1. Series

NUMBER SERIES

This chapter consists of questions in which series of numbers or alphabetical letters or combinations of both are given, which are generally called the terms of the series. These terms follow a certain pattern throughout the series. The candidate is required to study the given series, identify the pattern followed in the series and either complete the given series with the most suitable alternative or find the wrong term in the series.

Solved Examples

Direction : In each of the following questions, various terms of a number series are given with one term missing as shown by [?]. Choose the missing term out of the given alternatives

Ex.1 5, 7, 13, 23, ?

(1) 25   (2) 27   (3) 29   (4) 41

Sol. The difference between prime numbers is increasing. 7 is next prime to 5; 13 is second to next prime to 7; 23 is third to next to 13. Hence, next should be fourth to next prime to 23. Hence, required number is 41.
Hence the answer is (4)

Ex.2 4, 8, 16, 32, 64, ?, 256

(1) 128   (2) 98   (3) 86   (4) 106

Sol. The numbers are multiplied by 2 to get the next number : $64 \times 2 = 128$
Hence the answer is (1)

Ex.3 3, 6, 9, 12, 15, ?, 21

(1) 16   (2) 17   (3) 20   (4) 18

Sol. The difference between the numbers is 3. $15 + 3 = 18$
Hence the answer is (4)

Ex.4 17, 26, 37, 50, 65, ?, 101

(1) 82   (2) 75   (3) 78   (4) 90

Sol. (1) The series is $4^2 + 1$, $5^2 + 1$, $6^2 + 1$, $7^2 + 1$, $8^2 + 1$.
The next number is $9^2 + 1 = 82$
Hence the answer is (1)

ALPHABET SERIES

In this type of questions, a series of single, pairs or groups of letters or combinations of letters and numerals is given. The terms of the series form a certain pattern as regards the position of the letters in the English alphabet. The candidate is required to decipher this pattern and accordingly find the missing term or the wrong term in the given series.

Solved Examples

Direction : In each of the following questions, various terms of a letter series are given with one term missing as shown by [?]. Choose the missing term out of the given alternatives

Ex.5 B, C, A, D, Z, E, ?, F, X, G

(1) U   (2) Y   (3) W   (4) V

Sol. The sequence consists of two series B, A, Z, Y, X and C, D, E, F, G. The missing letter is Y.
Hence the answer is (2)

Ex.6 EZ, DX, CV, ?, AR, ZP

(1) CS   (2) AM   (3) BT   (4) TG

Sol. First and second letters follow a sequence of – 1 and – 2 respectively.
Hence the answer is (3)

Ex.7 DIE, XCY, RWS, ?

(1) LQN   (2) QMP   (3) LMS   (4) LQM

Sol. First, second and third letters of each group follow a sequence of – 6 series.
Hence the answer is (4)

ALPHA - NUMERIC SERIES

This type of questions is just a jumbled form of questions of Type I and Type II, which you have just read. Here, the terms of the given series are a combination of letters and numerals, which move according to a set pattern.

Solved Examples

Direction : In each of the following questions, various terms of an alphanumerical series are given with one or more terms missing as shown by (?). Choose the missing terms out of the given alternatives.

Ex.8 2Z5, 7Y7, 14X9, 23W11, 34V13,?

    (1) 27U24   (2) 45U15   (3) 47U15   (4) 45V14

Sol. First numeral - 2, 7, 14, 23, 34 (+ 5, + 7, + 9, + 11..)

    Second letter - ZYXWV (decreases by 1 each time)

    Third numeral - 5,7,9,11,13 (increases by 2 each time)

    So the missing term is 47 U 15

    Hence the answer is (3)

Ex.9 W-144 , U-121, S-100, Q-81,?

    (1) P-64   (2) U-122   (3) O-64   (4) V-128

Sol. First letter- decreases by 2 each time

    Second numeral- square of 12,11,10,9,8..

    So the missing term is O -64

    Hence the answer is (3)

CONTINUOUS PATTERN

This type of questions usually consists of a series of small letters which follow a certain pattern. However, some letters are missing from the series. These missing letters are then given in a proper sequence as one of the alternatives. The candidate is required to choose this alternative as the answer.

Solved Examples

Direction : In each of the following letter series ,some of the letters are missing which are given in that order as one the alternatives below it . Choose the correct alternatives.

Ex.10 ab_ _ baa_ _ ab_

    (1) aaaaa   (2) aabaa   (3) caabab   (4) baabb

Sol. Here series aba is repeated

    Hence the answer is (2)

Ex.11 ab_aa_bbb_aaa_bbba

    (1) abba   (2) baab   (3) aabb   (4) abab

Sol. The series is abb / aaabbb / aaaabbbb / a. Thus the letter are repeated twice, then thrice , then four times and so on .

    Hence the answer is (2)

Ex.12 _bc_ca_aba_c_ca

    (1) abcbb   (2) bbbcc   (3) bacba   (4)abbcc

Sol. The series is abc / bca / cab / abc / bca. Thus the letter change in cyclic order.

    Hence the answer is (1).

EXERCISE

Directions (Q1 to Q15) : Find the missing terms (?).

1. 2, 8, 18, 32, ?

   (1) 62   (2) 60   (3) 50   (4) 46

2. 14, 316, 536, 764, ?

   (1) 981   (2) 1048   (3) 8110   (4) 9100

3. 8, 11, 15, 22, 33, 51, ?, 127, 203

   (1) 80   (2) 53   (3) 58   (4) 69

4. 1, 2, 9, 4, 25, 6, ?

   (1) 51   (2) 49   (3) 50   (4) 47

5. 8, 24, 16, ?, 7, 14, 6, 18, 12, 5, 5, 10

   (1) 14   (2) 10   (3) 7   (4) 5

6. 2, 12, 36, 80, 150, ?

   (1) 194   (2) 210   (3) 252   (4) 258

7. 2, 5, 10, 17, ?, 37

   (1) 27   (2) 24   (3) 26   (4) 28

8. 2, 10, 40, 120, ?

   (1) 240   (2) 360   (3) 470   (4) 210

9. 1, 2, 3, 10, ?, 9802

   (1) 199   (2) 999   (3) 99   (4) 298

10. 8, 15, 28, 53, ?, 199.

    (1) 100   (2) 101   (3) 102   (4) 103

11. JXG, HTJ, FPN, ?, BHY

    (1) EKS   (2) ELS   (3) DRL   (4) DLS

12. B2E, D5H, F12K, H27N, ?

    (1) J58Q   (2) J56Q   (3) J57Q   (4) J56P

13. MTH, QRK, UPN, YNQ, ?

    (1) CKT   (2) CLT   (3) ELT   (4) EKT

14. B3M, E7J, H15G, K31D, ?

    (1) N65A   (2) O63A   (3) N63A   (4) N63Z

15. 5X9, 8U12, 11R15, 14O18, ?

    (1) 17L21   (2) 17K21   (3) 17M21   (4) 17L23

Direction (Q.16 to Q.21) : Find the wrong terms (?).

16. 9, 11, 15, 23, 39, 70, 135

    (1) 23   (2) 39   (3) 70   (4) 135

17. 3, 9, 36, 72, 216, 864, 1728, 3468

    (1) 3468   (2) 1728   (3) 864   (4) 216

18. 1, 2, 6, 15, 31, 56, 91
    (1) 31   (2) 15   (3) 56   (4) 91

19. 2, 5, 10, 17, 26, 37, 50, 64
    (1) 5   (2) 26   (3) 64   (4) 17

20. DKY, FJW, HIT, JHS, LGQ
    (1) FJW   (2) LGQ   (3) JHJ   (4) HIT

21. DVG, FSI, HPK, JNM, LJO
    (1) DVG   (2) JNM   (3) HPK   (4) LJO

Directions (Q.22 & Q.23) : In each of the following questions, a number series is given. After series, below it in the next line, a number is given followed by (P), (Q), (R), (S) and (T). You have to complete the series starting with the number given following the sequence of the given series. Then answer the question given below it.

22. 2   3   8   27
    5   (P)   (Q)   (R)   (S)   (T)
    Which of the following numbers will come in place of (T) ?
    (1) 184   (2) 6   (3) 925   (4) 45

23. 5   18   48   112
    7   (P)   (Q)   (R)   (S)   (T)
    Which number will come in place of (S) ?
    (1) 172   (2) 276   (3) 270   (4) 376

Directions (Q.24 to Q.30) : Which sequence of letter when placed at the blanks one after the other will complete the given letter series ?

24. _ a a b b _ a _ a b _ b
    (1) b b a a   (2) b a b a   (3) b a ab   (4) a b a b

25. a _ _ b _ a _ a b _ a a
    (1) a b a a b   (2) b b a b a   (3) b b a b b   (4) b a a b a

26. a_bbc_aab_cca_bbcc
    (1) bacb   (2) acba   (3) abba   (4) caba

27. _ b c _ _ b b _ a a b c
    (1) acac   (2) babc   (3) abab   (4) aacc

28. _ b c c _ a c _ a a b b _ a b _ c c
    (1) aabca   (2) abaca   (3) bacab   (4) bcaca

29. _ stt _ tt _ tts _
    (1) tsts   (2) ttst   (3) sstt   (4) tsst

30. _ op _ mo _ n _ _ pnmop _
    (1) mnpmon   (2) mpnmcp   (3) mnompn   (4) mnpomn

EXERCISE — ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	3	4	1	2	3	3	3	1	3	3	4	1	2	3	1	3	1	4	3	4

Que.	21	22	23	24	25	26	27	28	29	30
Ans.	2	3	2	4	1	2	1	3	4	1