13.) Number Series

Series

1) Number Series — 16, 18, 20, 22, 24, ...

2) Alphabetic Series — B, D, F, H, J, ...

3) Numeric Alpha Series (combination of number & alphabets) — 4D, 11K, 13M, ...

Eg:
= find the wrong number in the series / odd one

4, 9, 16, 25, 37

Ans = 37.

$2^2=4$, $3^2=9$, $4^2=16$, $5^2=25$, $6^2=36$.

Eg:
=

961, 1024, 1089, ____, 1225

Ans = 1156

$31^2=961$, $32^2=1024$, $33^2=1089$, $34^2=1156$, $35^2=1225$.

1) Decreasing order series

360, 180, 90, 45, 22.5

÷2 ÷2 ÷2 ÷2

2) Increasing order series

2, 6, 14, 30, 62

×2+2 ×2+2 ×2+2 ×2+2

3) Multiplication series

3, 3, 6, 18, 72, 360

×1 ×2 ×3 ×4 ×5

4) Prime Numbers

31, 37, 41, 43, 47

6, 15, 35, 77, 143

2×3 3×5 5×7 7×11 11×13

21, 24, 29, 36, 47, 60

3 5 7 11 13

5) Square / cube number series

1, 4, 9, 16, 25, 36

1^2 2^2 3^2 4^2 5^2 6^2

729, 1000, 1331, 1728, 2197

9^3 10^3 11^3 12^3 13^3

Series with combinations

6) Miscellaneous Series

Alternative Series

1, 10, 2, 9, 3, 8, 4, 7

96, 15, 71, 8, 37, 10, 41, 5

9+6 7+1 3+7 4+1

2, 4, 6, 10, 16, 26, 42 (Fibonacci Series)

2+4 4+6 6+10 16+10 26+16

Alphabetic Series

1	2	3	4	5	6	7	8	9			24	25	26
A	B	C	D	E	F	G	H	I	. . . . .		X	Y	Z

26 Alphabets

13.2 : Number Series Problems

Q.1) 30, 34, 43, 59, 84, 120, 169

4 9 16 25 36 49

2^2 3^2 4^2 5^2 6^2 7^2

Q.2) 9, 18, 54, 108, 324, 648

×2 ×3 ×2 ×3 ×2

Q.3) 43, 38, 31, 22, 11, −2, −17

−5 −7 −9 −11 −13 −15

Q.4) 17, 78, 26, 89, 35, 80

+9 +9

−9 −9

Q.5) 221, 192, 165, 140, 117, 96

−29 −27 −25 −23 −21

Q.6) 3240, 540, 108, 27, 9, 4.5

÷6 ÷5 ÷4 ÷3 ÷2

Q.7) 3.25, 6.5, 19.5, 78, 390, 2340

×2 ×3 ×4 ×5 ×6

Q.8) 14, 30, 52, 80, 114, 154

16 22 28 34 40

6 6 6 6

Q.9) a) Find the odd one in the following series

172, 155, 121, (71), 2, −83

−17 −34 −50 −69 −85

17×1 17×2 17×3 17×4 17×5

Correct no. should be 70.

9) 4.2, 6.2, 18.6, (20.4), 61.8, 63.8

+2 ×3 +2 ×3 +2

Correct no. should be 20.6.

10) G, K, O, S, W

7 11 15 19 23

4 4 4 4

11) DE, GH, JK, MN, PQ

45 78 1011 1617

3 3 3 3 3

12) W23, T20, Q17, N14

13) PK, SH, VB, YB

1611 198 225 252

14) 3M, 5M, 7J, 9S, 11N

2 2 2 2

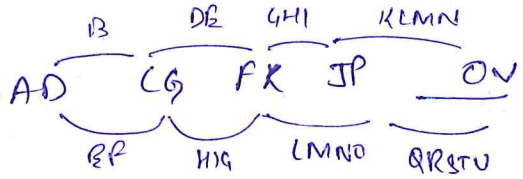
1 1 1 1 1

March May July September November

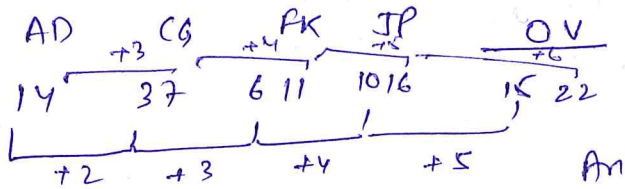
13.3 Number series gate previous year questions

Q.1) Given the sequence of terms AD, CG, FK, JP, the next term is

(a) OV (b) OW (c) PV (d) PW (GATE 2012)



OR

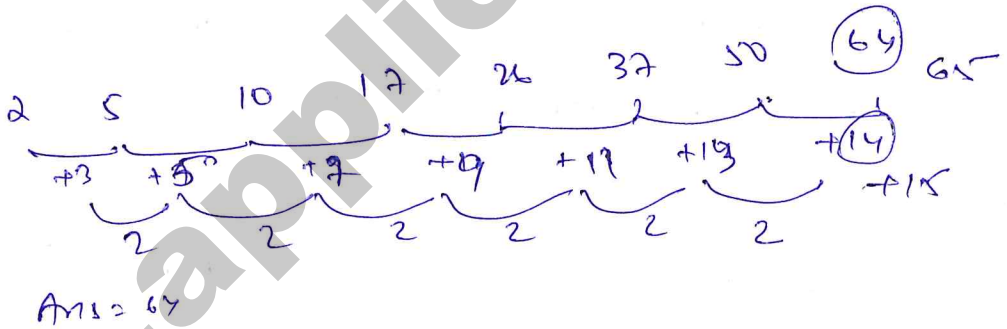


Ans = OV.

Q.2) Which number does not belong in the series below? (GATE 2014)

2, 5, 10, 17, 26, 37, 50, 64

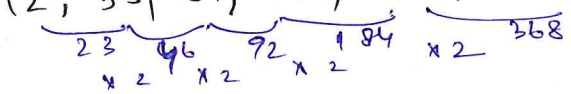
(a) 17 (b) 37 (c) 64 (d) 26



Ans = 64

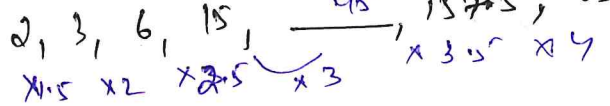
Q.3) What is the next number in the series (GATE 2014)

12, 35, 81, 173, 357, 725 ?



Q.4) Fill in the missing number in the series. (GATE 2014)

2, 3, 6, 15, 45, 157.5, 630



Q.5) The next number in the series (GATE 2014)

81, 54, 36, 24, 16

÷3×2 ÷3×2 ÷3×2 ÷3×2

Q.6) Find the odd one from the following group: (GATE 2014)

WEKO (31), 23 5 11 15, 8 6 4

IQWA (27), 9 17 23 1, 8 6 4

FNTX, 6 14 20 24, 8 6 4

NVBD (28 30) ⇒ ODD, 14 22 2 4, 8 6 2

Q.7) Find the odd one in the following group (GATE 2014)

QWZB (28), 17 23 26 2, 6 3 2

BHKM, 2 6 11 13, 6 3 2

WCGJ (23) ⇒ ODD, 23 3 7 11, 6 4 4

MSVX, 13 19 22 24, 6 3 2

Q.8) Find the next term in the sequence (GATE 2014)

7G, 11K, 13M, 17Q ?

+4 +2 +4

Q.9) Find the missing sequence (GATE 2015)

A, CD, GHI, MNOP, UVWXY

B EF JKL QRST

(a) LMN (b) MNO (c) MNOP (d) NOPQ

Q.10) Pick the odd one out of the following (GATE 2016)

13, 23, 33, 43, 53

↓ Non Prime

(a) 23 (b) 33 (c) 43 (d) 53

Q.11) The number that least fits this set: (GATE 2014)

324, 441, 97, 64 in

324 → 18^2, 441 → 21^2, 97 → odd, 64 → 8^2

(a) 324, (b) 441 (c) 97 (d) 64

Q.12) Pick the odd one from the following options: (GATE 2016)

(a) CADBE (b) JHKIL (c) XVYWZ (d) ONPMQ

C A D B E
3 1 4 2 5
-2 +3 -2 +3

J H K I L
10 8 11 9 12
-2 +3 -2 +3

X V Y W Z
24 22 25 23 26
-2 +3 -2 +3

O N P M Q
15 14 16 13 17
-1 +2

=> ODD.

Q.13) Find the missing sequence (GATE 2016)

B, FH, LNP, TVXZ

2 6 8 12 14 16 20 22 24 26
+2 +2 +2 +2 +2
4 4 4

Q.14) Find the missing group of letters (GATE 2018)

BC, FGH, LMNO, TUVWX

2 3 6 7 8 12 13 14 15 20 21 22 23 24
3 4 5

Q.15) Find the next term in the sequence (GATE 2018)

13M, 17P, 19S, 23W ?

+4 +2 +4