

**Q1: Put correct number of meaning near each word:**

A-(.....) Engineer مهندس

B-(.....) Design process عملية تصميم

C- (.....) Prototype نموذج أولي

D- (.....) Constraint قيود

E- (.....) Criteria معايير

1-An original or first model of something from which other forms are developed.

2-Something that limits or restricts someone or something. شيء يحد أو يقيد شخص من الإنجاز.

3-A series of steps that engineers follow to solve a problem. سلسلة خطوات يتبعها المهندسون لحل مشكلة.

4-Someone who designs solutions to problems. شخص يصمم حلول للمشاكل.

5-A standard on which a judgement or decision is based. معيار يعتمد عليه الحكم أو القرار.

**Q2: choose correct answer:**

1- Which method of powering a vehicle will help to reduce air pollution?

a- Using oil

b- Using biofuels

c- Using gasoline

2- How does the solar panel solve a design problem? كيف استطاع تصميم الخلايا الشمسية حل المشكلة؟

a- It transforms energy without producing air pollution.

b- It transforms sunlight energy to wind energy.

c- It uses nonrenewable resources for power.

3- Engineers designing a new energy efficient product will make the first model, called a

a- New type

b- Prototype

c-Modern type

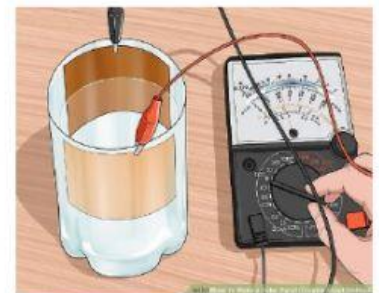
4- Rashed is making a solar cell to provide power using a plastic bottle, copper, and salt water.

What can Rashed test to make her solar cell better?

a-How do additional hours in the sun improve the solar cell?

b-How does humidity in atmosphere improve the solar cell?

c- How does adding more salt to water improve the solar cell?



5-Suppose you connect a solar cell to the connectors of a lightbulb.

Which factor would increase the brightness of the lightbulb?

a-The size of the lightbulb

b- Exposure to full sun

c-Exposure to partial sun

**Q2: What** do a solar panel, a windmill, and a battery have in common? How are they different? ما هو المشترك بين الخلايا الشمسية طواحين الهواء والبطاريات؟ وما هو الاختلاف

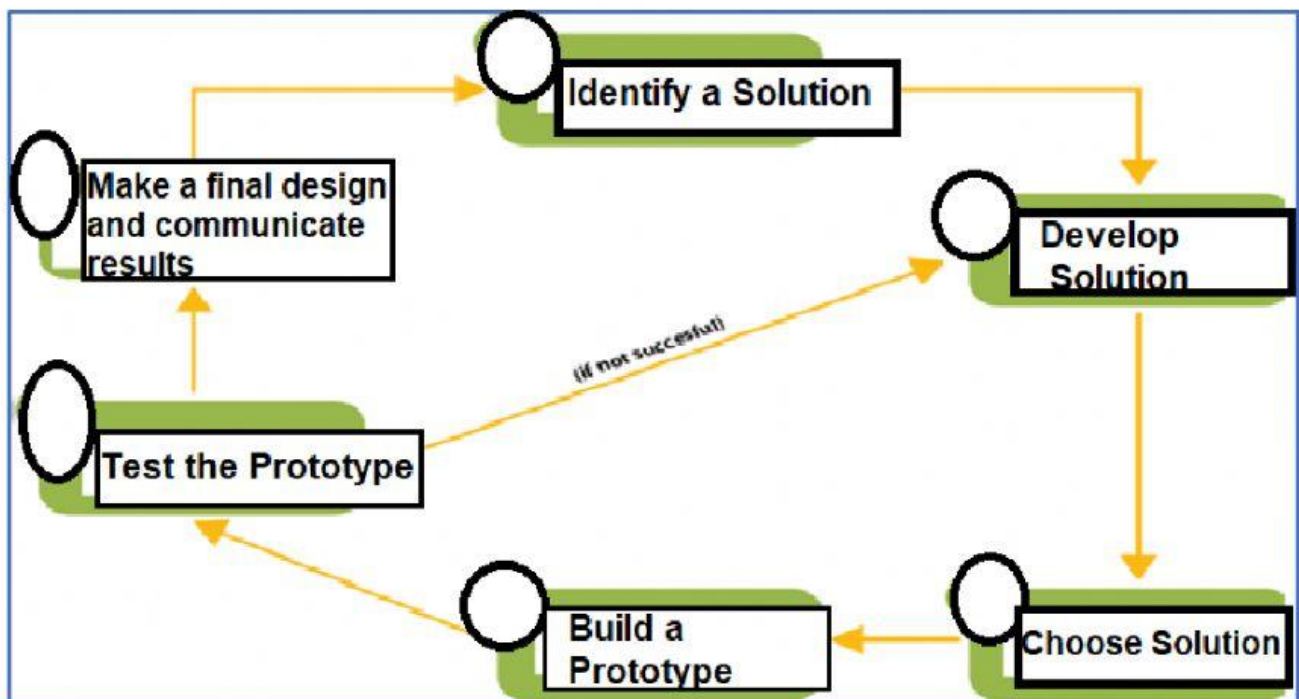
**1- They common in:** يتشابهون All of these convert energy into: **a-Heat** **b- Electricity**

**2- They are different in:** يختلفون All of them convert different types of energy into electricity:

- |                            |                         |                           |
|----------------------------|-------------------------|---------------------------|
| I. A solar panel converts: | <b>a- Light energy</b>  | <b>b- Chemical energy</b> |
| II. A windmill converts:   | <b>a- Store energy</b>  | <b>b- kinetic energy.</b> |
| III. A battery converts:   | <b>a-Kinetic energy</b> | <b>b-chemical energy.</b> |

**Q3: Look in your book page 146** Engineering Design Loop, which help you to answer this diagram below: **Put correct number near each one of loop step on the diagram below:**

اكتب الرقم الصحيح بجوار كل خطوة من خطوات حلقة التصميم الهندسي



**Q4: Label each picture as Problem Or Solution:** 1 is Problem 2 is solution

