

RELATIONS BETWEEN MOCK THETA FUNCTIONS AND COMBINATORIAL PARTITION IDENTITIES

M. P. Chaudhary, Salem Guiben* and Kamel Mazhouda**

International Scientific Research and Welfare Organization,
(Albert Einstein Chair Professor of Mathematical Sciences),
New Delhi - 110018, INDIA

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

*Faculty of Science of Monastir,
Department of Mathematics, 5000 Monastir, TUNISIA

E-mail : guibensalem75@gmail.com

**University of Sousse, Higher Institute of Applied Sciences and Technology, 4003
Sousse, Tunisia, and, Universite Polytechnique Hauts-De-France, Laboratoire
CERAMATHS, FR CNRS 2037, Le Mont Houy, 59313 Valenciennes Cedex 9,
FRANCE

E-mail : kamel.mazhouda@fsm.rnu.tn

(Received: Dec. 25, 2022 Accepted: Dec. 29, 2022 Published: Dec. 30, 2022)

Abstract: The main object of this paper is to present 6 new interrelationships between mock theta functions and combinatorial partition identities. The results presented in this paper are motivated by some recent works by M.P.Chaudhary [6].

Keywords and Phrases: Mock theta functions, q-product identities, q-series.

2020 Mathematics Subject Classification: Primary 11P82, 11P84; Secondary 05A17.

1. Introduction and Definitions

In his last letter to Hardy, dated three months before his death in early 1920, (see [6], pp. 33-34; [8], pp. 354-355; [10], pp. 127-131), Ramanujan gave a list of