

Babasaheb Bhimrao Ambedkar Bihar University, Muzaffarpur

Directorate of Distance Education

T.D.C. 3rd Semester Examination 2015 (Session 2014-17)

Subject:- Mathematics (Hons.)

Paper – 3<sup>rd</sup>

Assignment (Full Marks – 20)

Answer all the questions.

(a) Define convergence of a sequence and prove that the limit of a sequence is unique.

(b) Prove that the sequence  $\langle a_n \rangle$  defined by  $a_1 = \sqrt{2}$ ,  $a_{n+1} = \sqrt{2a_n}$  converges to 2.