Ministry of Higher Education
and Scientific Research
University of Technology
Computer Sciences
Departement

أسئلة الامتحان النهائي الكورس الأول
الدور الثاني
للعام الدراسي
2016 - 2017

Date:
Time: 3 hours
Lecturer:dr abd mohsen
& lecture semaa .H

Subject :mathematics
Class: class
Branch: all branches

Answer five question only:-(14 mark for each question)

Q1) Find the graph of the following function

1) y = cos (x) 2) y = x^2 -1 3) $y = \sqrt{x}$ 4) y = $|x| + 4$

Q2)A- If $A = \begin{pmatrix} 2 & 1 \\ -2 & 3 \end{pmatrix}$ **&** $B = \begin{pmatrix} -1 & 0 & 2 \\ 2 & -4 & 1 \end{pmatrix}$ **,***Then prove* $(A.B)^T = B^T.A^T$

B – The function $f(x) = \begin{cases} x^2 + 3 & x \neq 2 \\ -5 & x = 2 \end{cases}$ **is continuous or not?**

Q3)A - If $A = \begin{pmatrix} 2 & -1 \\ 2 & 3 \end{pmatrix}$ **,***Then find* $(A^{-1}.\ A = A\ .\ A^{-1} = I)$

B- FIND :- 1) symmetric matrix $_{(3*3)}$ **2) I** $_{(4*4)}$

Q4) Find domain & range

$$(1)\ y = \frac{1}{\sqrt{8x+2}} \qquad (2)\ y = 6cos(x)$$

$$(3)\ y = \sqrt{x^2 - 4} \qquad (4)\ y = x^2 + 16$$

Q5) FIND :-

$$(1)\ \lim_{x\to 0} \frac{sin(2x)}{2x^2+x} \qquad (2)\ \lim_{x\to 0} \frac{sin\,(3x)}{sin\,(2x)}$$

$$(3)\ \lim_{x\to 0} \frac{sin^2\,(x)}{x} \qquad (4)\ \lim_{x\to 0} (\,tan(2x)csc(4x))$$

Q6) solve the following system of linear equation by using (grammar rule)

$$3x+y = 3$$
$$2y+z = -1$$
$$2x - z = -2$$

Good Luck