SEQUENCES & SERIES (Q 4 & 5, PAPER 1)

LESSON NO. 1: SEQUENCES

2005

4 (b) (ii) A sequence is defined by $u_n = (2-n)2^{n-1}$. Show that $u_{n+2} - 4u_{n+1} + 4u_n = 0$, for all $n \in \mathbf{N}$.

2003

4 (c) (i) $u_1, u_2, u_3, u_4, u_5, \ldots\ldots$ is a sequence where $u_1 = 2$ and $u_{n+1} = (-1)^n u_n + 3$. Evaluate u_2, u_3, u_4, u_5 and u_{10}.

2004

4 (c) (i) The sequence $u_1, u_2, u_3, \ldots.$ is given by $u_{n+1} = \sqrt{4-(u_n)^2}$ and $u_1 = a > 0$. For what value of a will all the terms of the sequence be equal to each other?

2001

4 (a) The sum of the first n terms of an arithmetic series is given by $S_n = 3n^2 - 4n$. Use S_n to find: (i) the first term, u_1

(ii) the sum of the second term and the third term, $u_2 + u_3$.

ANSWERS

2003 4 (c) (i) $u_2 = 1,\ u_3 = 4,\ u_4 = -1,\ u_5 = 2,\ u_{10} = 1$

2004 4 (c) (i) $a = \sqrt{2}$

2001 4 (a) (i) -1 (ii) 16