Philadelphia University
Faculty of Engineering
Dept. of Mechatronics Engineering

Student Name:
Student Number:
First Exam, First Semester: 2014/2015

Course Title: Engineering Skills	**Date: 16/04/2015**
Course No: (0640253)	**Time Allowed: 50 minutes**
No. of Pages: 3	
Please choose your lecture	
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A

Question 1: Multiple Choice Question   (8 marks)

1. Which of the following <u>DOES NOT</u> fall into civil engineers roles?
   a) Developing roads
   b) Designing water system
   c) Designing manufacturing tools
   d) Constructing airports

2. The skills below are considered personal skills except
   a) Dependability
   b) Teamwork
   c) Design
   d) Motivation

3. Significant contribution to mechanics and control happened during the:
   a) Industrial age
   b) Ancient age
   c) Middle age
   d) Renaissance age

4. Which of the following is true: an unskilled problem solver
   a) Uncritically believes the calculator answers
   b) Relies on a single reading
   c) Understands the problem befor starts solving it
   d) a+b

5. The ability to challenge assumptions, break boundaries, see in a new way is called
   a) Estimation   b) Creativity   c) Design   d) productivity

6. Motivation, a requirment for problem solving, is
   a) The skill to coordinate activities
   b) Finding a reason to follow through a difficult problem
   c) The process of applying knowledge
   d) The translation of physical problems into mathematical models

7. _____Usually is resolved by reviewing the theory of the problem at hand
   a) Mathematical problem
   b) Design problem
   c) knowledge problem
   d) troubleshooting problem

8. Which of the following behaviors <u>DO NOT</u> describe creative engineers?
   a) Learn from accidents
   b) Have only engineering and physical interest
   c) Have good visualization skills
   d) Makes analogies

Question 2: Short Answers and Lists   (6 marks)

- **list 4 challenges faced by engineers for moon landing mession**   *(2 marks)*

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- **Engineers usualy work in constrains(i.e limited resources) such as:**   *(1.5 marks)*

  o ………………………………………………………………………………..

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- **List the 5 problem solving skills**   *(2.5 marks)*

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Question 3: Problem Solving   (6 marks)

A satellite in circular orbit about the earth, 8347.26 miles from the center of the earth, moves outward 6.1 ft. how much new area is enclosed in its new orbit?   (1mile = 5280 ft).
Follow the problem solving procedure described in the class notes.(*Show your work in details*)