

CLASS : XIth **DATE:**

SUBJECT : MATHS DPP NO. :8

Topic :-sequences and series

- 1. The sum of the series $1.3^2 + 2.5^2 + 3.7^2 + ...$ upto 20 terms is b)189080 c) 199080 a) 188090 d) 199089
- 2. If $\frac{a}{b+c'c+a'}\frac{b}{a+b}$ are in AP, then b) c,a,b are in AP c) a^2,b^2,c^2 are in AP d) a,b,c are in GP a) *a,b,c* are in AP

3. The sum of *n* terms of two arithmetic series are in the ratio 2n + 3:6n + 5, then the ratio of their 13th terms is

a) 53:155b) 27:87c) 29:83d) 31:89 4. If $\frac{x+y}{1-xy}$, $y, \frac{y+z}{1-yz}$ be in A.P., then $x, \frac{1}{y}$, z will be in a) A.P. c) H.P. b) G.P. d) None of these 5. x + y + z = 15, if 9, x, y, z, a are in AP, while $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = \frac{5}{3}$, if 9, x, y, z, a are in HP, then value of a will be c) 3 b)2 d)9 a) 1 6. If *a*,*b* and *c* are in AP, then which one of the following is not true? a) $\frac{k}{a} \frac{k}{b}$ and $\frac{k}{c}$ are in HP b) a + k, b + k and c + k are in AP d) $a^2 b^2$ and c^2 are in AP c) ka,kbandkc are in AP 7. The value of $(0.16)^{\log_{2.5}(\frac{1}{3} + \frac{1}{3^2} + \frac{1}{3^3} + \dots \cos \infty)}$ is a) 0.16 c) 0.4 d)4 8. If $\frac{3+5+7+...+n \text{ terms}}{5+8+11+...+10 \text{ terms}} = 7$, then the value of *n* is b)36 c) 37 d)40 a) 35 9. The sum of the series $1 + \frac{1+2}{2!} + \frac{1+2+2^2}{3!} + \frac{1+2+2^2+2^3}{4!} + \dots$, is a) e^2 b) $e^2 + e$ c) $e^2 - e$

10. If a_1, a_2, \dots, a_{50} are in GP, then $\frac{a_1 - a_3 + a_5 - \dots + a_{49}}{a_2 - a_4 + a_6 - \dots + a_{50}}$ is equal to			
a) 0	b)1	c) $\frac{a_1}{a_2}$	d) $\frac{a_{25}}{a_{24}}$
11. If <i>a</i> , <i>b</i> , <i>c</i> , <i>d</i> are in HP, then			
a) $a + b > b + c$	b) <i>ad</i> > <i>bc</i>	c) Both (a) and (b)	d) None of these
12. If the sum of the series $1 + \frac{3}{x} + \frac{9}{x^2} + \frac{27}{x^3} +$ to ∞ is a finite number, then			
a) <i>x</i> < 3	b) $x > \frac{1}{3}$	c) $x < \frac{1}{3}$	d) $x > 3$
13. Consider the following statements : $1.1+3+5+$ upton terms = n^2 $2.2+4+6+$ upton terms = $n^2 + 1$ Which of the statement given above is/are correct? a) Only (1) b) Only (2) correct?			
			$(1) \operatorname{Hor}(2)$
14. If $9a^2 + 4b^2 = 18ab$, th a) $\log 5 + \log 3 + \log a$ b) $\log 5 + \log 3 + \log 3$ c) $\log 5 + \log a + \log b$ d) None of these	then $\log(3a + 2b) =$ $a + \log 5b$ $a + \log b$		
15. If $S = \sum_{n=1}^{\infty} \left(\frac{{}^{n}C_{0} + {}^{n}C_{1} + {}^{n}C_{2} + \dots + {}^{n}C_{n}}{{}^{n}P_{n}} \right)$, then S equals			
a) 2 <i>e</i>	b)2 <i>e</i> — 1	c) 2 <i>e</i> + 1	d) None of these
16. The number of divisors of 3×7^3 , 7×11^2 and 2×61 are in			
a) AP	b)GP	c) HP	d)None of these
17. If $\frac{1}{a} + \frac{1}{c} + \frac{1}{a-b} + \frac{1}{c-b} = 0$ and $b \neq a + c$, then <i>a</i> , <i>b</i> , <i>c</i> are in			
a) G.P.	b) H.P.	c) A.P.	d) None of these
18. If the sum of two extreme numbers of an AP with four terms is 8 and product of remaining two middle terms is 15, then greatest number of the series will be			
a) 5	b)7	c) 9	d)11
19. The sum of the series $\frac{1}{\sqrt{1}+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}} + \dots + \frac{1}{\sqrt{n^2-1}+\sqrt{n^2}}$ equals			
a) $\frac{2n+1}{\sqrt{n}}$	b) $\frac{\sqrt{n+1}}{\sqrt{n}+\sqrt{n-1}}$	c) $\frac{n+\sqrt{n^2-1}}{2\sqrt{n}}$	d) <i>n</i> −1
20. If x, y, z are positive int a) = 8 xyz	tegers, then $(x + y)(y + b) > 8 xyz$	z)(z + x) is c) < 8 xyz	d)None of these