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COMPUTATION THROUGH DEFINITE INTEGRATIONS FOR HYPERGEOMETRIC FUNCTIONS

M.P. Chaudhary, Salahuddin* and Sabahat Parveen**

International Scientific Research and Welfare Organization
New Delhi - 110018, INDIA

E-mail : dr.m.p.chaudhary@gmail.com

*Department of Mathematics,
AMET University,
Kanathur, Chennai, Tamil Nadu, INDIA

E-mail : vsludn@gmail.com

**Department of Mathematics,
Maharashtra College of Arts, Sci. and Comm.,
Mumbai, Maharashtra, INDIA

E-mail : siansarii@gmail.com

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Abstract: In this article authors establish ten definite integrations for hypergeometric functions in association with Bessel function. Several closely-related results such as (for example) Generalized hypergeometric functions are also considered. These results provide some extensions in the scientific literature.

Keywords and Phrases: Bessel Function, Ramanujan's series.

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1. Introduction

The Bessel function of first kind of order n is defined as:

$$J_n(\eta) = \frac{(\frac{\eta}{2})^n}{\Gamma(n+1)}\ {}_0F_1\Big(-; n+1; -\frac{\eta^2}{4}\Big) \tag{1.1}$$