


<p>Course No: Course Title: Energy systems and architecture Date: 30 /03/ 2011 No. of Questions: 4 Question Time: one and a half Hours Total Grade: 30</p>	<p>University of Palestine</p>  <p>Midterm Exam 2^{ed} semester 2010/2011</p>	<p>Student No.: 27 Students Student Name: _____ Instructor Name: Eng. Emad A. Kandeel College of Applied Engineering- Architecture Department</p>
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Answer the following question:

First Question: (5 marks)

Put (T) or (F) for each of the following:

1. () Construction consumes 55% of the planet resources .
2. () Microclimates can be modified to enhance human comfort levels thereby using less energy.
3. () Re-use is preferable to recycling and recycling is preferable to disposal.
4. () The embodied energy of steel is about 10 times higher than that of concrete.
5. () passive design aim fully eliminate requirements for active mechanical systems
6. () Gaza Strip has approximately (2861) of sunshine hours across the year.
7. () Solar energy can only be harnessed when it is daytime and sunny.
8. () The best tilted angle (β) in Gaza equal 22° .
9. () Landscaping and vegetation, could save up to (35%) of energy consumption in buildings .
- 10.() compact configuration is used to reduce the rate of heat gain through external walls.

Second Question: (5 marks)

Choose the correct answer:

1. Re-use means that the building can be [good ventilation - uses renewable resources- All of the above]
2. Average solar radiation in the Gaza Strip [3.55 kWh/m².Day - 5.33 kWh/m².Day - 4.33 kWh/m².Day].
3. In hot climates, the main streets should be oriented [north–east, north–south, west–east] .

4. In cold areas [exposed - compact- Rectangular] forms are used to regulate the relationship between the solar path and the living space.
5. Passive design aims to improve [thermal properties- thermal comfort- thermal mass] of people and reduce the rate of consuming energy.

Third Question: (10 marks)

Clarify / Identify the following items:

1. Sustainable design.

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2. A Working Definition of LCA.

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3. Effects of Global Warming.

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4. Which is the Greener: Steel or Concrete.

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