Course No: CIVIL 3219
Course Title: Introduction in sustainability and renewable energy.

Date: 17/1/2017
No. of Questions: (6)

**University of Palestine** 



Final Exam 2016/2017 Total Grade: 50

Instructor	Name:	Eng.	Nael	A
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### **Answer the following questions:**

Question One: mark the following statements as (T) or (F) and <u>correct the mistake</u> (10 marks)

## True $(\sqrt{\ })$ or false (X):

- a. ( ) Sustainability is the nexus of society, the environment, and the economy.
- b. ( ) Solar thermal heating technologies involve harvesting energy from the wind.
- c. ( ) Geothermal energy convert the energy of blowing wind to electricity.
- d. ( ) Waste are classified according to their effects on human health to bio-degradable and non-biodegradable.
- e. ( ) The amount of energy delivered to any place depends only on geographic location.
- f. ( ) Liquid waste is the biologically degradable part of waste.
- g. ( ) Recovery is the use of reclaimed water from one application for another application.
- h. ( ) Production of biodiesel is waste free.
- i. ( ) Wind energy is a non renewable energy.
- j. ( ) The building constructions impact on global warming.

## **Question Two: What is the difference between:**

(12 marks)

Energy Star	Breeam	
Water Recycle	Water Reuse	
Drag design wind turbine	Lift design wind turbine	
Natural lighting	Landfill	

## **Question Three: briefly discuss the following**

(15marks)

- The principles of water conservation.
- Advantages and disadvantages of geothermal energy.
- Leed and its advantages.
- Nuclear fuel cycle.
- Composting & mechanical composting.

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#### **Question four: Draw in details**

(9 marks)

- Wind turbine.
- Passive solar heating system.
- Flat plate collectors.

Question five: (4 marks)

• Designed with drawing green building achieves principles of sustainability.

# (15 marks) (خاص بالطلبة المقبولة اعذار هم للامتحان النصفي الثاني )

- 1- Briefly discuss the following:
  - Biomass energy.
  - Energy efficiency
- 2- What is the difference between Hydropower & Ocean wave power.
- 3- Draw with details the MRF.

## -Good luck-