KENYA AERONAUTICAL COLLEGE

DIPLOMA IN AERONAUTICAL ENGINEERING

SUBJECT : MATHEMATICS

CLASS : 09 (2ND YEAR 1ST TERM)

TIME : 2 HRS

DATE : 8TH OCTOBER, 2012

**QUESTION 1**

1. Evaluate
2. 
3.  ***(14 marks)***
4. Use triple integration to find the volume of the solid bounded by the planes  and  and the surface  . ***(6 marks)***

**QUESTION 2**

1. Use double integration to find the area of the plane figure bounded by the curves

  and y2 = 4 – (x – 3)2 ***(9 marks)***

 (b) Find the volume enclosed by the curve x2 + y2 = 16 and the planes z = 0 and

 z = 5 – x  ***(11 marks)***

**QUESTION 3**

1. Change the order of the double integration

 Sin (*y*)2 *dydx* and hence evaluate the integral. ***(10 marks)***

(b) Find the area bounded by the curve y = x2, the axis and the line x = 4. Hence determine its

 (i) Centroid

 (ii) Volume when the area is rotated about x – axis. ***(10marks)***