - 49 = 42$

$42 - (D) = -6^2 \Rightarrow (D) = 42 + 36 = 78$

$78 - (E) = 5^2 \Rightarrow (E) = 78 - 25 = 53$.

44. (d) The rule followed is:

$272 = 2 \times 120 + 8 \times 4$

$120 = 2 \times 48 + 8 \times 3$

$48 = 2 \times 16 + 8 \times 2$

$16 = 2 \times 4 + 8 \times 1$

$\therefore$ (A) $= 2 \times 124 + 8 \times 1 = 256$

(B) $= 2 \times 256 + 8 \times 2 = 528$

(C) $= 2 \times 528 + 8 \times 3 = 1080$

(D) $= 2 \times 1080 + 8 \times 4 = 2192$

(E) $= 2 \times 2192 + 8 \times 5 = 4424$.

45. **(b)** The pattern followed by the numbers of given series is:

$9 = 8 \times 1 + 1$; $65 = 7 \times 9 + 2$; $393 = 6 \times 65 + 3$

$\therefore$ (A) $= 8 \times 2 + 1 = 17$

(B) $= 7 \times 17 + 2 = 121$

(C) $= 6 \times 121 + 3 = 729$

(D) $= 5 \times 729 + 4 = 3649$

(E) $= 4 \times 3649 + 5 = 14601$.

46. **(b)** $848 = 2 \times 420 + 8$ $\therefore$ (A) $= \frac{664-8}{2} = 328$

$420 = 2 \times 206 + 8$ (B) $= \frac{328-8}{2} = 160$

$206 = 2 \times 99 + 8$ (C) $= \frac{160-8}{2} = 76$

$99 = 2 \times 45.5 + 8$ (D) $= \frac{76-8}{2} = 34$

(E) $= \frac{34-8}{2} = 13$.

47. **(c)** The rule is

$8 = \frac{8}{2} \times 2$ $\therefore$ (A) $= \frac{36}{2} \times 2 = 36$

$12 = \frac{8}{2} \times 3$ (B) $= \frac{36}{2} \times 3 = 54$

$24 = \frac{12}{2} \times 4$ (C) $= \frac{54}{2} \times 4 = 108$

(D) $= \frac{108}{2} \times 5 = 270$

(E) $= \frac{270}{2} \times 6 = 810$.

48. **(e)** $449 = 4 \times 111 + 5$ $\therefore$

$111 = 3 \times 35 + 6$

$35 = 2 \times 14 + 7$

$14 = 1 \times 6 + 8$

(A) $= 1 \times 3 + 8 = 11$

(B) $= 2 \times 11 + 7 = 29$

(C) $= 3 \times 29 \times 6 = 93$

(D) $= 4 \times 93 \times 5 = 377$

(E) $= 5 \times 377 + 4 = 1889$.

49. **(c)** The pattern is

$5736 = 4 \times 1435 - 4$

$1435 = 5 \times 288 - 5$

$288 = 6 \times 49 - 6$

$49 = 7 \times 8 - 7$

$\therefore$ (A) $= 7 \times 5 - 7 = 28$

(B) $= 6 \times 28 - 6 = 162$

(C) $= 5 \times 162 - 5 = 805$

(D) $= 4 \times 805 - 4 = 3216$

(E) $= 3 \times 3216 - 3 = 9645$.

EXERCISE-2
(BASED ON MEMORY)

1. **(c)** The sequence in the given series is + 2, + 6, + 10, + 14, + 18

2. **(b)** Series 1: 2, 2 + 8 = 10, 10 + 8 = 18, 18 + 8 = 26, 26 + 8 = 34

Series 2: 5, 5 + 9 = 14, 14 + 9 = 23, 23 + 9 = 32

3. **(e)** 7413, 7413 + 9 = 7422, 7422 + 18 = 7440, 7440 + 27 = 7467, 7467 + 36 = 7503, 7503 + 45 = 7548

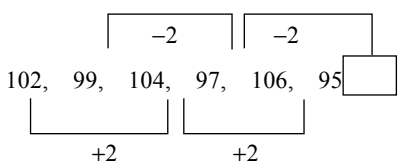
4. **(d)**

4	16	36	64	100	144
↓	↓	↓	↓	↓	↓
$(2)^2$	$(4)^2$	$(6)^2$	$(8)^2$	$(10)^2$	$(12)^2$

5. **(a)** 12, $12 \times 3 - 3 = 33$, $33 \times 3 - 3 = 96$, $96 \times 3 - 3 = 285$, $285 \times 3 - 3 = 852$, $852 \times 3 - 3 = 2553$

6. **(c)** 70000, $70000 \div 5 = 14000$, $14000 \div 5 = 2800$, $2800 \div 5 = 560$, $560 \div 5 = 112$, $112 \div 5 = 22.4$

7. **(b)**



8. **(e)** $14 \times 3 + 1.5 = 43.5$, $43.5 \times 6 + 3 = 264$, $264 \times 12 + 6 = 3174$, $3174 \times 24 + 12 = 76188$

9. **(c)** The series is: $41 \times 2^2 = 164$, $164 \times 4^2 = 2624$, $2624 \times 6^2 = 94464$, $94464 \times 8^2 = 6045696$

10. **(c)** $32 + 17 = 49$, $49 + 34 = 83$, $83 + 68 = 151$, $151 + 136 = 287$, $287 + 272 = 559$, $559 + 544 = 1103$

11. **(a)** $12 + 2 = 14$, $14 + 3 = 17$, $17 - 4 = 13$, $13 - 5 = 8$, $8 + 6 = 14$, $14 + 7 = 21$, $21 - 8 + 13$, $13 - 9 = 4$, $4 + 10 = 14$

12. **(c)** $4 \times 1.5 = 6$, $6 \times 2 = 12$, $12 \times 2.5 = 30$, $30 \times 3 = 90$, $90 \times 3.5 = 315$, $315 \times 4 = 1260$

13. **(e)** 25 16 ? 4 1

i.e., 5^2 4^2 3^2 2^2 1^2

Hence, ? = 9

14. **(c)** $15 - 3 = 12$, $12 + 5 = 17$, $17 - 7 = 10$, $10 + 11 = 21$, $21 - 13 = 8$, $8 + 17 = 25$, $25 - 19 = 6$

Note that 3, 5, 7, 11, 13, 17 and 19 are consecutive prime numbers.

15. **(e)** The series is: $(\times 2) - 1$

$\therefore$? $= 113 \times 2 - 1 = 225$

16. **(d)** The series is +5, +10, +15, +20, +25
So, 45 is wrong. It should be 47

17. **(c)** The series is:
$\times 1 + 1, \times 2 + 2, \times 3 + 3, \times 4 + 4, \times 5 + 5, \times 6 + 6$
34 should be 33 and thus the new series starts with 34.

18. **(d)** The series is
$-(14)^2, +(12)^2, -(10)^2, +(8)^2, -(16)^2$ and so on. 143 should be 126 and thus the new series starts with 143.

19. **(e)** The series is
$\times \frac{1}{2}, \times \frac{3}{2}, \times \frac{5}{2}, \times \frac{7}{2}, \times \frac{9}{2}, \times \frac{11}{2}$ and so on.
So, 180 is incorrect.

20. **(a)** The series is $+1^2 - 0, +2^2 - 1, +3^2 - 2, +4^2 - 3, +5^2 - 4, +6^2 - 5$.
So, 7 is incorrect.

21. **(d)** The series is $\times 8 + 1, \times 7 + 2, \times 6 + 3$,
$\therefore \quad a = 2 \times 8 + 1 = 17, b = 17 \times 7 + 2 = 121$
$c = 121 \times 6 + 3 = 729$.

22. **(a)** The series is $\times 1, \times 1.5, \times 2$
$\therefore \quad a = 36 \times 1 = 36, b = 36 \times 1.5 = 54, c = 54 \times 2 = 108, d = 108 \times 2.5 = 270, e = 270 \times 3 = 810$.

23. **(c)** The series is $\div 2 - 4$
$\therefore \quad a = 888 \div 2 - 4 = 440$
and, $b = 440 \div 2 - 4 = 216$.

24. **(e)** The series is $\times 1 + 1, \times 1.5 + 2.25, \times 2 + 4, \times 2.5 + 6.25, \times 3 + 9, \ldots$
$\therefore \quad a = 7 \times 1 + 1 = 8$,
$b = 8 \times 1.5 + 2.25 = 14.25$
$c = 14.25 \times 2 + 4 = 32.5$,
$d = 32.5 \times 2.5 + 6.25 = 81.25 + 6.25 = 87.25$.

25. **(b)** The series is
$+(17)^2, -(15)^2, +(13)^2, -(11)^2, +(9)^2$
$\therefore \quad a = 13 + (17)^2 = 302$
$b = 302 - (15)^2 = 302 - 225 = 77$
$c = 77 + (13)^2 = 77 + 169 = 246$
$d = 246 - (11)^2 = 246 - 121 = 125$
$e = 125 + (9)^2 = 125 + 81 = 206$.

26. **(e)** The series is $\times 1 + 1, \times 2 + 2, \times 3 + 3, \ldots$ So 8 is wrong.
Beginning with 8 we get 20 as third term.

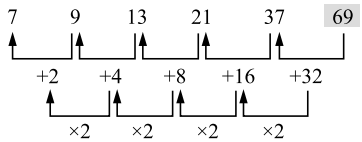
27. **(b)** The series is $\times 1 + 1^2, \times 2 + 2^2, \times 3 + 3^2, \ldots$
So, 265 is incorrect.

28. **(b)** The series is $\times 2 + 9, \times 2 + 11, \times 2 + 13, \ldots$
So, 58 is incorrect.

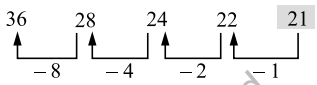
29. **(d)** The series is
$\times 3 + 1, \times 4 + 1, \times 5 + 1, \ldots$
So, 28 is incorrect.

30. **(c)** The series is
$\times 1 + 1^2, \times 2 + 2^2, \times 3 + 3^2, \times 4 + 4^2 \ldots$
So, 6 is incorrect.

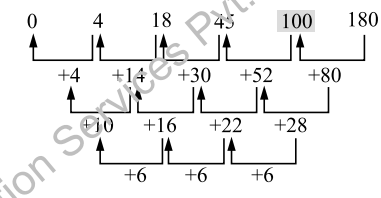
31. **(c)**



32. **(c)**



33. **(d)**



34. **(b)**

9	8	7
↓	↓	↓
I	*H*	*G*

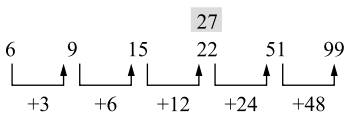
Likewise,

6	5	4
↓	↓	↓
F	*E*	*D*

35. **(d)** $5^2 - 1 = 24; 5^3 + 1 = 126 :: 7^2 - 1 = 48; 7^3 + 1 = 344$

36. **(d)** $(1)^3 = 1; (2)^3 = 8 :: (3)^3 = 27; (4)^3 = 64$

37. **(c)**



$\therefore$ 22 should be replaced by 27.

38. **(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.

39. **(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 $(6)^2 = 36$

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

$8 - ? = 2$

$-? = 2 - 8$

$-? = -6$

$\therefore \quad ? = 6$

41. **(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,

$? - 645 = 1296$

$\therefore \quad ? = 1296 + 645$

$? = 1941$

42. **(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, $29 \times 29 = 729$

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

$29 - 19 = 10$

$49 - 29 = 20$

$89 - 49 = 40$

Likewise,

$? - 89 = 80$

$? = 80 + 89$

$? = 169$

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

$34 - 18 = 16$, $18 - 10 = 8$ $\Big\}$ $16 \div 2 = 8$

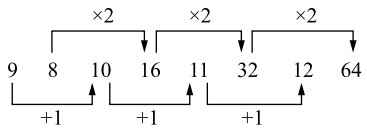
$10 - ? = 4$ $\Big\}$ $8 \div 2 = 4$

Therefore, $- ? = 4 - 10$

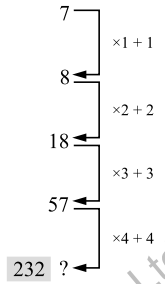
$\Rightarrow \quad = ? = -6$

$\Rightarrow \quad ? = 6$

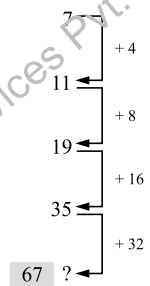
45. **(d)**



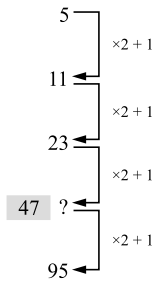
46. **(a)**



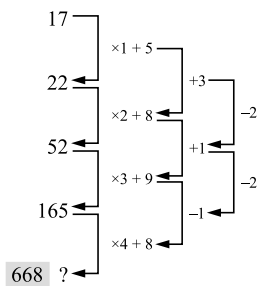
47. **(e)**



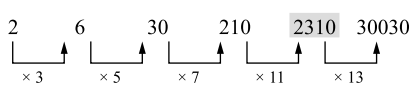
48. **(c)**



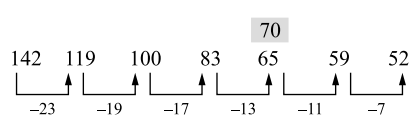
49. **(d)**



50. **(a)**



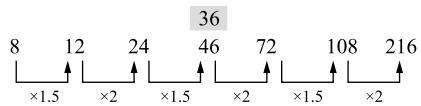
51. **(a)**



So, wrong number = 65

Correct number = 83 – 13 = 70

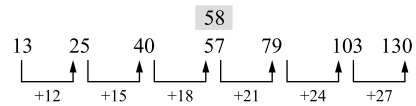
52. (c)



So, wrong number = 46

Correct number = $24 \times 1.5 = 36$

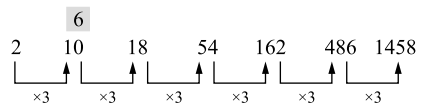
53. (c)



So, wrong number = 57

Correct number = 40 + 18 = 58

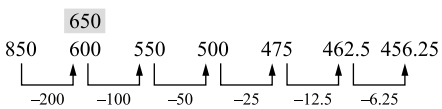
54. (d)



So, wrong number = 10

Correct number = $2 \times 3 = 6$

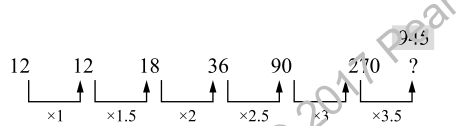
55. (a)



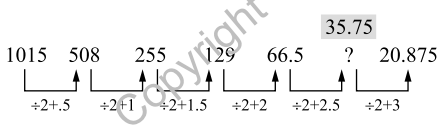
So, wrong number = 600

Correct number = 850 – 200 = 650

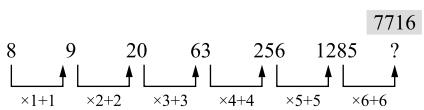
56. (a)



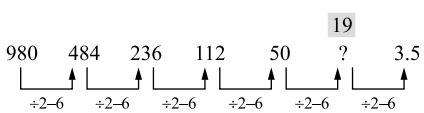
57. (d)



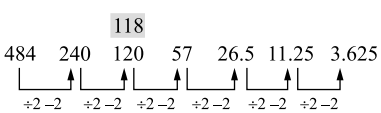
58. (c)



59. (e)

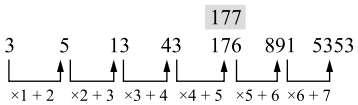


60. (b)



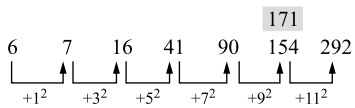
Hence, wrong number is 120.

61. (d)



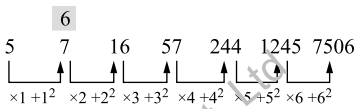
Hence, wrong number is 176.

62. (e)



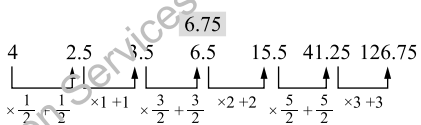
Hence, wrong number is 154.

63. (a)



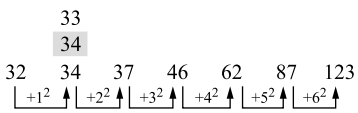
Hence, wrong number is 7.

64. (c)



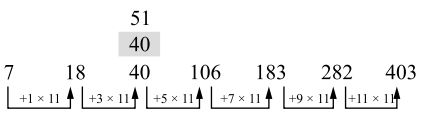
Hence, wrong number is 6.5.

65. (a)



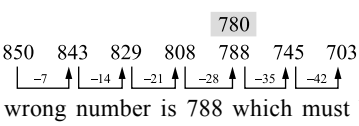
So, the wrong number is 34 which must be 33.

66. (c)



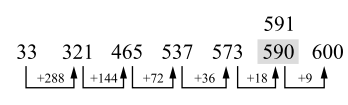
So, the wrong number is 40 which must be 51.

67. (d)



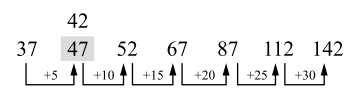
So, the wrong number is 788 which must be 780.

68. (e)



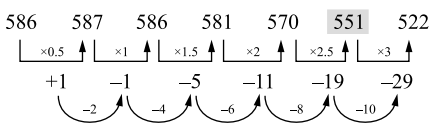
So, the wrong number is 590 which must be 591.

69. (a)

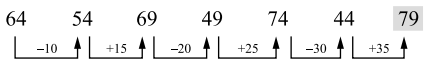


So, the wrong number is 47 which must be 42.

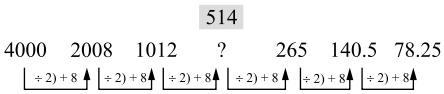
70. (c)



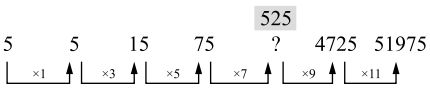
71. (e)



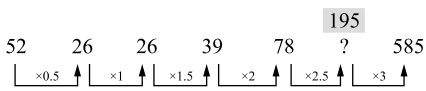
72. (b)



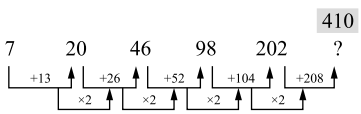
73. (c)



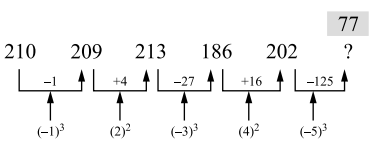
74. (a)



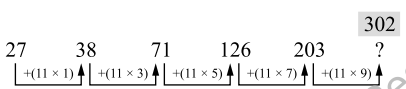
75. (b)



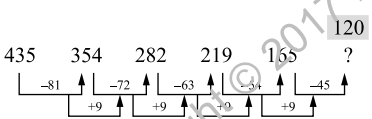
76. (b)



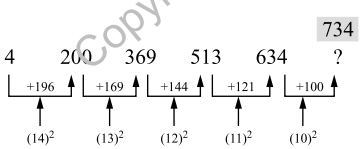
77. (e)



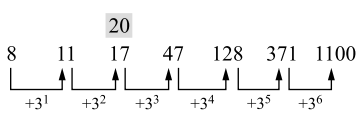
78. (c)



79. (c)



80. (c)

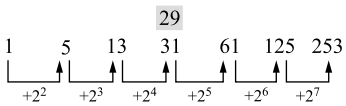


Right number = $11 + 3^2$

$= 11 + 9 = 20$

Wrong number is 17.

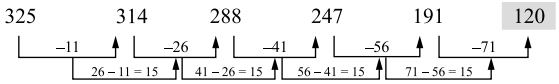
81. (c)



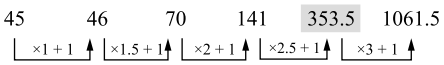
Wrong number is 31.

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

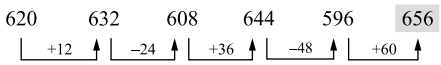
82. (d)



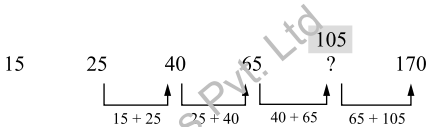
83. (b)



84. (c)



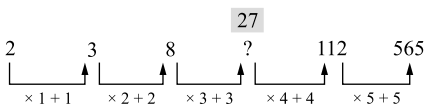
85. (c)



86. (e)

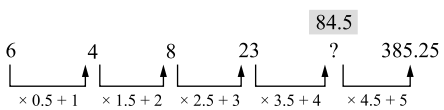
So, 138 is the answer.

87. (c)



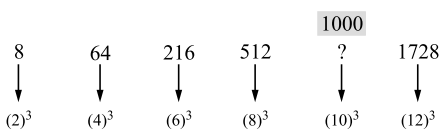
So, the answer is 27.

88. (a)



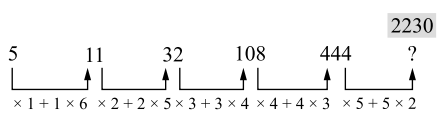
So, the answer is 84.5.

89. (d)



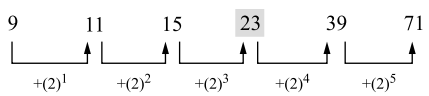
So, the answer is 1000.

90. (b)



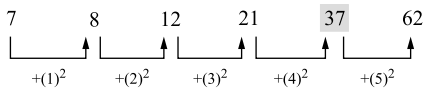
So, the answer is 2230.

91. (b)



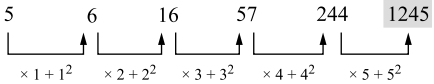
So, 23 will come at the place of question mark (?).

92. (e)



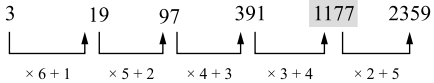
So, 37 will come at the place of question mark (?).

93. (d)



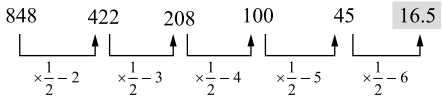
So, 1245 will come at the place of question mark (?).

94. (c)



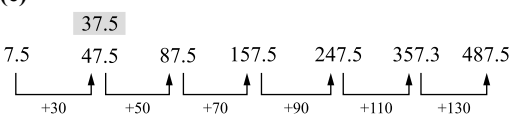
So, 1177 will come at the place of question mark (?).

95. (a)



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

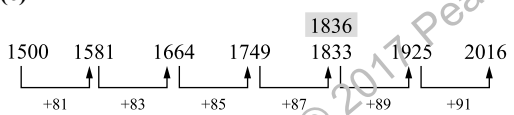
96. (e)



Right number = 7.5 + 30 = 37.5

So, wrong number = 47.5.

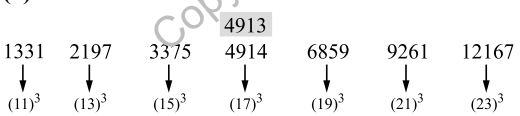
97. (c)



Right number = 1836

So, wrong number = 1833

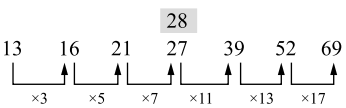
98. (a)



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

So, wrong number = 4914.

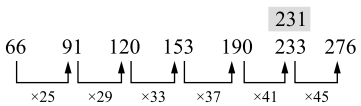
99. (c)



Right number = 21 + 7 = 28

So, wrong number = 27.

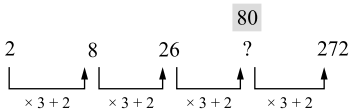
100. (b)



Right number = 190 + 41 = 231

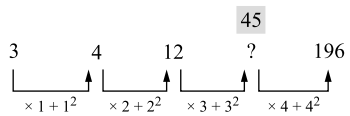
So, wrong number = 233.

101. (e)



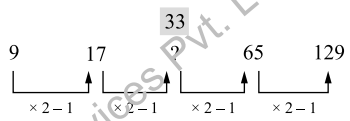
So, 80 will come at the place of question mark.

102. (a)



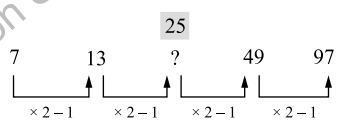
Hence, the answer is 45.

103. (d)



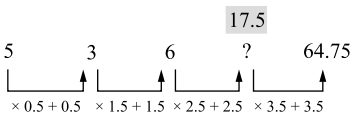
Hence, the answer is 33.

104. (b)



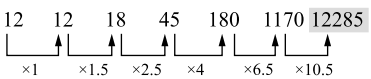
Hence, the answer is 25.

105. (c)



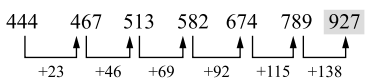
Hence, the answer is 17.5.

106. (a)



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

107. (c)



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

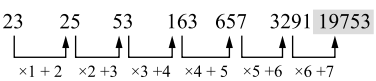
108. (b) 1 16 81 256 625 1296 2401

↓ ↓ ↓ ↓ ↓ ↓

$(1)^1$ $(2)^4$ $(3)^4$ $(4)^4$ $(5)^4$ $(6)^4$

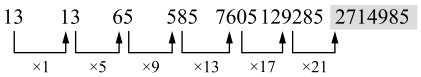
So, 2401 will come at the place of question mark.

109. (e)



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

110. (d)



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

111. (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.

112. (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.

113. (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.

114. (e)

11 26 58 124 258 528 **1070**

$\times2+4$ $\times2+6$ $\times2+8$ $\times2+10$ $\times2+12$ $\times2+14$

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

115. (c)

738 765 819 900 1008 1143 **1305**

+27 +54 +81 +108 +135 +162

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

116. (e)

9050 5675 3478 2147 1418 **1075** 1077 950

$(5)^3$ $(7)^3$ $(9)^3$ $(11)^3$ $(13)^3$ $(15)^3$

∴ Hence, 1077 is wrong number.

117. (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, $2 = 2 \times \frac{2}{2}$; $8 = 4 \times \frac{4}{2}$; $18 = 6 \times \frac{6}{2}$

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

118. (c)

6 91 **582** **584** 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.

119. (d)

1 4 **27** 25 256 3125 46656 823543

$(1)^1$ $(2)^2$ $(3)^3$ $(4)^4$ $(5)^5$ $(6)^6$ $(7)^7$

Hence, 25 is the wrong number.

120. (b)

8424 4212 2106 **1053** **1051** 526.5 263.25 131.625

÷2 ÷2 ÷2 ÷2 ÷2 ÷2

Hence, 1051 is the wrong number.

121. (c)

4 5 12 **39** 38 160 805 4836

×1+1 ×2+2 ×3+3 ×4+4 ×5+5 ×6+6

Hence, the wrong number is 38.

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

122. (a)

3 7 16 32 **57** 56 93 142

$+(2)^2$ $+(3)^2$ $+(4)^2$ $+(5)^2$ $+(6)^2$ $+(7)^2$

Hence, the wrong number is 56.

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

$= 32 + 25$

$= 57.$

123. (e)

11 18 29 42 59 **78** 80 101

+7 +11 +13 +17 +19 +23

Hence, the wrong number is 80.

Right number = 59 + 19 = 78.

124. (d)

2 9 **30** 32 105 436 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 = $9 \times 2 + 2 \times 6$

$= 18 + 12$

$= 30.$

125. (b)

5 55 495 3465 17325 **51975** 34650 51975

×11 ×9 ×7 ×5 ×3 ×1

So, the wrong number is 34650.

Right number = 17325×3

$= 51975.$

126. (c)

17 52 158 477 **1435** 4310

×3+1 ×3+2 ×3+3 ×3+4 ×3+5

? = 1435

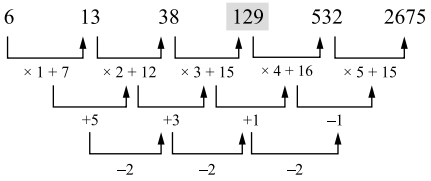
127. (d)

3 22 **134** 673 2696 8093

×7+1 ×6+2 ×5+3 ×4+4 ×3+5

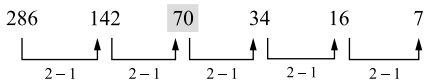
? = 134

128. (a)



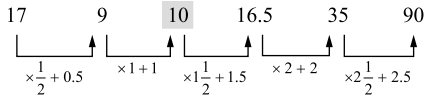
? = 70

129. (e)



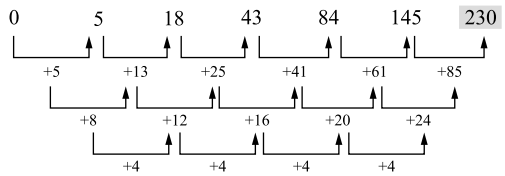
? = 129

130. (c)

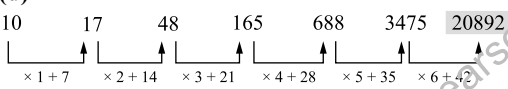


? = 10

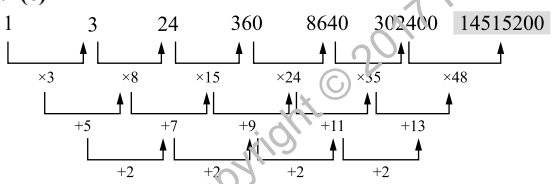
131. (e)



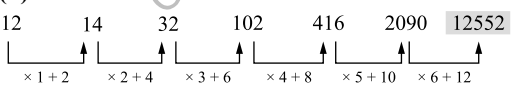
132. (d)



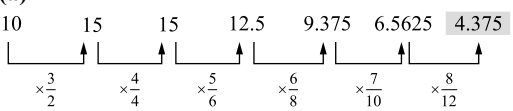
133. (c)



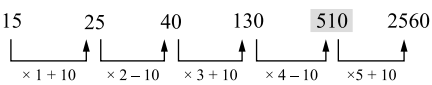
134. (b)



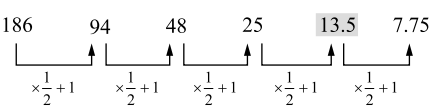
135. (a)



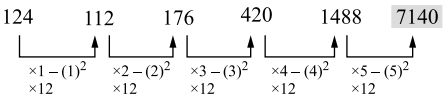
136. (e)



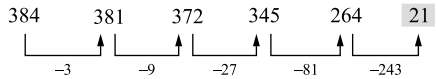
137. (a)



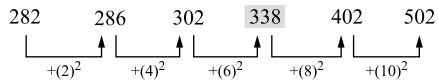
138. (b)



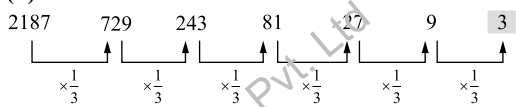
139. (e)



140. (d)

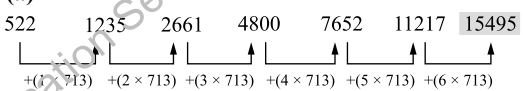


141. (b)



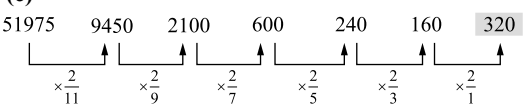
So, 3 will come at the place of question mark.

142. (a)



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

143. (c)



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

144. (e) $4 \rightarrow 2 \times 2$

$18 \rightarrow 3 \times 6$

$48 \rightarrow 4 \times 12$

$100 \rightarrow 5 \times 20$

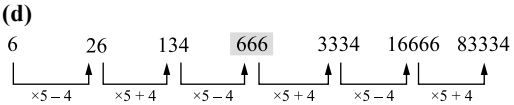
$180 \rightarrow 6 \times 30$

$294 \rightarrow 7 \times 42$

$448 \rightarrow 8 \times 56$

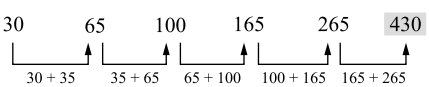
So, 448 will come at the place of question mark.

145. (d)

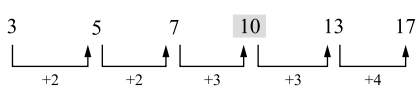


So, 83334 will come at the place of question mark.

146. (c)

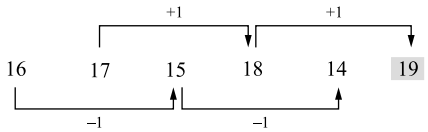


147. (b)



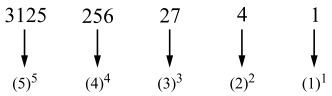
So, 10 will come at the place of question mark.

148. (e)



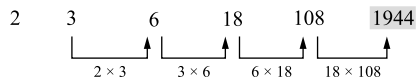
So 19 will come at the place of question mark.

149. (a)



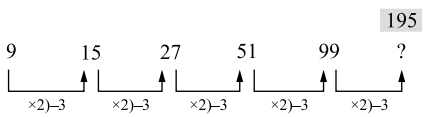
So, 27 will come at the place of question mark.

150. (b)

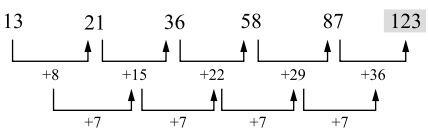


So, 1944 will come at the place of question mark.

151. (b)



152. (d) The pattern of series is



153. (d) The pattern of series is

$7 + (1)^2 + 1 = 9$

$+2 \downarrow$

$9 + (3)^2 + 1 = 19$

$+2 \downarrow$

$19 + (5)^2 + 1 = 45$

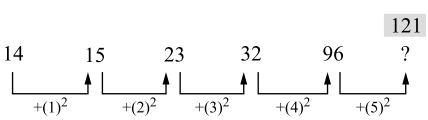
$+2 \downarrow$

$45 + (7)^2 + 1 = 95$

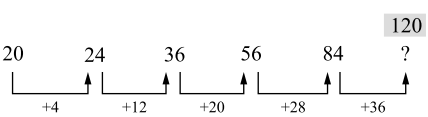
$+2 \downarrow$

$95 + (9)^2 + 1 = 177$

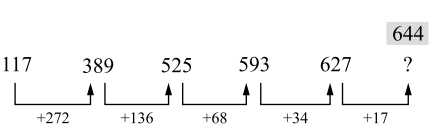
154. (a)



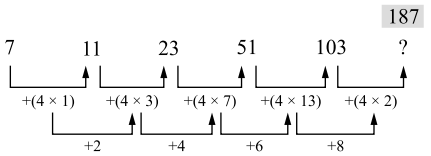
155. (c)



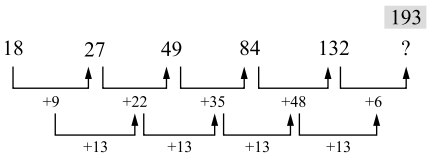
156. (e)



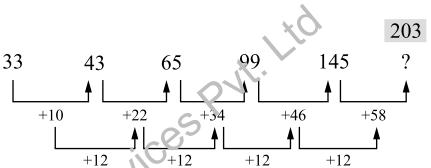
157. (d)



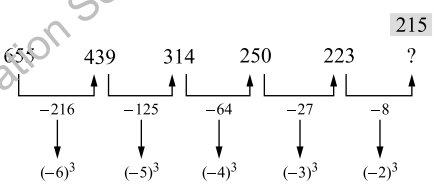
158. (d)



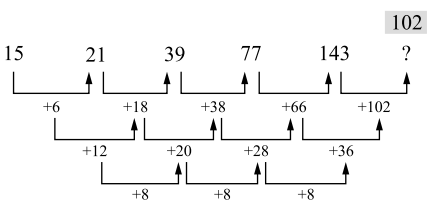
159. (b)



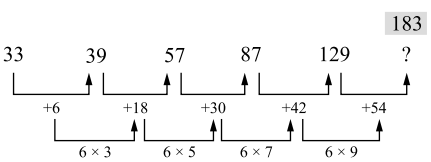
160. (e)



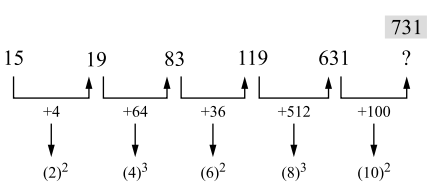
161. (e)



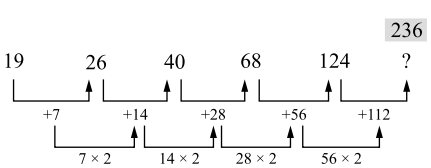
162. (a)



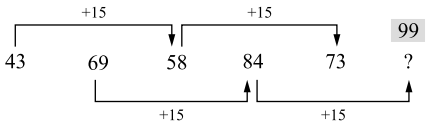
163. (a)



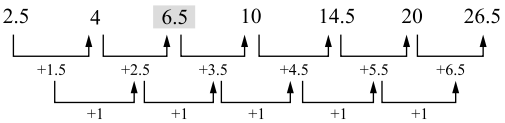
164. (c)



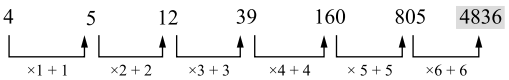
165. (e)



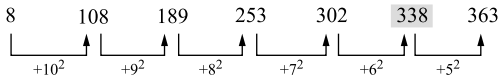
166. (e) The sequence of the series is



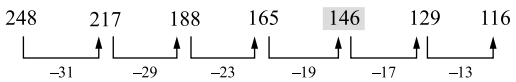
167. (a) The sequence of the series is



168. (c) The sequence of the series is

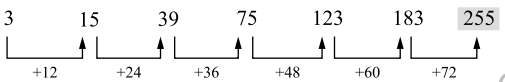


169. (d) The sequence of the series is

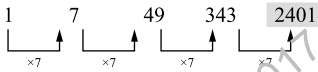


In the above series numbers are decreasing by prime numbers.

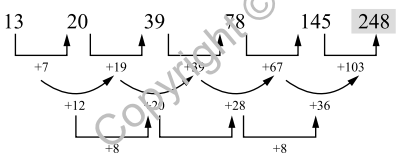
170. (a) The sequence of the series is



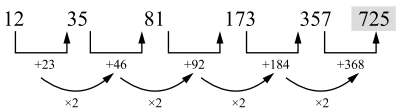
171. (d) The sequence of the series is



172. (d) The sequence of the series is

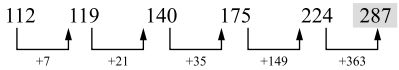


173. (a) The sequence of the series is

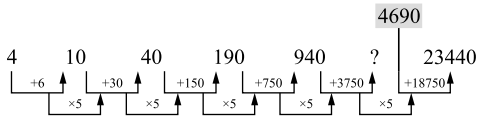


174. (e) 3 + 97 = 100
+ 100 ↓
100 + 197 = 297
+ 100 ↓
297 + 297 = 594
+ 100 ↓
594 + 397 = 991
+ 100 ↓
991 + 497 = 1488

175. (c)

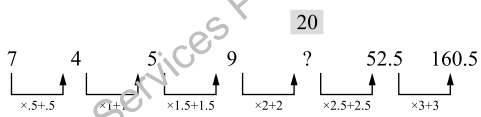


176. (a)

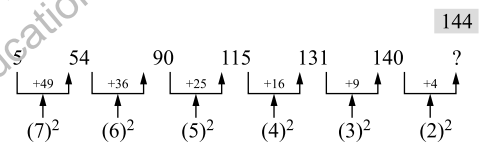


177. (b) 4000 2008 1012 ? 265 140.5 78.25
4000 – 2008 = 1992 ÷ 2 = 996
2008 – 1012 = 996 ÷ 2 = 498
1012 – 514 = 498 ÷ 2 = 249
514 – 265 = 249 ÷ 2 = 124.5
265 – 140.5 = 124.5 ÷ 2 = 62.25

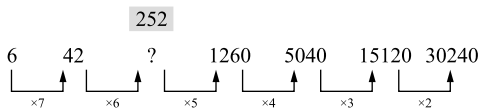
178. (d)



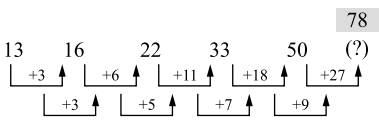
179. (e)



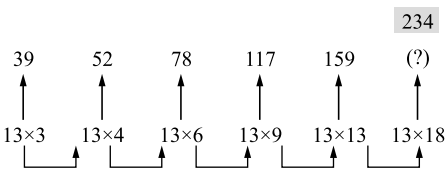
180. (c)



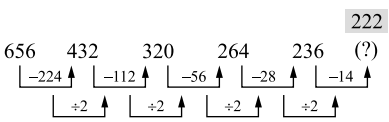
181. (b)



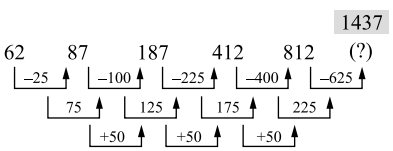
182. (c)



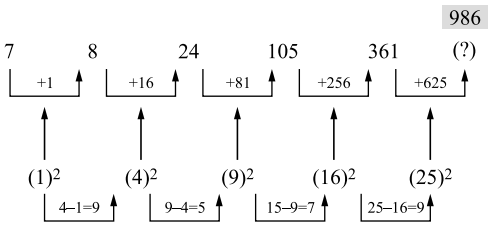
183. (a)



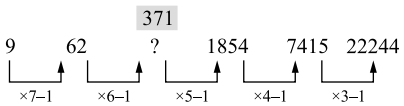
184. (b)



185. (a)

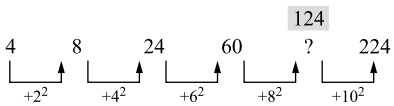


186. (d)



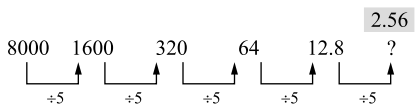
Hence, the answer will be 371.

187. (e)



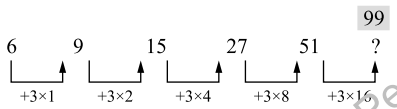
Hence, the answer will be 124.

188. (a)



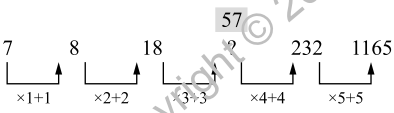
Hence, the answer will be 2.56.

189. (b)



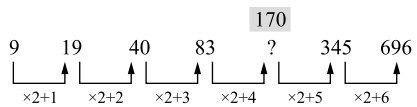
Hence, the answer will be 99.

190. (c)



Hence, the answer will be 57.

191. (b)



192. (a) The pattern is:

$1^3 - 1 = 1 - 1 = 0$

$2^3 - 1 = 8 - 1 = 7$

$3^3 - 1 = 27 - 1 = 26$

$4^3 - 1 = 64 - 1 = 63$

$5^3 - 1 = 125 - 1 = 124$

$6^3 - 1 = 216 - 1 = 215 \neq 217$

193. (d) The pattern is as given below:

$3 \times 6 = 18$

$18 - 6 = 12$

$12 \times 6 = 72$

$72 - 6 = 66$

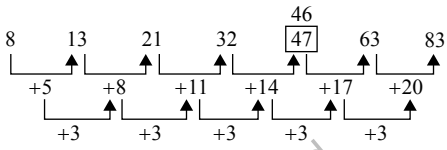
$66 \times 6 = 396$

$396 - 6 = 390$

194. (d) Since, the given numbers are prime numbers, 2, 3, 5, 7, 11, $\boxed{13}$, 17, 19, ...

$\therefore$ Missing number = 13

195. (b)



$\therefore$ Wrong number = 47

$\therefore$ Correct number = 46

196. (a) The series is + 2^2, + 4^2, + 6^2, + 8^2, + 10^2,... Hence, there should be 161 in place of 181.

197. (e) The series is + 14, + 28, + 56, + 112, + 224, + 448,... Hence, there should be 450 in place of 496.

198. (e) The series is × 1 + 5.5, × 2 + 5.5, × 3 + 5.5, × 4 + 5.5, × 5+ 5.5, × 6 + 5.5, × 7 + 5.5.

i.e., 1 × 1 + 5.5 = 20.5, 20.5 × 2 + 5.5 = 46.5, 46.5 × 3+5.5= 145, 145 × 4 + 5.5 = 585.5,

585.5 × 5 + 5.5 = 2933, 2933× 6 + 5.5 = 17603.5,

Hence, there should be 20.5 in place of 21.5.

199. (d) The series is × $1+1^2$, × 2 + 2^2, × 3 + 3^2, × 4 + 4^2, × 5 + 5^2, ×6 + 6^2,...

i.e., 5×1+ 1^2= 6, 6 × 2 + 2^2= 16, 16 × 3 + 3^2= 57, 57 × 4 +4^2= 244, 244 × 5 + 5^2= 1245,

1245 × 6 + 6^2= 7506,

Hence, there should be 244 in place of 246.

200. (b) The series is + 11, + 33, + 99, + 297, + 891, + 2673,…

i.e., 2 + 11 = 13, 13+33 = 46, 46+99 = 145, 145+297 = 442,442 + 891 = 1333,

1333 + 2673= 4006,

Hence, there should be 442 in place of 452.

201. (a) The number should be 5555 in place of 5531.

-7^2, -9^2, -11^2, -13^2, -15^2, -17^2, …

202. (b) The number should be 21 in place of 26.

+1, +2, +4, +8, +16, +32

203. (d) The number should be 770 in place of 760.

×1 + 2, ×2 + 4, ×3 + 6, ×4 + 8, ×5 + 10, ×6 + 12, …

204. (d) The series is 0^2 + 4, 1^2 + 2, 3^2 + 0, 6^2 − 2, 10^2 − 4, 15^2 − 6, 21^2 − 8, …

Hence, 435 should be replaced with 433.

205. (a) The number should be 2 in place of 1.

÷3.5, ÷3, ÷2.5, ÷2, ÷1.5, ÷1, …

206. (d) The pattern of number series is as follows:

$7 \times 2 - 2 = 12$

$12 \times 4 - (2 + 6) = 48 - 8 = 40$
$40 \times 6 - (8 + 10) = 240 - 18 = 222$
$222 \times 8 - (18 + 14) = 1776 - 32 = 1744 \neq 1742$
$1744 \times 10 - (32 + 18) = 17440 - 50 = 17390$

207. (c) The pattern of number series is as follow:
$6 \times 7 + 7^2 = 42 + 49 = 91$
$91 \times 6 + 6^2 = 546 + 36 = 582 \neq 584$
$582 \times 5 + 5^2 = 2910 + 25 = 2935$
$2935 \times 4 + 4^2 = 11740 + 16 = 11756$
$11756 \times 3 + 3^2 = 35268 + 9 = 35277$

208. (e) The pattern of number series is as follows:
$9050 - 15^3 = 9050 - 3375 = 5675$
$5675 - 13^3 = 5675 - 2197 = 3478$
$3478 - 11^3 = 3478 - 1331 = 2147$
$2147 - 9^3 = 2147 - 729 = 1418$
$1418 - 7^3 = 1418 - 343 = 1075 \neq 1077$

209. (d) The pattern of number series is as follows:
$1^1 = 1$; $2^2 = 4$; $3^3 = 27 \neq 25$; $4^4 = 256$; $5^5 = 3125$;
$6^6 = 46656$; $7^7 = 823543$

210. (b) The pattern of number series is as follows:
$8424 \div 2 = 4212$
$4212 \div 2 = 2106$
$2106 \div 2 = 1053 \neq 1051$
$1053 \div 2 = 526.5$
$526.5 \div 2 = 263.25$
$263.25 \div 2 = 131.625$

211. (d)

3601	3602	1803	604	155	36	12
	+1 + 1	+2 + 2	+3 + 3	+4 + 4	−5 + 5	+6 + 6

154 is written in place of 155.

212. (b)

4	12	45	196	1005	6066	42511
	$\times 2 + (2)^2$	$\times 3 + (3)^2$	$\times 4 + (4)^2$	$\times 5 + (5)^2$	$\times 6 + (6)^2$	$\times 7 + (7)^2$

42 is written in place of 45.

213. (a)

2	6	12	20	30	42	56
	+4	+6	+8	−10	+12	−14

8 is written in place of 6.

214. (e)

32	16	24	60	210	945	5197.5
	×0.5	×1.5	×2.5	×3.5	×4.5	×5.5

65 is written in place of 60.

215. (d)

7	13	25	49	97	193	385
	+6	+12	+24	+48	−96	+192

194 is written in place of 193.

216. (b) The pattern of the number series is as given below:
$8 + 2 = 10$
$10 + 8 = (2 \times 3 + 2) = 18$
$18 + 26 = (3 \times 8 + 2) = 44$
$44 + 80 = (3 \times 26 + 2) = 124$
$124 + 242 = (3 \times 80 + 2) = 366$

217. (d) The pattern of the number series is as given below:
$13 + 1 \times 12 = 13 + 12 = 25$
$25 + 3 \times 12 = 25 + 36 = 61$
$61 + 5 \times 12 = 61 + 60 = 121$
$121 + 7 \times 12 = 121 + 84 = 205$
$205 + 9 \times 12 = 205 + 108 = 313$

218. (a) The pattern of the number series is as given below:

$$\frac{656}{2} + 24 = 328 + 24 = 352$$
$$\frac{352}{2} + 24 = 176 + 24 = 200$$
$$\frac{200}{2} + 24 = 100 + 24 = 124$$
$$\frac{124}{2} + 24 = 62 + 24 = 86$$
$$\frac{86}{2} + 24 = 43 + 24 = 67$$

219. (c) The pattern of the number series is as given below:
$454 + 18 = 472$
$472 - 27 = 445$
$445 + 18 = 463$
$463 - 27 = 436$
$436 + 18 = 454$

220. (b) The pattern of the number series is as given below:
$12 \times 4 - 30 = 48 - 30 = 18$
$18 \times 4 - 36 = 72 - 36 = 36$
$36 \times 4 - 42 = 144 - 42 = 102$
$102 \times 4 - 48 = 408 - 48 = 360$
$360 \times 4 - 54 = 1440 - 54 = 1386$

221. (c)

32	49	83	151	287	559	1103
	+17	+34	+68	+136	+272	+544

222. (b)

462	552	650	756	870	992	1122
	+90	+98	+106	+114	+122	+130

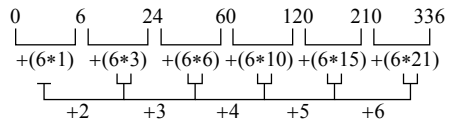
223. (d)

15	18	16	19	17	20	18

224. (a)

1050	420	168	67.2	26.88	10.752	4.3008
	÷2.5	÷2.5	÷2.5	÷2.5	÷2.5	÷2.5

225. (e)



226. (b) The given series is

$$\times\frac{1}{2}-2,\times\frac{1}{2}-2,\times\frac{1}{2}-2,\times\frac{1}{2}-2,\times\frac{1}{2}-2,\times\frac{1}{2}-2.$$

Correct answer is 118 instead of 120.

227. (d) The given series is

$\times 1 + 2, \times 2 + 3, \times 3 + 4, \times 4 + 5, \times 5 + 6, \times 6 + 7.$

Correct answer is 177 instead of 176.

228. (e) The given series is

$+(1)^2, +(3)^2, +(5)^2, +(7)^2, +(9)^2, +(11)^2$

Correct answer is 171 instead of 154.

229. (a) The given series is

$\times 1 + (1)^2, \times 2 + (2)^2, \times 3 + (3)^2, \times 4 + (4)^2, \times 5 + (5)^2, \times 6 + (6)^2$

Correct answer is 6 instead of 7.

230. (c) The given series is

$$\times\frac{1}{2}+\frac{1}{2},\times 1+1,\times 1.5+1.5,\times 2+2,\times 2.5+2.5,\times 3+3$$

Correct answer is 6.75 instead of 6.5.

231. (d) The series is $\times 3$.

232. (c) The series is +12, +15, +18, +21, +24, +27, ...

233. (a) The series is −200, −100, −50, −25, −12.5, −6.25, ...

234. (a) The series is −23, −19, −17, −13, −11, −7, ...
(Subtraction of prime numbers. Starting with 23 and following decreasing order)

235. (c) The series is $\times 1.5, \times 2, \times 1.5, \times 2, \times 1.5, \times 2$, ...

236. (a) Required ratio

$$=\frac{49\times 125}{100}:83\times\frac{175}{100}=35:83$$

237. (e) 80% of 125 = 100 and 1% of 125 = 1.25
Students getting less than 81% marks are not eligible to opt science stream in the next year. The number of such students is 3.

238. (b) Marks obtained

$$=48\times\frac{175}{100}+55\times\frac{120}{100}+94=84+66+94=244$$

239. (d) The series is $\times 7 - 1, \times 6 - 1, \times 5 - 1, \times 4 - 1, \times 3 - 1$.

240. (e) $+2^2, +4^2, +6^2, +8^2, +10^2$.

241. (a) The series is $\div 5$.

242. (b) + 3, + 6, + 12, + 24, + 48,…

243. (c) The series is $\times 1 + 1, \times 2 + 2, \times 3 + 3, \times 4 + 4, \times 5 + 5$

244. (e) The series is +7, +11, +13, +17, +19, +23
11 + 7 = 18, 18 + 11 = 29, 29 + 13 = 42,
42 + 17 = 59, 59 + 19 = 78, 78 + 23 = 101
The incorrect number is 80; 59 + 19 = 78

245. (d) The series is $(+7 \times 1), (+6 \times 2), (+5 \times 3), (+4 \times 4), (+3 \times 5), (+2 \times 6)$.
The incorrect number is 32; $(9 + 6) \times 2 = 15 \times 2 = 30$

246. (b) The series is ×11, ×7, ×5, ×3, ×1 and the incorrect number is 34650; $17325 \times 3 = 51975$

247. (a) The series is $+2^2, +3^2, +4^2, +5^2, 6^2, +7^2$
The incorrect number is 56; $32 + 5^2 = 32 + 25 = 57$

248. (c) The series is $\times 1 + 1, \times 2 + 2, \times 3 + 3, \times 4 + 4, \times 5 + 5, \times 6 + 6$.
The incorrect number is 38; $12 \times 3 + 3 = 36 + 3 = 39$

249. (e) The series is $\times 1 + 10, \times 2 - 10, \times 3 + 10, \times 4 - 10, \times 5 + 10$
$130 \times 4 - 10 = 520 - 10 = 510$

250. (a) The series is $\div 2 + 1$.

$$\frac{25}{2}+1=13.5$$

251. (b)

252. (e) The series is −3, −9, −27, −81, −243
264 − 243 = 21

253. (d) The series is
$+2^2, +4^2, +6^2, +8^2, +10^2, \ldots$
$302 + 6^2 = 302 + 36 = 338$

254. (c) The series is $\times 3 - 13$

255. (c) The series is $+2^2, +2^3, +2^4, +2^5, +2^6, +2^7$