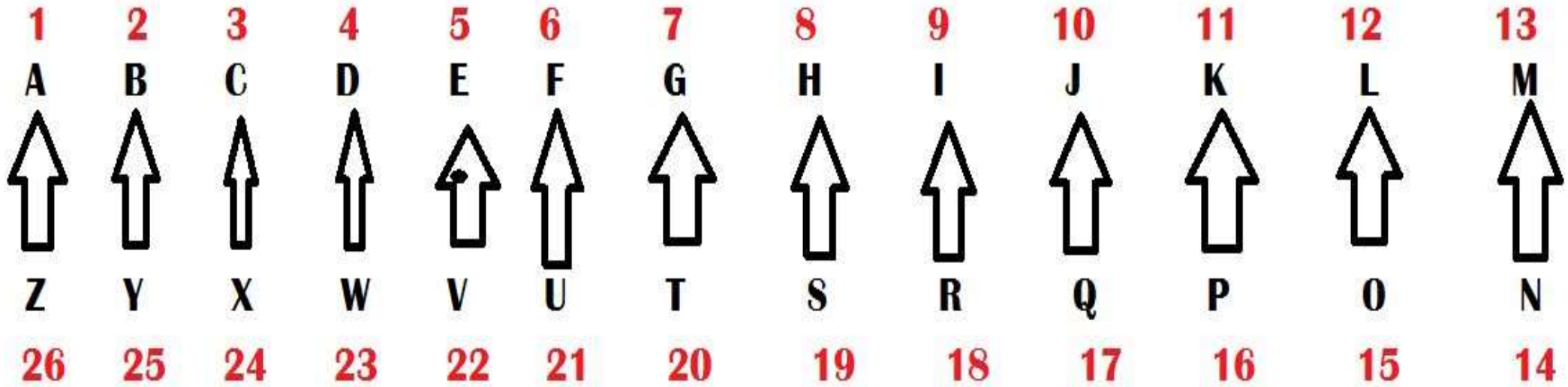

SEQUENCE
&
SERIES

DIFFERENT TYPES OF SERIES

Type	Pattern Example	Explanation
Arithmetic Series	5, 10, 15, 20, ?	Add same number each time (+5)
Geometric Series	2, 4, 8, 16, ?	Multiply by same number each time (×2)
Fibonacci Series	0, 1, 1, 2, 3, 5, 8, ?	Sum of previous two numbers
Square/Cube Series	1, 4, 9, 16, 25, ?	Squares: 1^2, 2^2, 3^2…
Alternate Patterns	2, 4, 6, 9, 11, 13, ?	Different logic for odd/even positions
Difference Series	3, 8, 15, 24, 35, ?	Differences: +5, +7, +9, +11…
Mixed Operations	2, 5, 10, 17, 26, ?	Add 3, 5, 7, 9... (increasing additions)
Letter Series	A, C, E, G, ?	Skip one letter

FORWARD PLACE VALUE- LEFT TO RIGHT



REVERSED PLACE VALUE - RIGHT TO LEFT

1. 144, 196, 256, 324, 400, 484, _____

(1) 529 (2) 576 (3) 625 (4) 784 (5) 676

2. 27, 125, 343, 729, _____

(1) 1000 (2) 1728 (3) 121 (4) 1031 (5) 1331

3. 11, 22, 34, 47, 61, 76, _____

(1) 82 (2) 86 (3) 94 (4) 92 (5) 88

4. 11, 22, 35, 52, 71, 94, _____

(1) 123 (2) 115 (3) 129 (4) 117 (5) 131

5. 11, 12, 16, 25, 41, 66, _____

(1) 92 (2) 94 (3) 106 (4) 108 (5) 102

6. 11, 12, 20, 47, 111, _____

(1) 222 (2) 214 (3) 236 (4) 244 (5) 226

7. 1, 2, 6, 24, 120, _____

(1) 680 (2) 720 (3) 780 (4) 560 (5) 640

8. 1, 2, 6, 30, 210, _____

(1) 1890 (2) 1640 (3) 1820 (4) 2400 (5) 2310

9. 36, 18, 18, 27, 54, 135, _____

(1) 415 (2) 385 (3) 365 (4) 405 (5) 425

10. 1, 2, 6, 21, 88, _____

(1) 425 (2) 445 (3) 385 (4) 405 (5) 545

11. BV, CU, ES, HP, LL, QG, _____

(1) VB (2) WB (3) WA (4) VC (5) WC

12. PLD, QJG, RHJ, SFM, TDP, _____

(1) UCR (2) UDT (3) UBR (4) UBS (5) UBU

13. BRDY, CPGU, DNJQ, ELMM, _____

(1) FKQJ (2) FHRI (3) FJPI (4) FRJH (5) FIQJ

Arithmetic progression/series

Concept	Description / Formula	Example
Definition	A sequence where the difference between consecutive terms is constant	3, 7, 11, 15, …
First Term (a)	The first number in the sequence	a = 3
Common Difference (d)	The fixed difference between terms	d = 7 – 3 = 4
General Term (T_n)	$T_n = a + (n-1)d$	$T_5 = 3 + (5 – 1)\times 4 = 19$
Sum of n Terms (S_n)	$S_n = n/2[2a + (n-1)d]$ or $S_n = n/2$(first term + last term)	$S_5 = 5/2 \times (2\times 3 + 4\times 4) = 55$

Geometric progression/series

Concept	Description / Formula	Example
Definition	A sequence where each term is obtained by **multiplying** the previous term by a **fixed number (common ratio)**	2, 4, 8, 16, …
First Term (a)	The first number in the sequence	a = 2
Common Ratio (r)	The factor between consecutive terms	r = 4 ÷ 2 = 2
General Term (T_n)	$T_n = a \cdot r^{n-1}$	$T_4 = 2 \times 2^3 = 16$
Sum of First n Terms (S_n)	$S_n = \frac{a(r^n-1)}{r-1}$ (if $r \neq 1$)	$S_4 = (2(2^4 - 1))/(2 - 1) = (2\times15)/1 = 30$

1. What is the 15th term of the AP: 7, 10, 13, ...?

- A) 49
- B) 51
- C) 51
- D) 52

2. The 5th term of an AP is 22 and the 11th term is 40. What is the first term?

- A) 10
- B) 12
- C) 8
- D) 6

3. If the sum of the first 10 terms of an AP is 155, and the first term is 5, what is the common difference?

- A) 3
- B) 2
- C) 1.5
- D) 4

5. Find the 5th term of the GP: 2, 6, 18, ...

- A) 162
- B) 54
- C) 486
- D) 108

6. In a GP, the first term is 3 and the common ratio is 2. Find the sum of the first 4 terms.

- A) 45
- B) 48
- C) 30
- D) 42