

Name: _____					Subject: Mathematics	Class: 11 th	Time: 80 minutes	Total Marks: 40
Chapter No.06		MJDexpert.com				Obtained marks		

Note: Please attempt any 10 short questions from Question 2. Also, attempt both parts of Question 3. Cutting and removal of any content is strictly prohibited.

Question.No.01:- Choose the correct answer.

(10x01=10)

		A.	B.	C.	D.
i.	A.M between $3\sqrt{5}$ and $5\sqrt{5}$.	$4\sqrt{5}$	$5\sqrt{5}$	10	$2\sqrt{5}$
ii.	If $\frac{a^n + b^n}{a^{n-1} + b^{n-1}}$ may be A.M between "a" and "b", then "n"	0	-1	1	$\frac{1}{2}$
iii.	Arithmetic Mean between $\frac{1}{a}$ and $\frac{1}{b}$ is	$\frac{a+b}{ab}$	$\frac{a+b}{2ab}$	$\frac{2ab}{a+b}$	$\frac{ab}{a+b}$
iv.	In sum of infinite geometric series is ratio is less from 1 then formula is using	$\frac{a_1(1-r^n)}{1-r}$	$\frac{a_1(1+r^n)}{1-r}$	$\frac{a_1(1+r^n)}{1+r}$	$\frac{a_1(1-r^n)}{1+r}$
v.	a = 4, b = 16 then geometric mean is	± 9	± 10	± 8	± 11
vi.	A sequence is reciprocal of arithmetic progression is called	Geometric sequence	Arithmetic sequence	Harmonic sequence	None
vii.	Sum of the sequence $-3 + (-1) + 1 + 3 + 5 + \dots + a_{16}$ is	1581	1518	1512	1815
viii.	The 5 th term of the G.P 3,6,12	48	84	49	94
ix.	Sum of the series $1.11+1.41+1.71+\dots+a_{10}$	42.6	24.6	48.6	39.6
x.	$\sum_{k=1}^n k =$	$\frac{n(n+1)}{2}$	$\frac{(n+1)}{2}$	$\frac{n(n+2)}{2}$	$\frac{(n+2)}{2}$

Question.No.02: -Solve all parts.

(02x10=20)

i.	Which term of the A.P 5, 2, -1, is -85
ii.	Find three A.Ms between 3 and 11
iii.	How many terms of the series $-7 + (-5) + (-3) + \dots$ amount to 65
iv.	If 5, 8 are two A.Ms between a & b, find a and b.
v.	Sum the series $-3 + (-1) + 1 + 3 + 5 + \dots + a_{16}$.
vi.	If $y = \frac{x}{2} + \frac{1}{4}x^2 + \frac{1}{8}x^3 + \dots$ and if $0 < x < 2$ then prove that $x = \frac{2y}{1+y}$
vii.	Find the sum of infinite geometric series $2 + 1 + 0.5 + \dots$
viii.	If $y = 1 + 2x + 4x^2 + 8x^3 + \dots$ then show that $x = \frac{y-1}{2y}$
ix.	If $\frac{1}{a}, \frac{1}{b},$ and $\frac{1}{c}$ are in G.P, show that the common ratio is $\pm \sqrt{\frac{a}{c}}$
x.	If $y = \frac{x}{2} + \frac{1}{4}x^2 + \frac{1}{8}x^3 + \dots$ and if $0 < x < 2$ then prove that $x = \frac{2y}{1+y}$

Question.No.03:-

(02x05=10)

a)	The sum of five numbers in A.P is 25 and the sum of whose square is 135. Find numbers.
b)	Find vulgar fraction equivalent to the following recurring decimal $1.\dot{3}\dot{4}$