

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2015/2016**

**YEAR II SEMESTER II EXAMINATION FOR THE MASTER OF MASTER OF SCIENCE IN APPLIED MATHEMATICS**

# SMA 3107: COMPUTER ANALYSIS II

**DATE: OCTOBER, 2015**  **TIME: 3 HOURS**

**INSTRUCTIONS: Answer Question ONE and any other TWO Questions.**

**Question One – 30 Marks**

a) i. Define a menomorphic function in a region R. [3 marks]

ii. Evaluate the complex integral

 within . [5 marks]

b) Using miltag-lapper expansion theorem prove that .

[6 marks]

c) Given that  when ReZ>1. [4 marks]

d) State and prove Jensen’s inequality. [6 marks]

e) Explain briefly functions of finite order as regards complex analysis. [4 marks]

c) Briefly discuss the relevance of strategic positioning by firms in an industry. [12 marks]

**Question Two – 20 Marks**

a) Prove that the simplest complex function with negative integers for zeros is the canonical product  [10 marks]

b) State any proof the Poissons integral formula for half plane. [10 marks]

**Question Three (20 Marks)**

a) Let H(Z) be regular analytic and grounded functions in a strip  and let H(t)=1 H(z+1)=ZH(z) then prove that H(Z)=where is a Gamma function.

[10 marks]

b) State of prove evaluation identify. [10 marks]

**Question Four (20 Marks)**

a) Define the complex G(Z) by

 prove that  [10 marks]

b) Given the radius of convergence R=1, show that the sin5 an Zn uniformity conveys in the domain and 