

Chapter: 6

- 1) Sequence is also called _____
a- Series b- Random Set c- Geometric Series d- Progression.
- 2) Domain of a Sequence is _____
a- \mathbb{R} b- \mathbb{Z} c- \mathbb{Q} d- \mathbb{N} .
- 3) nth term a_n is called _____ term.
a- Initial b- Leading c- Middle d- General.
- 4) An infinite Sequence has _____ last term/terms.
 a- No b- One c- Two d- Infinite.
- 5) If $a_n = 2n - 3$ then $a_9 =$ _____
a- 9 b- 18 c- 15 d- 6
- 6) The next term of 7, 9, 12, 16, is _____
a- 19 b- 18 c- 20 d- 21
- 7) Sequence with Common difference between consecutive terms is _____
 a- A.P. b- G.P. c- H.P. d- Progression.
- 8) General term of A.P. is $a_n =$ _____
a- $a_1 + (n+1)d$ b- $a_1 + (n-1)d$ c- $a_1 + (n)d$ d- $a_1 + (n-2)d$.
- 9) Common difference in A.P. is $d =$ _____
a- $a_n - a_{n+1}$ b- $a_{n+1} - a_{n+2}$ c- $a_n - a_{n-1}$ d- $a_{n-1} - a_n$
- 10) Difference between two consecutive terms of A.P. is called _____
a- Common ratio b- Common difference c- Common term d- None.
- 11) $\{1, 5, 9, 13, 17, 21, \dots\}$ is a _____ Sequence.
 a- Arithmetic b- Geometric c- Harmonic d- Arithogeometric.
- 12) If $a_{n-2} = 3n - 11$ then $a_n =$ _____
a- $3n - 13$ b- $3n - 17$ c- $3n - 5$ d- $3n - 7$
- 13) Arithmetic mean between a, b is _____
a- $a + b$ b- $\frac{a+b}{2}$ c- $2ab$ d- $\frac{2}{a+b}$
- 14) Middle term of three consecutive terms of A.P. is _____ between extreme values.
 a- AM b- GM c- HM d- None.
- 15) nth AM between a and b is _____
a- $\frac{a+b}{2}$ b- $\frac{a+nb}{n+1}$ c- $\frac{na+b}{n+1}$ d- $\frac{na+b}{n}$
- 16) AM between $3\sqrt{5}$ and $5\sqrt{5}$ is _____
a- $8\sqrt{5}$ b- $3\sqrt{5}$ c- $5\sqrt{5}$ d- $4\sqrt{5}$
- 17) $\frac{a^n + b^n}{a^{n-1} + b^{n-1}}$ is AM between a and b if _____
 a- $n = 1$ b- $n = \frac{1}{2}$ c- $n = -\frac{1}{2}$ d- $n = -1$

- 18) Sum of n terms of A.P. is $S_n =$ _____
 a- $\frac{n}{2}[2a+nd]$ \checkmark b- $\frac{n}{2}[2a+(n-1)d]$ c- $\frac{n}{2}[2a+(n+1)d]$ d- $\frac{n}{2}[2a+(2n-1)d]$
- 19) The three numbers in A.P. whose sum is 24 and product 440 are _____
 a- 6, 8, 10 \checkmark b- 5, 8, 11 c- 6, 10, 14 d- 2, 10, 12
- 20) The sequence in which ratio between two consecutive terms is same called _____
 a- A.P. \checkmark b- G.P. c- H.P. d- None.
- 21) The common ratio in G.P. is defined as _____ for $n \in \mathbb{N}$ for $n > 1$.
 a- $\frac{a_{n+1}}{a_{n+2}}$ b- $\frac{a_n}{a_{n+1}}$ \checkmark c- $\frac{a_n}{a_{n-1}}$ d- $\frac{a_{n-1}}{a_n}$
- 22) _____ cannot be the term of G.P.
 a- a_1 b- a_2 \checkmark c- 0 d- 1
- 23) The n th term of G.P. is $a_n =$ _____
 a- $a_1 r^n$ b- $a_1 r^{n-2}$ \checkmark c- $a_1 r^{n-1}$ d- $a_1 r^{n+1}$
- 24) The 5th term in G.P. = 3, 6, 12, ... is _____
 a- 15 b- 18 \checkmark c- 48 d- 3
- 25) Reciprocal of G.P. is _____
 a- A.P. \checkmark b- G.P. c- H.P. d- None
- 26) G.M. between a and b is defined by _____
 a- $\frac{a+b}{2}$ b- $2ab$ c- ab \checkmark d- $\pm \sqrt{ab}$
- 27) n th GM between " a " and " b " is _____
 a- $a \left(\frac{b}{a}\right)^{\frac{n}{n+2}}$ \checkmark b- $a \left(\frac{b}{a}\right)^{\frac{n}{n+1}}$ c- $a \left(\frac{a}{b}\right)^{\frac{n}{n+1}}$ d- $a \left(\frac{a}{b}\right)^{\frac{n}{n+2}}$
- 28) GM between 4 and 16 is _____
 a- ± 4 b- ± 16 \checkmark c- ± 8 d- ± 2
- 29) GM between $2a$ and $2b$ is _____
 a- $\pm ab$ b- $\pm \sqrt{ab}$ c- $\pm 2ab$ \checkmark d- $\pm 2\sqrt{ab}$
- 30) If A is AM and G is GM between " a " and " b " then _____
 a- $A < G$ b- $G > A$ \checkmark c- $G < A$ d- $A - G < 0$
- 31) If $\frac{a^n + b^n}{a^{n-1} + b^{n-1}}$ is GM between " a " and " b " then $n =$ _____
 a- 1 b- -1 \checkmark c- $\frac{1}{2}$ d- $-\frac{1}{2}$
- 32) Sum of n terms of G.P. is $S_n =$ _____ for $|r| < 1$
 a- $\frac{a_1(1-r^n)}{1-r}$ b- $\frac{a_1(1-r^n)}{1-r}$ \checkmark c- $\frac{a_1(1-r^n)}{1-r}$ d- $\frac{a_1(1-r^{n-1})}{1-r}$
- 33) Sum of n terms of G.P. is $S_n =$ _____ for $|r| > 1$
 a- $\frac{a_1(1-r^n)}{1-r}$ b- $\frac{a_1(r^n-1)}{1-r}$ \checkmark c- $\frac{a_1(r^n-1)}{r-1}$ d- $\frac{a_1(r^n-1)}{r-1}$

34) A Geometric Series Converges if _____

- a- $|r| > 1$
- b- $|r| = 1$
- c- $|r| < 1$ ✓
- d- $|r| \leq 1$

35) A Geometric Series Converges if _____

- a- $-1 > r > 1$
- b- $r = 1$
- c- $-1 < r < 1$ ✓
- d- $-1 \leq r \leq 1$

36) S_n Converges to _____ if $n \rightarrow \infty$ for $|r| < 1$.

- a- $\frac{a_1(1-r^n)}{1-r}$
- b- $\frac{a_1(r^n-1)}{r-1}$
- c- $\frac{a_1}{r-1}$ ✓
- d- $\frac{a_1}{1-r}$

37) $S_n = \frac{a_1(1-r^n)}{1-r}$ for $r \neq -1$ in G.P. if n is odd +ve integer.

- a- $\sqrt{a_1}$
- b- $a_1 r$
- c- $a_1 r^n$
- d- $\frac{a_1(r^n-1)}{r-1}$ ✓

38) $S_n = \frac{a_1(1-r^n)}{1-r}$ for $r = -1$ in G.P. if n is Even +ve integer.

- a- $\sqrt{0}$ ✓
- b- a_1
- c- $a_1 r$
- d- $a_1 r^{n-1}$

39) $1 + 2x + 4x^2 + 8x^3 + \dots$ Converges if _____

- a- $|x| < 1$
- b- $|x| < -1$
- c- $|x| < \frac{1}{2}$ ✓
- d- $|x| < 2$

40) Reciprocal of A.P. is called _____

- a- A.P.
- b- G.P.
- c- H.M.
- d- H.P. ✓

41) $1 > \frac{1}{3} > \frac{1}{5} > \frac{1}{7} > \dots$ is _____

- a- AP
- b- \sqrt{b} HP ✓
- c- GP
- d- None.

42) The n th term of HP is $a_n =$ _____

- a- $\frac{1}{a_1 r^n}$
- b- $\frac{1}{a_1 + (n-1)d}$ ✓
- c- $a_1 + \frac{1}{(n-1)d}$
- d- $\frac{a_1}{r^n}$

43) HM between a and b is $H =$ _____

- a- $\frac{a+b}{2}$
- b- $\pm \sqrt{ab}$
- c- $\frac{2ab}{a+b}$ ✓
- d- $\frac{a+b}{2ab}$

44) n th HM between a & b is _____

- a- $\frac{a(n+1)}{b+n a}$
- b- $\frac{ab(n+1)}{b+n a}$ ✓
- c- $\frac{ab(n+1)}{a+b n}$
- d- $\frac{b(n+1)}{b+n a}$

45) $G^2 = \frac{a^2 b^2}{a+b}$ for $a, b \in \mathbb{R}$ or \mathbb{C} .

- a- A
- b- H
- c- \sqrt{c} AH ✓
- d- AH^2

46) If $A, H, G > 0$ then _____

- a- $A > H > G$
- b- $A < H < G$
- c- $A < G < H$
- d- $A > G > H$ ✓

47) If $A, H, G < 0$ then _____

- a- $A < H < G$
- b- $A < G < H$ ✓
- c- $A > G > H$
- d- $A > H > G$

48) If $\frac{a^{n+1} + b^{n+1}}{a^n + b^n}$ is HM between a and b if $n =$ _____

- a- 1
- b- -1
- c- $\frac{1}{2}$
- d- $-\frac{1}{2}$ ✓

49) $1 + 2 + 3 + \dots + n = \sum n =$ _____

- a- $\frac{n(n+1)}{2}$ ✓
- b- $2n$
- c- $3n$
- d- $4n$

50) $1 + 1 + 1 + \dots + 1 = \sum 1 =$ _____

- a- 1
- b- n ✓
- c- $2n$
- d- $\frac{n(n+1)}{2}$

51) $1^2 + 2^2 + 3^2 + \dots + n^2 = \sum n^2 =$ _____

- a- n
- b- $\frac{n(n+1)}{2}$
- c- $\frac{n^2(n+1)^2}{4}$ ✓
- d- $\frac{n(n+1)(2n+1)}{6}$

52) $1^3 + 2^3 + 3^3 + \dots + n^3 = \sum n^3 =$ _____

- a- n
- b- $\frac{n(n+1)}{2}$
- c- $\frac{n^2(n+1)^2}{4}$
- d- $\frac{n(n+1)(n+2)(n+3)}{24}$ ✓