

King Fahd University of Petroleum and Minerals  
Department of Mathematics and Statistics  
Math-302 Semester-133 QUIZ IV

NAME:

S.No.

ID:

Maximum Marks: 10

Section:02

Time Allowed: 30 minutes

- (1) Show that  $u(x, y) = \log_e(x^2 + y^2)$  is a harmonic function and determine  $v(x, y)$  so that  $w = u + iv$  is an analytic function.
- (2) Find the principal value of  $i^{(1-i)}$ .
- (3) Solve  $\sinh z = -1$ .