

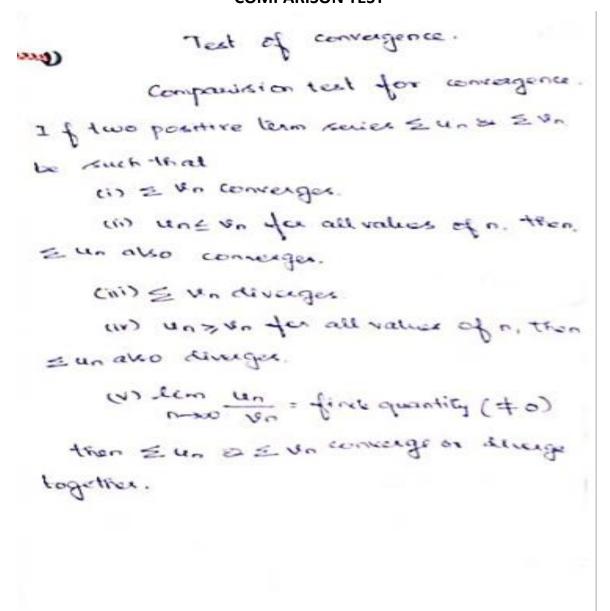


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### **Topic: 2.4 – TEST OF CONVERGENCE**

### **COMPARISON TEST**







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Note (i) The harmonic Keriers (is convergen if pri ms diverger if PL 1 (ii) The Geometric series Ex cis converges if = 11 (1) direnger if 0 71 O. Test the convergence of the series Gin Zun = 1 3 Todied is term (un) In numerator, 1, 3, 5,.... In an A.P : to= a+cn-isd. 0 = 1 tn = 2n-1 dea





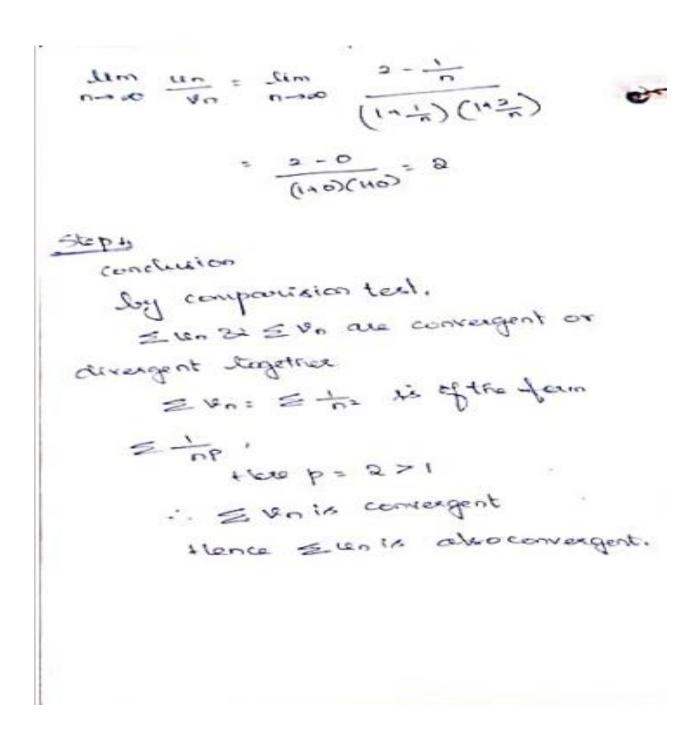
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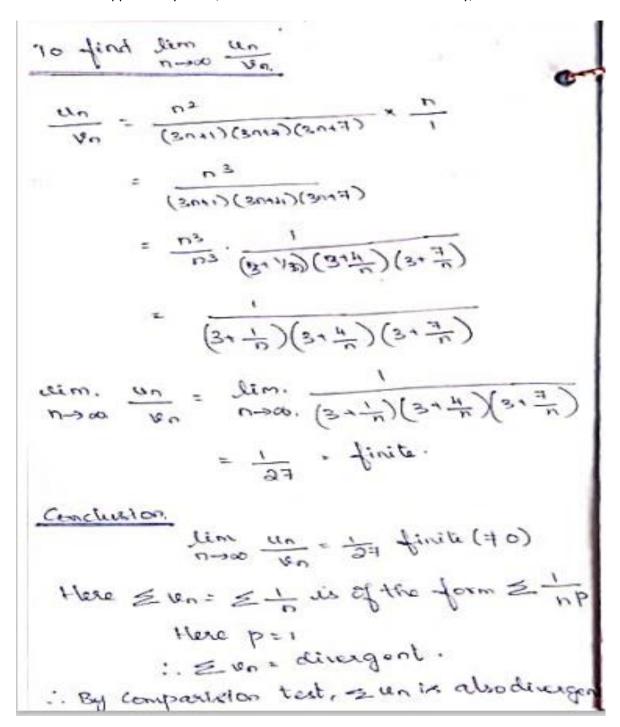
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C. C.	est for convergence of the series
isch.	Guven Zun = 1 4.4.10 4.1012 10.12
10	the numerator to = n2
I	the denomination, $factors: 1, 3, 10, \dots th = 0.16, 13d$
	factore: 4110113, to = a+cn-12d.
<u>m</u>	Jakou : 10,13,16, to = 30+7.
10.	find no (30-1) (30-14) (30-14)
	150 = 1





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3). Find the nature of the series to the the Given = 410 + 1 1 120 Tofind un In the denominator, 10,20,30, -. are in AP : tn= a=(n-1)d = 100. :. un: 1 To find un va = -1 = -1 = -1/2 To find un  $\frac{u_0}{v_0} = \frac{1}{\sqrt{100}} \times \frac{v_{12}}{v_{12}} = \frac{v_0}{\sqrt{100}\sqrt{10}} \times \frac{v_0}{\sqrt{100}}$ lin un : -Conduction lim un = - Tro frite (+0) Here = 100 , p= 1 < 1 By composition Test. Suricale directory





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(b) 
$$\frac{1}{12} = \frac{1+2}{1^2+2^2} + \frac{1+2+3}{1^2+2^2+3^2}$$

To find un

 $u_0 = \frac{1}{1+2+2+3+3+1} + \frac{1+2}{1^2+2^2+3^2} + \frac{1+2+3}{1^2+2^2+3^2}$ 
 $u_0 = \frac{1+2+2+3+3+1}{1+2+2+3+3+3} = \frac{n}{2}$ 
 $u_0 = \frac{n(n+1)}{2} = \frac{n}{2}$ 
 $u_0 = \frac{n(n+1)}{2} = \frac{n}{2}$ 
 $u_0 = \frac{n(n+1)}{2} = \frac{n}{2}$ 

To find  $v_0$ 
 $v_0 = \frac{1}{n^2+2} = \frac{1}{n^2+2} = \frac{n}{n}$ 

To find  $v_0$ 
 $v_0 = \frac{1}{n^2+2+3+3+3+1} = \frac{n}{n^2+2+3+3+3+1}$ 
 $v_0 = \frac{n(n+1)(3n+1)}{2} = \frac{3}{n}$ 
 $v_0 = \frac{3}{n^2+2+3+1} = \frac{3}{n}$ 
 $v_0 = \frac{3}{n^2+2+1} = \frac{3}{n^2+2+1} = \frac{3}{n}$ 
 $v_0 = \frac{3$ 





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Discuss the convergence or divergence of the To find vo un= 1 = 1 tim un sim (14 in): 1. finite (40)

There fere, by compression test, zuneszen,

are convergent as divergent together

bt,  $v_n = z - \frac{1}{nP^{-1}}$  is of the ferm  $z - \frac{1}{nP}$ = I'm Ix convergent if (p-1)>1

=> = un ix also convergent if (p-1)>1

=> = un ix also divergent if (p-1)





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