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MATHEMATICS TEST - CHAPTER 4: SEQUENCES AND SERIES

Name:		Roll No.		Section:

Total Time: 3:20 Hour
Time Allowed: 200 Minutes

Total Marks: 200

PAPER OBJECTIVE
SECTION-A (MARKS 200)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. A sequence is a function whose domain is the set of:	positive integers	complex numbers	negative integers	real numbers	●○○○
2. An ordered list of numbers is called a:	matrix	series only	polynomial	sequence	○○○●
3. The sum of the terms of a sequence is called a:	function	series	polynomial	set	○●○○
4. The symbol a_n denotes the:	common difference	first term	nth term of a sequence	sum of n terms	○○●○
5. A sequence which has a last term is called a:	finite sequence	infinite sequence	constant sequence	null sequence	●○○○
6. A sequence with no last term, such as 5, 10, 15, 20, ..., is called an:	empty sequence	finite sequence	infinite sequence	null sequence	○○●○
7. The list of positive odd numbers less than 100 contains how many terms?	49	50	100	99	○●○○
8. Which of the following is a way to display a sequence?	Giving a formula for the general term	Giving only the sum	Giving only the last term	Giving only the number of terms	●○○○
9. The general term of the sequence of positive odd numbers 1, 3, 5, 7, ... is:	$2n - 1$	$n + 2$	$2n + 1$	n^2	●○○○
10. The general term of the sequence 1, 4, 9, 16, 25, ... is:	$n + 3$	2^n	$2n$	n^2	○○○●
11. The general term of the sequence √1, √2, √3, √4, ... is:	$\sqrt{n}$	$2n$	$n/2$	n^2	●○○○
12. The general term of the sequence 2, 4, 8, 16, ... is:	n^2	$n + 2$	$2n$	2^n	○○○●
13. The general term of the sequence −1, 2, −4, 8, −16, ... is:	$(-1)^n 2^n$	2^{n-1}	$(-1)^n 2^{n-1}$	$(-1)^{n+1} 2^n$	○○●○
14. The general term of the sequence 3, 9, 27, 81, 243, ... is:	$n + 2$	3^n	$3n$	n^3	○●○○

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Questions	A	B	C	D	A B C D
15. The general term of the sequence 1·2, 2·3, 3·4, 4·5, ... is:	n^2	$n(n + 1)$	$n(n - 1)$	$2n$	○●○○
16. The factor $(-1)^n$ in a general term causes the signs of the terms to:	become zero	remain positive	alternate between positive and negative	remain negative	○○●○
17. If $a_n = 3n + 1$, then a_{10} is:	31	30	33	13	●○○○
18. If $a_n = 4n - 3$, then a_8 is:	35	29	32	25	○●○○
19. If $a_n = n^2 - 2n$, then a_5 is:	10	15	5	25	○●○○
20. If $a_n = (-1)^n(n + 3)$, then a_3 is:	-3	-6	3	6	○●○○
21. A sequence in which each term, after the first, is obtained by adding a fixed number to the preceding term is called an:	arithmetic sequence	constant sequence	geometric sequence	harmonic sequence	●○○○
22. The fixed number added in an arithmetic sequence is called the:	common difference	mean	common ratio	first term	●○○○
23. The common difference of the arithmetic sequence 2, 5, 8, 11, ... is:	5	2	3	-3	○○●○
24. The next four terms of the arithmetic sequence 33, 39, 45, ... are:	52, 59, 66, 73	51, 56, 61, 66	51, 57, 63, 69	50, 55, 60, 65	○○●○
25. The nth term of an arithmetic sequence with first term a_1 and common difference d is:	$a_1 d^{n-1}$	$a_1 + (n - 1)d$	$a_1 + nd$	$a_1 + (n + 1)d$	○●○○
26. A race car starts at 85 mph and increases its speed by 4.5 mph each second. The book's speed after 15 seconds is:	157 mph	85 mph	148 mph	152.5 mph	○○○●
27. In an arithmetic sequence, $a_3 = 8$ and $a_{16} = 47$. The common difference d is:	5	4	3	2	○○●○
28. In an arithmetic sequence, $a_3 = 8$ and $a_{16} = 47$. The first term a_1 is:	5	1	3	2	○○○●
29. The 15th term of the arithmetic sequence with $a_1 = 2$ and $d = 3$ is:	45	47	42	44	○○○●
30. The 11th term of the arithmetic sequence 0.07, 0.12, 0.17, ... is:	0.67	0.57	0.52	0.62	○●○○
31. In an arithmetic sequence $a_3 = 14$ and $a_9 = -1$. The common difference is:	-3	3	2.5	-2.5	○○○●

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Questions	A	B	C	D	A B C D
32. In an arithmetic sequence a_5 = 19 and a_{11} = 43. The first term is:	3	5	7	4	●○○○
33. In an arithmetic sequence a_5 = 19 and a_{11} = 43. The common difference is:	6	3	4	5	○○●○
34. The 20th term of the arithmetic sequence with first term 3 and common difference 4 is:	77	80	83	79	○○○●
35. The arithmetic mean between two numbers a and b is:	√(ab)	a − b	2ab/(a + b)	(a + b)/2	○○○●
36. The arithmetic mean between 6 and 18 is:	9	10	24	12	○○○●
37. The four arithmetic means between 19 and 54 are:	26, 33, 40, 47	27, 35, 43, 51	24, 29, 34, 39	25, 31, 37, 43	●○○○
38. The three arithmetic means between 2 and −18 are:	−3, −8, −13	−4, −9, −14	−2, −7, −12	−5, −10, −15	●○○○
39. If a, A, b are in arithmetic progression, then A is called the:	geometric mean of a and b	common difference	arithmetic mean of a and b	harmonic mean of a and b	○○●○
40. A sky diver falls 16 ft, 48 ft and 80 ft in the first three seconds. The common difference of the distances is:	64	32	48	16	○●○○
41. The distance fallen by the sky diver in the 10th second in the above pattern is:	320 ft	160 ft	304 ft	288 ft	○○●○
42. The total distance fallen by the sky diver in 6 seconds in the above pattern is:	528 ft	480 ft	576 ft	192 ft	○○●○
43. The indicated sum of the terms of an arithmetic sequence is called an:	arithmetic mean	arithmetic ratio	arithmetic function	arithmetic series	○○○●
44. The symbol S_n represents the:	common ratio	common difference	sum of the first n terms of a series	nth term of a sequence	○○●○
45. The sum of the first n terms of an arithmetic series is:	$(a_1 + a_n)/n$	$(n/2)(a_1 - a_n)$	$n(a_1 + a_n)$	$(n/2)(a_1 + a_n)$	○○○●
46. Another form of the sum of n terms of an arithmetic series is:	$(n/2)[2a_1 + (n - 1)d]$	$(n/2)[2a_1 - (n - 1)d]$	$n[a_1 + (n - 1)d]$	$(n/2)[a_1 + nd]$	●○○○
47. The sum of the first 100 positive integers is:	5000	10 100	5050	4950	○○●○
48. The sum of the first 50 terms of an arithmetic series with a_1 = 5 and d = 2 is:	2700	2500	2750	2600	●○○○

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Questions	A	B	C	D	A B C D
49. A theater has 28 seats in the first row, 32 in the second, 36 in the third and so on for 50 rows. The total number of seats is:	6300	5600	6000	6500	●○○○
50. The sum of the even numbers from 2 to 100 is:	2650	5050	2500	2550	○○○●
51. The sum of the odd numbers from 1 to 99 is:	5000	2500	2450	2550	○●○○
52. The sum of all multiples of 4 between 14 and 523 is:	33 500	35 036	34 500	34 036	○○○●
53. A marching band has 14 marchers in the front row, 16 in the second, 18 in the third and so on for 25 rows. The number in the last row is:	64	62	58	60	○●○○
54. In the marching band formation, the total number of marchers in all 25 rows is:	950	1000	875	900	●○○○
55. A pile of telephone poles has 50 in the first layer, 49 in the second and so on, until 6 in the last layer. The number of layers is:	44	45	46	43	○●○○
56. The total number of poles in the above pile (50 down to 6) is:	1260	1350	1200	1300	●○○○
57. Mr. Saleem saves Rs. 500 on October 1, Rs. 550 on October 2, Rs. 600 on October 3 and so on. The total saved in the 31 days of October is:	Rs. 39 000	Rs. 36 500	Rs. 38 750	Rs. 37 500	○○●○
58. Khalid deposits Rs. 100 000 in the first month and Rs. 10 000 more each month than the month before. The amount saved in four months is:	Rs. 460 000	Rs. 400 000	Rs. 440 000	Rs. 480 000	●○○○
59. A rocket rises 20 feet in the first second, 60 feet in the second and 100 feet in the third. In the 20th second it rises:	760 ft	780 ft	800 ft	820 ft	○●○○
60. Majid's salary was Rs. 4500 in the first year with an increment of Rs. 820 every year. His total salary in 30 years is:	Rs. 500 000	Rs. 480 000	Rs. 491 700	Rs. 450 000	○○●○
61. An auditorium has 21 seats in the first row and each next row has one more seat, for 30 rows. The total number of seats is:	1200	1050	1065	1000	○○●○
62. How many terms of the sequence 18, 15, 12, ... are needed to give a sum of 45?	10	5	6	7	●○○○
63. The 20th term from the end of the A.P. 2, 7, 12, 17, ..., 222 is:	132	117	127	122	○○●○
64. If a, b, c are in A.P., then 3^a, 3^b, 3^c are in:	A.P.	none of these	G.P.	H.P.	○○●○
65. Zain pays Rs. 5000 in the first year, Rs. 6125 in the second, Rs. 7250 in the third and so on for 10 years. The total paid is:	Rs. 95 000	Rs. 105 000	Rs. 100 625	Rs. 98 500	○○●○

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Questions	A	B	C	D	A B C D
66. A sequence in which each term is obtained by multiplying the preceding term by a fixed number is called a:	geometric sequence	arithmetic sequence	constant sequence	harmonic sequence	●○○○
67. The fixed multiplier in a geometric sequence is called the:	common difference	mean	common ratio	index	○○●○
68. The common ratio of a geometric sequence is found by:	adding two consecutive terms	dividing any term by the preceding term	multiplying all terms	subtracting two consecutive terms	○●○○
69. The masses 64, 32, 16, 8, 4, 2, 1, 0.5 of iodine form a geometric sequence with common ratio:	32	2	$-1/2$	1/2	○○○●
70. The next two terms of the geometric sequence 4, 12, 36 are:	108 and 216	72 and 108	48 and 60	108 and 324	○○○●
71. The nth term of a geometric sequence with first term a_1 and common ratio r is:	$a_1 r^{n-1}$	$a_1 n^r$	$a_1 + (n-1)r$	$a_1 r^n$	●○○○
72. The first five terms of a geometric sequence with $a_1 = 5$ and r = 2 are:	5, 10, 15, 20, 25	5, 10, 20, 40, 80	5, 7, 9, 11, 13	5, 25, 125, 625, 3125	○●○○
73. The seventh term of the geometric sequence with $a_1 = 3$ and r = 2 is:	96	192	42	384	○●○○
74. Khalid saves Rs. 1000 on the first day and doubles the amount each day. The amount on the 20th day is:	Rs. 1 048 576 000	Rs. 20 000	Rs. 524 288 000	Rs. 262 144 000	○○●○
75. If a, G, b are in a geometric sequence, G is called the:	harmonic mean of a and b	common ratio of a and b	arithmetic mean of a and b	geometric mean of a and b	○○○●
76. The geometric mean of two numbers a and b is:	ab	2ab/(a + b)	√(ab)	(a + b)/2	○○●○
77. The geometric mean of 4 and 9 is:	36	13	6.5	6	○○○●
78. If both numbers are negative, the geometric mean is taken as:	imaginary	positive square root of their product	zero	negative square root of their product	○○○●
79. If the two numbers have opposite signs, the geometric mean is:	imaginary	zero	positive	negative	●○○○
80. The two geometric means between 81 and 3 are:	54 and 27	9 and 3	40 and 20	27 and 9	○○○●
81. A vacuum pump removes 1/5 of the air in a container on each stroke. The percentage of air remaining after five strokes is about:	67.2%	32.8%	20%	10%	○●○○
82. A Ping-Pong ball dropped from 16 ft always rebounds one-fourth of the distance fallen. Its 6th rebound height is:	1/256 ft	1/16 ft	1/4 ft	1/64 ft	●○○○

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Questions	A	B	C	D	A B C D
83. A city of 100 000 people grows 3% each year. The population after 15 years is about:	145 000	150 000	160 000	155 797	○○○●
84. A principal telephones 2 teachers, each of whom calls 2 more, and so on for 6 rounds. Counting the principal, the staff informed is:	126	127	128	64	○●○○
85. A river rises 1 inch on the first day and each day the rise triples. The total rise after 5 days is:	364 inches	81 inches	243 inches	121 inches	○○○●
86. The sum of the terms of a geometric sequence is called a:	common ratio	geometric mean	harmonic series	geometric series	○○○●
87. The sum of the first n terms of a geometric series ($r \neq 1$) is:	$a_1(1 - r^n)/(1 - r)$	$a_1 r^n/(1 - r)$	$a_1(1 - r^n)/(1 + r)$	$a_1(1 + r^n)/(1 - r)$	●○○○
88. The formula for S_n of a geometric series is not applicable when:	$r = 0.5$	$r = 1$	$r = 2$	$r = -1$	○●○○
89. The sum of the first 7 terms of the geometric sequence 3, 15, 75, 375, ... is:	3 × 78 125	78 125	19 530	58 593	○○○●
90. Another form of the sum of a geometric series is S_n =	$(a_1 - a_n)/(1 + r)$	$(a_1 - r\,a_n)/(1 - r)$	$(a_1 + r\,a_n)/(1 - r)$	$a_1 r\,a_n/(1 - r)$	○●○○
91. The sum of a geometric series with $a_1 = 48$, $a_n = 3$ and $r = 1/2$ is:	93	45	90	96	●○○○
92. The sum to infinity of a geometric series exists when:	$r = 1$	$r = 2$	$\|r\| < 1$	$\|r\| > 1$	○○●○
93. The sum to infinity of a geometric series with first term a and ratio r ($\|r\| < 1$) is:	$a/(1 + r)$	$a(1 - r)$	$a/(1 - r)$	$ar/(1 - r)$	○○●○
94. A pendulum swings 25 cm, then 20 cm, 16 cm, 12.8 cm, ... The total distance it travels is:	125 cm	45 cm	250 cm	100 cm	●○○○
95. The series 1 + 2 + 4 + 8 + ... has no sum because:	$r = 1/2$	$\|r\| < 1$	$r = 0$	$\|r\| > 1$	○○○●
96. The repeating decimal 0.636363... written as a fraction is:	9/14	63/100	6/11	7/11	○○○●
97. A hot-air balloon rises 80 ft in the first minute and each following minute only 90% as far as in the previous minute. Its maximum altitude is:	880 ft	800 ft	720 ft	400 ft	○●○○
98. A property worth Rs. 450 000 increases 10% per year. Its value after 8 years is about:	Rs. 810 000	Rs. 964 615	Rs. 1 000 000	Rs. 900 000	○●○○
99. Aslam borrows Rs. 20 000 at 11% compounded annually and pays in full after 4 years. He pays about:	Rs. 32 000	Rs. 30 361	Rs. 29 000	Rs. 28 800	○●○○

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Questions	A	B	C	D	A B C D
100. A man deposits Rs. 2000, Rs. 4000, Rs. 8000 and so on. The total deposited in n years is:	$2000 \cdot 2^n$	$1000(2^n - 1)$	$2000(2^n - 1)$	$2000(2^n + 1)$	○○●○
101. In a new virus outbreak, 10 people are infected on day one and infections increase by 40% per day. The common ratio is:	4	1.4	0.4	40	○●○○
102. The expected number of infected people on the 7th day in the above outbreak is about:	70	100	56	75	○○○●
103. The total infected people after one week in the above outbreak is about:	239	100	140	150	●○○○
104. Sara pays Rs. 8000 as the first installment, and each installment increases by 5%. The total of 24 installments is about:	Rs. 400 000	Rs. 192 000	Rs. 300 000	Rs. 356 016	○○○●
105. A sequence is called a harmonic sequence if the reciprocals of its terms are in:	harmonic progression	arithmetic progression	geometric progression	constant progression	○●○○
106. The sequence 1, 1/4, 1/7, 1/10, ... is a:	harmonic sequence	constant sequence	arithmetic sequence	geometric sequence	●○○○
107. The nth term of a harmonic sequence is:	$a_1 + (n - 1)d$	$1/(a_1 r^n)$	$1/[a_1 + (n - 1)d]$, where a_1 and d belong to the corresponding A.P.	$a_1 r^{n-1}$	○○●○
108. The 9th term of the H.P. 1/2, 1/7, 1/12, 1/17, ... is:	1/42	1/45	1/37	1/40	●○○○
109. The harmonic sequence whose fourth term is 1/7 and eleventh term is 1/21 has first term:	1/2	3	1	7	○○●○
110. The harmonic mean H between two numbers a and b is:	$2ab/(a + b)$	$\sqrt{(ab)}$	$(a + b)/ab$	$(a + b)/2$	●○○○
111. The harmonic mean between 15 and 7 is:	105/11	22/105	21/2	11	●○○○
112. The harmonic mean between 9 and 11 is:	10	9.9	10.1	9.5	○●○○
113. The arithmetic mean between 9 and 11 is 10 and the geometric mean is √99. The relation between A, G and H is:	$A^2 = GH$	$H^2 = AG$	$G^2 = AH$	$A = G = H$	○○●○
114. For two unequal positive numbers, the correct order of the means is:	$G > A > H$	$H > G > A$	$A > H > G$	$A > G > H$	○○○●
115. The arithmetic mean of 24 and 16 is:	40	$8\sqrt{6}$	19.2	20	○○○●
116. The harmonic mean of 24 and 16 is:	19.6	19.2	18	20	○●○○

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Questions	A	B	C	D	A B C D
117. The inequality A ≥ G follows from $(\sqrt{a} - \sqrt{b})^2$:	≥ 0	< 0	≤ 0	= 1	● ○ ○ ○
118. The Greek letter Σ (sigma) is used to denote:	difference	summation	multiplication	ratio	○ ● ○ ○
119. In the notation $\Sigma_{k=1}^{n} a_k$, the letter k is called the:	index of summation	common difference	limit	ratio	● ○ ○ ○
120. The value of $\Sigma_{k=1}^{4} (2k + 1)$ is:	20	24	28	16	○ ● ○ ○
121. The value of $\Sigma_{k=1}^{5} k^2$ is:	55	15	225	25	● ○ ○ ○
122. The sum $1^2 + 2^2 + 3^2 + 4^2 + 5^2$ in sigma notation is:	$\Sigma_{k=1}^{5} 2^k$	$\Sigma_{k=1}^{5} 2k$	$\Sigma_{k=1}^{5} k^2$	$\Sigma_{k=1}^{5} k$	○ ○ ● ○
123. The sum −2 + 4 − 6 + 8 in sigma notation is:	$\Sigma_{k=1}^{4} (-1)^{k+1} 2k$	$\Sigma_{k=1}^{4} 2k$	$\Sigma_{k=1}^{4} (-1)^k 2k$	$\Sigma_{k=1}^{4} k$	○ ○ ● ○
124. The formula for $\Sigma_{k=1}^{n} k$ is:	n(n + 1)/2	n^2	n(n + 1)(2n + 1)/6	$[n(n + 1)/2]^2$	● ○ ○ ○
125. The formula for $\Sigma_{k=1}^{n} k^2$ is:	$n^3/3$	n(n + 1)(2n + 1)/6	n(n + 1)/2	$[n(n + 1)/2]^2$	○ ● ○ ○
126. The formula for $\Sigma_{k=1}^{n} k^3$ is:	n(n + 1)(2n + 1)/6	$n^4/4$	$[n(n + 1)/2]^2$	n(n + 1)/2	○ ○ ● ○
127. The value of $\Sigma_{k=1}^{10} k$ is:	110	100	45	55	○ ○ ○ ●
128. The value of $\Sigma_{k=1}^{5} k^3$ is:	55	15	225	125	○ ○ ● ○
129. The value of $\Sigma_{k=1}^{6} k^2$ is:	21	81	36	91	○ ○ ○ ●
130. For a constant c, $\Sigma_{k=1}^{n} c$ equals:	c^n	c/n	nc	c	○ ○ ● ○
131. The sum $\Sigma(a_k + b_k)$ equals:	$\Sigma a_k / \Sigma b_k$	$\Sigma a_k - \Sigma b_k$	$\Sigma a_k \cdot \Sigma b_k$	$\Sigma a_k + \Sigma b_k$	○ ○ ○ ●
132. The infinite series $3 + 3^2 + 3^3 + \ldots$ in sigma notation is:	$\Sigma_{k=1}^{\infty} (1/3)^k$	$\Sigma_{k=1}^{\infty} 3k$	$\Sigma_{k=1}^{\infty} 3^k$	$\Sigma_{k=1}^{\infty} k^3$	○ ○ ● ○
133. The sum to n terms of the series whose nth term is $n^2 + 4n + 1$ is:	n(n + 1)/2 + 4n	n(n + 1)(2n + 1)/6 + 2n(n + 1) + n	$n^3 + 2n^2 + n$	n(n + 1)(2n + 1)/6 + 4n	○ ● ○ ○

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Questions	A	B	C	D	A B C D
134. The sum to n terms of the series whose nth term is 2n + 1 is:	n(n + 2)	n(n + 3)	n^2	n(n + 1)	●○○○
135. The sum of the first n odd numbers, Σ(2k − 1), equals:	n^2 + n	2n	n(n + 1)	n^2	○○○●
136. The result $\Sigma_{k=1}^{n}[k^m - (k-1)^m] = n^m$ is used to derive the:	formulas for Σk, Σk^2 and Σk^3	formula of the harmonic mean	formula of an infinite G.P.	formula of the geometric mean	●○○○
137. An arithmetico-geometric sequence is formed by multiplying term by term the terms of an A.P. and a:	G.P.	constant sequence	polynomial	H.P.	●○○○
138. The nth term of an arithmetico-geometric sequence is the product of the nth term of an arithmetic sequence and the nth term of a:	geometric sequence	mean	series	harmonic sequence	●○○○
139. Arithmetico-geometric sequences arise in applications such as the computation of:	colours of light	temperatures only	expected values in statistics	areas of triangles only	○○●○
140. The sum of an arithmetico-geometric series is derived by multiplying the series by r and:	adding to the original series	subtracting from the original series (telescoping)	taking the square root	dividing by r only	○●○○
141. The sum to infinity of the series 1 + 2(1/2) + 3(1/4) + 4(1/8) + … is:	4	3	2	6	●○○○
142. The sum to infinity of the series 1 + 3(1/2) + 5(1/4) + 7(1/8) + … is:	4	3	8	6	○○○●
143. In the arithmetico-geometric series 1 + 3(1/2) + 5(1/4) + …, the A.P. has first term and common difference:	a = 1, d = 2	a = 1, d = 1	a = 3, d = 2	a = 2, d = 1	●○○○
144. In the arithmetico-geometric series 1 + 3(1/2) + 5(1/4) + …, the common ratio of the G.P. is:	3	1/2	1/4	2	○●○○
145. Sequences and series have importance in many areas such as finance, statistics, population growth and:	music notes only	painting only	physics	cooking only	○○●○
146. Time (seconds, minutes, hours) is an example of a:	geometric series	set	repeating sequence	harmonic mean	○○●○
147. Problems of increase at a percentage rate per period are solved using:	harmonic sequences	polynomials	arithmetic sequences	geometric sequences	○○○●
148. Problems of constant increase every period (such as saving Rs. 10 000 more each month) are solved using:	arithmetic series	harmonic series	geometric series	infinite series	●○○○
149. The 10th term of the A.P. 7, 11, 15, … is:	47	43	39	40	○●○○
150. The sum of the first 20 terms of the A.P. 3, 7, 11, … is:	800	860	820	840	○○●○

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Questions	A	B	C	D	A B C D
151. The number of terms in the A.P. 4, 7, 10, ..., 100 is:	31	33	34	32	○●○○
152. In the A.P. 5, 9, 13, ..., the term equal to 101 is the:	20th	25th	24th	26th	○●○○
153. The sum of the first 10 terms of the A.P. with $a_1 = 2$ and $d = 3$ is:	155	150	145	160	●○○○
154. The sum of the first 30 odd numbers is:	960	930	870	900	○○○●
155. The sum of the first n even numbers is:	2n	n^2	n(n − 1)	n(n + 1)	○○○●
156. The arithmetic mean between 10 and 20 is:	30	16	15	14	○○●○
157. Three arithmetic means between 4 and 20 are:	7, 11, 15	6, 10, 14	8, 12, 16	9, 13, 17	○○●○
158. If $a_n = 2n + 5$, the common difference of the sequence is:	3	7	5	2	○○○●
159. The sum of all multiples of 3 from 3 to 99 is:	1650	1590	1700	1683	○○○●
160. The 6th term of the G.P. 2, 6, 18, ... is:	729	486	1458	162	○●○○
161. The 5th term of the G.P. 81, 27, 9, ... is:	9	1	3	1/3	○●○○
162. The sum of the first 6 terms of the G.P. 1, 2, 4, ... is:	63	64	31	127	●○○○
163. The sum to infinity of the G.P. 6, 2, 2/3, ... is:	12	8	10	9	○○○●
164. The sum to infinity of 1/2 + 1/4 + 1/8 + ... is:	1/2	2	1	3/2	○○●○
165. In a G.P. with $a_1 = 3$ and $a_4 = 24$, the common ratio is:	8	4	2	3	○○●○
166. The geometric mean between 2 and 8 is:	6	5	4	16	○○●○
167. The geometric mean between 3 and 12 is:	6	7.5	36	4	●○○○

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Questions	A	B	C	D	A B C D
168. The repeating decimal 0.333... as a fraction is:	1/3	33/100	3/10	3/100	●○○○
169. The repeating decimal 0.222... as a fraction is:	2/11	1/5	2/9	22/100	○○●○
170. The number of terms in the G.P. 2, 4, 8, ..., 256 is:	128	8	9	7	○●○○
171. The sum of the first 5 terms of the G.P. 3, 6, 12, ... is:	96	45	63	93	○○○●
172. The next term of the H.P. 1/3, 1/5, 1/7, ... is:	1/9	1/10	1/8	1/11	●○○○
173. The 5th term of the H.P. 1, 1/2, 1/3, ... is:	1/5	1/4	1/10	1/6	●○○○
174. The harmonic mean between 4 and 12 is:	5	6	8	7	○●○○
175. The arithmetic and geometric means between 4 and 16 are respectively:	8 and 10	10 and 8	20 and 8	10 and 6.4	○●○○
176. The harmonic mean between 4 and 16 is:	8	6.4	10	7	○●○○
177. If the arithmetic mean of two positive numbers is 10 and the geometric mean is 8, their harmonic mean is:	7.5	12.5	9	6.4	○○○●
178. The equality of A, G and H of two positive numbers holds only when:	the numbers are reciprocal	the two numbers are equal	one number is zero	the numbers are negative	○●○○
179. The value of $\Sigma_{k=1}^{3} k$ is:	9	12	3	6	○○○●
180. The value of $\Sigma_{k=1}^{4} k^2$ is:	30	10	16	20	●○○○
181. The value of $\Sigma_{k=1}^{4} k^3$ is:	64	30	100	10	○○●○
182. The value of $\Sigma_{k=2}^{4} k$ is:	10	12	6	9	○○○●
183. The value of $\Sigma_{k=1}^{20} k$ is:	200	210	190	220	○●○○
184. The value of $\Sigma_{k=1}^{4} 2^k$ is:	30	32	14	16	●○○○

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Questions	A	B	C	D	A B C D
185. The value of $\Sigma_{k=1}^{5}$ (2k − 1) is:	20	30	15	25	○○○●
186. The summation property Σ $3a_k$ equals:	$\Sigma a_k/3$	$3 \Sigma a_k$	$(\Sigma a_k)^3$	$\Sigma a_k + 3$	○●○○
187. The first three terms of the arithmetico-geometric sequence with a = 1, d = 1 and r = 2 are:	1, 3, 9	1, 2, 4	1, 4, 12	2, 4, 8	○○●○
188. The sum to infinity of an arithmetico-geometric series with b = 1 and |r| < 1 is:	ar/(1 − r)	a/(1 − r) − dr/(1 − r)^2	a/(1 − r) + dr/(1 − r)^2	a/(1 + r) + dr/(1 + r)^2	○○●○
189. The sum to infinity of 1 + 2x + $3x^2$ + ... for x = 1/3 is:	3/2	4/3	3	9/4	○○○●
190. The compound amount of a principal P at rate r per year after n years is:	P r^n	P(1 + nr)	P(1 + r)^n	P + r^n	○○●○
191. Rs. 1000 invested at 10% compound interest for 2 years amounts to:	Rs. 1220	Rs. 1100	Rs. 1200	Rs. 1210	○○○●
192. Rs. 5000 invested at 10% compound interest for 3 years amounts to:	Rs. 6500	Rs. 6655	Rs. 6000	Rs. 6600	○●○○
193. A super ball dropped from a tower 556 ft high always rebounds three-fourths of the distance fallen. The total distance travelled when it hits the ground is:	1668 ft	2224 ft	3892 ft	4448 ft	○○●○
194. A ball dropped from 10 m rebounds half the height each time. The total distance travelled (up and down) is:	20 m	40 m	15 m	30 m	○○○●
195. If a person saves Rs. 1 on the first day and doubles the amount each day, the total saved in 10 days is:	Rs. 1023	Rs. 1000	Rs. 1024	Rs. 512	●○○○
196. A population that doubles every year forms a:	arithmetic sequence with d = 2	constant sequence	harmonic sequence	geometric sequence with r = 2	○○○●
197. The difference between a sequence and a series is that a series is the:	list of the terms of a sequence	sum of the terms of a sequence	reciprocal of a sequence	product of the terms of a sequence	○●○○
198. The common ratio of the geometric sequence 2, −6, 18, −54, ... is:	−1/3	1/3	−3	3	○○●○
199. Which of the following is NOT an arithmetic sequence?	0.1, 0.3, 0.5, 0.7, ...	2, 4, 8, 16, ...	10, 7, 4, 1, ...	2, 5, 8, 11, ...	○●○○
200. The constant sequence 5, 5, 5, 5, ... is an arithmetic sequence with common difference:	−5	0	1	5	○●○○

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