



#### AN AUTONOMOUS INSTITUTION

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#### **TOPIC: 2.2 – SERIES: TYPES AND CONVERGENCE**

Series. Infinite series If and an an infinite sequence of real numbers, then a, + a2 + a3 + ... + an + ... o is called an infinite series. An infinite review is denoted by san and the rum of its first in terms is denoted by Sn. Convergent. Direngent & Oscillatory of a societ consider the infinite xeries. ≤ an = a, + a2+ ... + an+ ... o. top the som of first, u. yearns po Sn = a1+a2+ .... an. The convergence or divergence of the series Ear is defined in terms of the convergence on directors of the sequence & sof a. Zan in said to converge if the requence & say converges.





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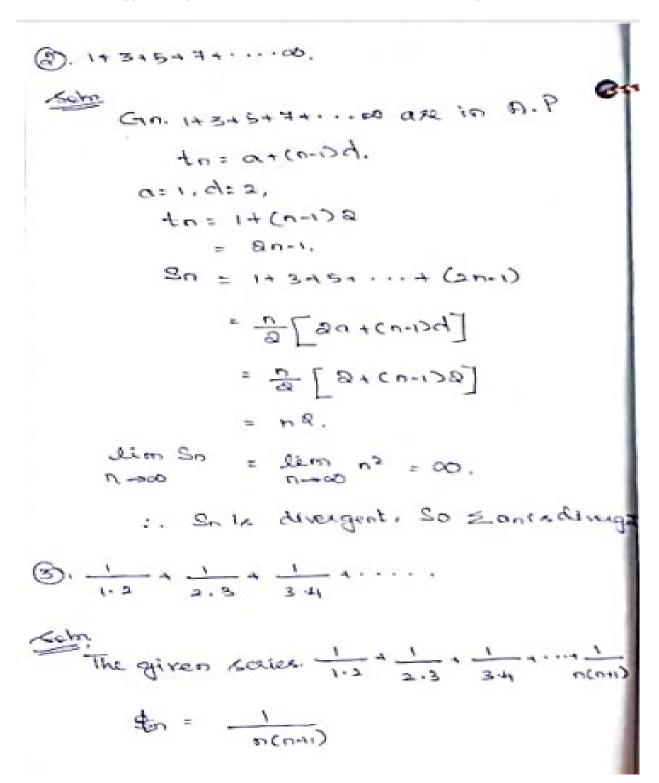
ozan is said to be diverge if the puence { sn} direiger. @ . z an in said to oscillatory if the sequence of say does not land to a unique semit as n+00. O. Examine the convergence of the review 1+2+3+ .... 40 + . . . . 00 101 Sn = 1+2+ 34 . . . + n. Bu = D(Udi) Um Sn = Um n(n+1) 1 - Le m m (041) Jun 5 = 00. :. The Sn divagent .. Zan is also direigent.





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So = 
$$\frac{1}{2} - \frac{1}{12}$$

Here  $u_1 = 1 - \frac{1}{2}$ 
 $u_3 = \frac{1}{2} - \frac{1}{3}$ 
 $u_3 = \frac{1}{3} - \frac{1}{4}$ 
 $u_{n-1} = \frac{1}{2} - \frac{1}{2}$ 
 $u_{n-2} = \frac{1}{$