Dawson College

Mathematics Department

Final Examination

201-NYA-05- Calculus I Section: 03

LABORATORY TECHNOLOGY-ANALYTICAL CHEMISTRY PROGRAM

Monday, May 16, 2016 14:00-17:00

Student Name: _____Student I.D. #:_____

Instructor: O. Veres

INSTRUCTIONS:

Print your name and student number in the space provided above.
Attempt all questions. Show all your work.
All questions are to be answered directly on the examination paper.
Only the following calculators are permitted: EL-531 XG or EL-531X
Translation and regular dictionaries are permitted.
This examination consists of 15 questions on 17 pages, including this cover page.
Please ensure that you have a complete exam package before starting.
The examination must be returned intact.

Question#	Marks obtained/available
1	/12
2	/5
3	/5
4	/14
5	/4
6	/4
7	/5
8	/5
9	/5
10	/4
11	/8
12	/4
13	/5
14	/5
15	/15
Total/100	

2.

b. Find the indefinite integral

5. [4 marks] The amount (in

6. [4 marks] A metal sphere dissolves in acid such that its volume decreases by .
   How fast is the radius of the sphere changing when the volume is ?

7. [5 marks] A right circular cylinder is inscribed in a cone with height of and base radius of . Find the largest possible volume of such a cylinder.

9. [5 marks] Find the value(s) of for which the tangent line to the curve is horizontal.

10. [4 marks] Evaluate

11. [4+3+1 marks] Evaluate the given definite integral

    a. using the Limit of Riemann Sums : Formulae:

13. [5 marks] Find the total area enclosed by the functions and

14. [5 marks] Find the average value of the function on

d. Find the intervals where the function is increasing and decreasing