



الجامعة التكنولوجية

University of Technology  
Department of Applied Sciences  
First Examination 2015/2016



Subject : Environmental material  
Division : Material/Applied Science  
Examiner : Dr.Nahida.J.H.AlMashhadani

year: 3  
Time : 3 hours

Date : ٢٠١٦/٩/١٩

بسم الله الرحمن الرحيم

Q1:List the particulate air pollutants.

Q2:What is the sources of water pollutions.

Q3:Explain the nitrogen contamination detection in water.

Q4:List the CO health effects.

Q5:Discuss the separation process for hazardous waste.

Branch: **physics and Material**

Subject: Matlab

Examiner: Lec. Eman H.

**Final Examination****2015 - 2016**

Class : 3rd year

Time : 3 hours

Date : 5/9/2016

Remark: Answer five questions only

Q1/A) Solve the system using Matlab programming:

$$f' = 4f - g, \quad f(0)=0$$

$$g' = 3f+2g, \quad g(0)=1$$

B) i) Find 2<sup>nd</sup> differentiation of g with respect to (y) where

$$g = x^2 + \sin(y) + e^{z*(x/y!)} \quad \text{by using Matlab.}$$

ii) Find the value of g if  $x=2$ ,  $y=4$  and  $z=1$ Q2/ If  $y_1=x^2+2$ 

$$y_2=\cos(x) \quad \text{where } x=0,0.1,\dots,1$$

1) Plot  $y_1$  and  $y_2$  on same graph with same axes on the same figure window.2) Plot the bar of  $y_1$ , 3) the bar horizontal of  $y_2$ .Q3/A) Evaluate  $\int_1^2 \sqrt{x} dx$  using MatlabB) Write a program which starts with input the value of x to calculate  $y=x+5$  where  $x=1$ ,  $y=x^2+3$  where  $x=2$ ,  $y=x^3$  where  $x=3$  finally  $y = x^4+5$  using switch statement .Q4/ If  $A = [1 \ 2 \ 5; 3 \ 4 \ 7; 5 \ 6 \ 9]$ 

What is the result of the following?

1)  $B = [1.*A(:) \ 2.*A(:) \ 3.*A(:)]$

2)  $C = [A; A; A]$

3)  $D = \text{Sort}(A)$

4)  $Y = \text{mean}(A)$

Q5/ A) Write a Matlab program to compute the value of S where:

$$S = 10 + \frac{1}{x} - \frac{3}{x^3} + \frac{5}{x^5} - \frac{7}{x^7} + \dots - \frac{11}{x^{11}} \quad \text{for any value of } x.$$

B) Write a program to enter a number and test if it's odd or even.

**Best Wishes**