



Name: G 4 \ / 3 / 2024

Q1: Page 15 - U2M1L1 **Choose the correct answer** اختر إجابة صحيحة

1 Window with sunlight: (Conduction – Radiation) from the Sun is converted into (heat and light – heat and sound).

2 Teacher talking: transforms (nuclear – chemical) energy from food to : (sound- light) energy.

3 Computer: The : (nuclear- electrical) energy from the laptop is transferred into (light heat and chemical – light heat and sound)

4 Students building a model: converts (nuclear – chemical) energy from food to (kinetic – potential) energy as they use their hands to build the model.



Q2: Page 14 - U2M1L1 -

1- energy: its internal energy of an object due to the kinetic energy of its particles. Thermal energy type of

(Kinetic Or stored energy) choose.



2-.....energy: produced by vibrations its spread in all directions. Sound energy type of (Kinetic Or stored energy) choose.

3- How can people use thermal energy in their home?

a-Turn on the fan

b-Turn on the radio

c- Turn on the stove.

4- A child hitting a drum creates vibrations that produce:

a-Light energy

b- Thermal energy

c- Sound energy



5- When a person plucks the string on a guitar, energy is transferred.

a-Sound energy

b-Thermal energy

c-nuclear energy.



6-A stove, heater and match can all produce:

a-Light energy

b- Thermal energy

c- Sound energy

7- What will happened if you placed metal spoon in a glass of hot soup.

a-Spoon began heating up when they are placed into liquids.

b-Thermal energy is transferred from the soup to the spoon.

c-Heat is created when metals and glasses combine with one another.





Three-Dimensional Thinking

- Which best describes how energy changes in a toaster?
 - chemical to thermal
 - electrical to light
 - electrical to thermal
 - electrical to chemical
- Dan made the following observations in his science notebook:
The radio sitting on the table made the water in my glass move.
 What can he conclude?
 - Some types of energy cannot transfer through water.
 - The sound energy of the radio transferred to the water.
 - The electrical energy of the radio transferred through the water.
 - Only light can move through water.

Energy Transformation	Example
chemical to electrical	battery powered flashlight
light to thermal	sunlight heats the sidewalk
motion to sound	

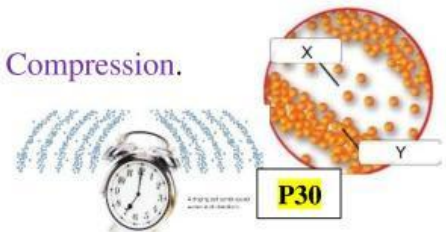
Which example best fits in the last row of the table?

- burning candle heats up
- plucked guitar string makes noise
- ball rolls down hill
- rubbing warms hands

Q4: Figure - Page 30- U2M1L2:

Label X and Y in the picture.: is the **Rarefaction**. is the **Compression**.

..... travel: Outward in all directions from the source.



Q5 and Q6: Page 32- U2M1L2 : **Key concepts : سؤال 5 و 6** Choose the correct answer:

- Evidence that light transfers energy: Can feel (**warmer - cold**) on your face.
- The main source of light energy is The (**Moon – Sun**).
- Device changes light energy to electricity (**Solar – Plant**) cell and Photovoltaic cell.
- Light travels as particles so it can travel in (**solid – space**)
- Light is (**slower – fastest**) in space, (**slower – fastest**) in other mediums.
- Which of the following is the source of solar energy used to produce electricity?

a- Sun b- Air c- water d- Wind.

7- Form of energy allowed you to see objects: **a- Sound b- Light c- Vision d- Heat**

Q 7 and 8: Page 48- U2M1L3 - Choose the correct answer:

1-The (**electric current – Circuit**) : is the flow of electricity through a conductor. تيار كهربائي

2-(**Insulator- Conductor**) : Material through which electricity flows easily. موصل

3-(**Insulator- Conductor**): Material that slow or stops flow of electricity. عازل

4- A (**electric current – Circuit**) The path through which electric current flow.

5- (**Voltage source - Switch**) : it can open or close the path in circuit مفتاح

6- (**Voltage source - Switch**) moves electrical charges particles along. مصدر جهد

7- (**Resistor – Wire**) : allows electrical current to pass easily through. مقاوم

8- Which of the following materials easily flow electricity?

a- Insulators

b- Conductors

c- Resistors

d- Generators

a- Copper

b-Silver

c-Gold

d- Wood.

9- A fan is plugged into an extension cord. The extension cord is plugged into a wall outlet.

How does the extension cord help the fan work?

a-The extension cord makes the fan more powerful.

b-The extension cord makes the fan easier to operate.

c-The extension cord transfers electric currents from the outlet to the fan.

10-A student made the circuit in the drawing below. Which does the student need to add to the circuit to make it work? ؟

a- Another bulb

b-Another battery

c- Another wire.

11- In an electric circuit, a battery can act as a : b-Voltage source c-Insulator d-Resistor

12- In an electric circuit a switch act as:

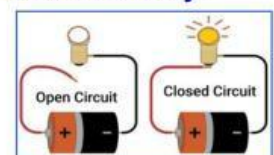
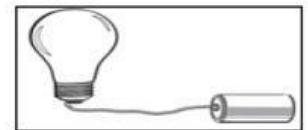
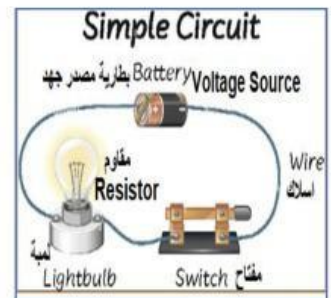
a- acts as an insulator.

b- Keeps the flow of electricity.

c-Allows or stops the flow of electricity.

13- Circuit **Open** means Light (work/ Not work).

14-Circuit **Close** means Light (work/ Not work).



Q 9: Figure Page 69 - U2M1L4 Write, Choose the correct answer

1- When the two blocks are pushed together, energy will flow from the TO the block.

2-Thermal energy moves from **block** with a..... temperature to

block with a..... temperature:

a- Higher - Lower

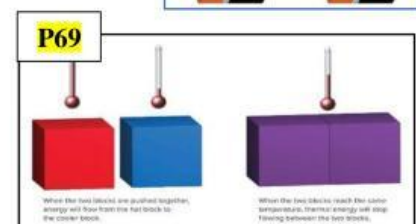
b-Lower- Higher.

3- What will happen to the thermal energy when the two blocks reach the same temperature?

a-Keep moving.

b- Stope flowing.

c- Nothing change.



Q 10: Figure Page 71 U2M1L4 -Choose the correct answer:

1- (**Mixing – Friction**) between the match head and the surface produces enough heat to light the match.

2- **Incandescent** light transfer most electrical energy in to (**Heat – Light**)

3- **LED light** transfer most energy electrical into (**Heat – Light**)

4- Tack the answer from the picture:

a- What is the percentage of light in LED.....

b- What is the percentage of light in Incandescent

c- In LED the percentage of is 9%.

But in the incandescent the percentage of heat is

d- I prefer to use at home or school the (**Incandescent light – LED light**). WHY?

Because the LED gives more and less

Q 11: Page 74- U2M1L4 Choose the correct answer:

1- Arrange the speed of thermal energy transfer from fastest to slowest: رتب سرعة الحرارة: (.....) Convection, (.....) Radiation, (.....) Conduction.

2- Ability of a material to transfer heat. Like metals: **a- Thermal insulators** **b- Thermal conductivity.**

3-The best material can be thermal conductivity is: **a- Wood** **b- Matels** **c- Air**

4- The thermal conductivity increases with density what the correct order:

a- Solids -liquids – gas **b- Liquid – gas – solid** **c- Gas- liquid – solid.**

5- A material that conduct heat poorly: **a- Thermal insulators** **b- Thermal conductivity**

6- The Air, wood, brick, water, plastic, silicon are good:

a- Thermal insulators **b- Thermal conductivity**

Q 12: Page 97 - U2M2L1 Choose the correct answer:

1. We cannot make (**Food – Energy**) , but we can change it.

2. The chemical energy from (**water- Food**) changes in our body to movement when we run.

3. The chemical energy in a car change to energy of (**motion- stored**) energy.

4. The energy change in a microwave from Electrical energy to (**Sound- Heat**).

5. The batteries stored (**heat – chemical**) energy.

6. The energy change in a circuit with a battery: From potential to (**Electric- Chemical**) .

7- The energy change in a wind-up toy: From potential to (**kinetic – Heat**).

8- Lightbulb give change the electrical energy into.

a- Light energy

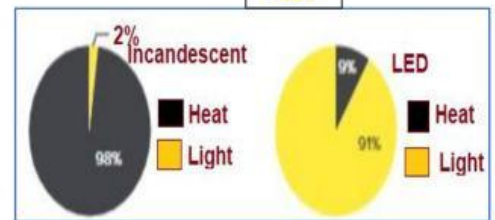
b- Sound energy

c- Light and thermal energy.

figure1 صورة



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Q13: Figure Page 110 - U2M2L2

1-The energy is shown in this picture is: **(Renewable – Nonrenewable)** energy. **(Biomass – Coal)** .

2-Renewable resource: Can be **(Not replaced - replaced)** in a short time.

3-Examples of **(Biomass – Coal)** resources: Trees, Wood, crops and animals.

4-**(Renewable – Alternative)** energy resources: source of energy other than burning fossil fuel. **Like: Solar, wind energy, hydroelectricity, geothermal, biomass and nuclear power.**

5- **(Biomass – Coal)** Energy we can get from plants or living things.

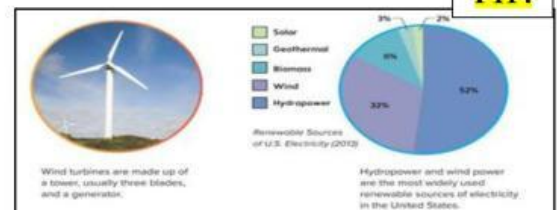
6- **(Biofuel- Fossil fuel)** fuel made from biomass, or living or formerly living martials.

7- **Wood can be use as(Biofuel- Fossil fuel)** .

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Q14: Figure Page 114 - U2M2L2:

1- Wind turbine transforms the motion energy of to?

a-Electrical to wind b- Wind to electrical

2- Wind, moving water, Solar energy, and geothermal all are:

a-Nonrenewable b-

Renewable c- Fossil fuel d- Free energy.

3- Circle 3 example of **Biomass**:

a-Wood b-Fuel c- Crops d- Animals waste e-Coal

4- Fuel made from biomass, or living or formerly living martials.

a- Windmills c-Biofuel c- Hydropower d- Solar power

5- Biomass conversion generates energy from

a- Plant and animals b- Running water c- Sunlight d- Moving air.

6- Solar, Geothermal, hydropower and wind are renewable resources that produce:

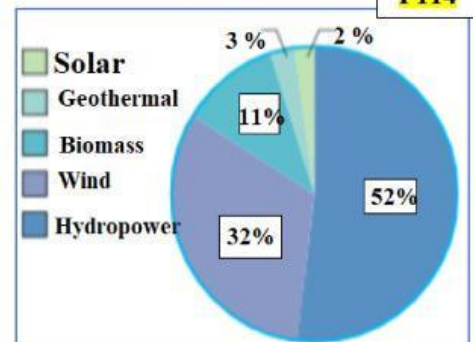
a-Electricity b-Nuclear c- Fuels d- Gas

7-Choose two renewable resources that mostly used to produce electricity? **(Wind – Solar – Hydropower)**

8-What is the percentage of electricity generated from **Solar** energy? **(11 % - 2 % - 32 %)**

9- The percentage of Biomass is the percentage of Solar and wind together are

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من سؤال 15 تبدأ الأسئلة المقالية أى الكتابية FRQ

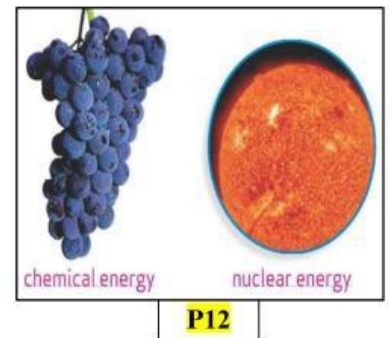
Q 15: Page 129 - U2M2L3

1. Habitat loss is when animals lose their
2. Which activities lead to habitat loss? ما هي الأنشطة التي تسبب فقدان البيئات?
.....
3. Which activity causes disruption to fish? ما هي الأنشطة التي تسبب اضطراب الاسماك?
.....
4. Which activity causes disruption to birds? ما هي الأنشطة التي تسبب اضطراب الطيور?
.....
- 5- How can burning fossil fuel affect the environment? كيف يمكن ان يؤثر حرق الوقود الأحفوري على البيئة?
.....
- 6- What has been cleared away in this strip-mining operation? ما الذي تم ازالته في عمليات التعدين-تمهيد الطرق؟
.....

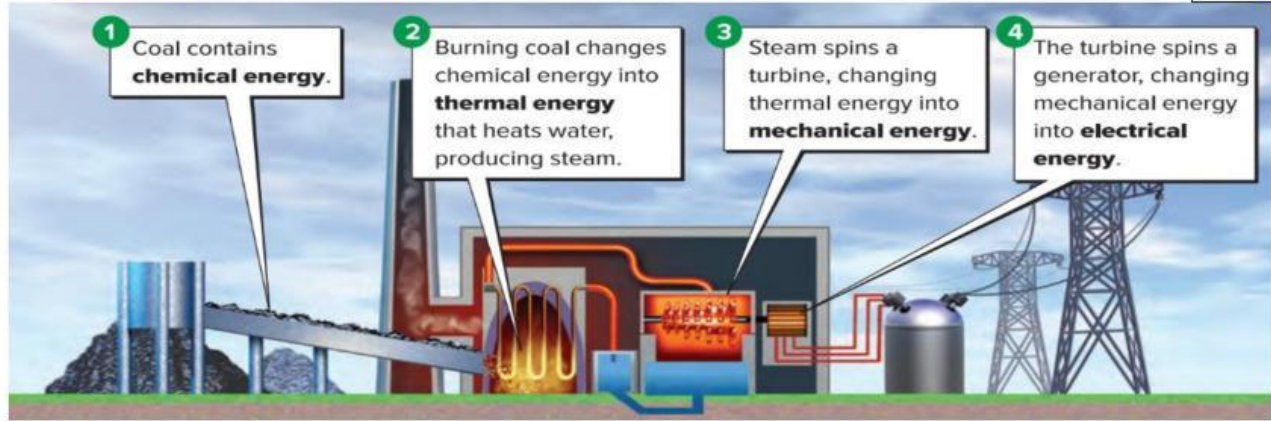
Q 16: Figure - Page 12 U2M1L1

- 1- it's released when links between particles are broken or created.
- 2-The links store energy that can released by
..... so the energy change from stored energy to energy of (kinetic energy).

3- Example: A-
B-.....



- 4- released when links between particles that makeup matter are broken. By the particles spilt and release this energy.
- 5- Example: A-
B-.....
- 6- Chemical energy and nuclear energy are energy. Both are stored in links between particles.



1- Circle the nonrenewable energy resource. حدد مصدر الطاقة الغير متجدد على الصورة

2- What converts the energy to electrical energy? ماهي الطاقة التي تتحول الى طاقة كهربائية؟

3- In (1) The coal contain energy.

4- In (2) Burning change the energy into
Energy, that heat producing

5- In (3) Steam spins a changing thermal energy into
Energy.

6- In (4) The turbian spins a changing mechanical energy into
..... energy.

Figuer 2:

1- What resource is being removed?

2- Choose the resource: **a- Renewable** **b- Nonrenewable**

3-Write other fossil fuels: 1- 2-

4- Thick, black substance called Petroleum: **a -Gas** **b-Coal** **c- Oil**

5- People used Oil to: : Put circle: ضع دائرة:

(**Turned into gasoline – Cook food – Generate Electricity- Heating Home**).

6- Nonrenewable resources are resources that:

P95 Crude oil خام نفط



Q 18: Figure Page 132 - U2M2L3

1- The act of saving, protection or using resources wisely



2- What is energy conservation? ماهي المحافظة والصيانة

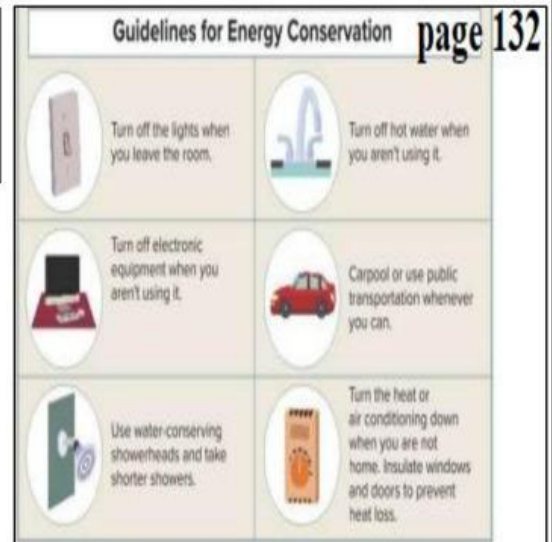
3- What are the 3 R's ?

4- Write examples that can be conserve them by

Reduce them: امثلة على تقليل الاستخدام

5- Write example of materials can be **Recycled or Reused:** امثلة على اعادة الاستخدام و التدوير

6- What are some ways people can conserve resources?



Q 19: Figure Page 70 U2M1L4:



1- Label the processes above. اكتب طرق انتقال الحرارة على الصورة

2- What type of energy is transferred? ما هي الطاقة المنتقلة

3- **Convection** is the transfer of energy in moving and

4- **Coduction** is the transfer of energy between two objects that are touching.

5- **Radiation** is the energy that come from a in form of or particles.

Q20:Figure Page 50 2M1L3

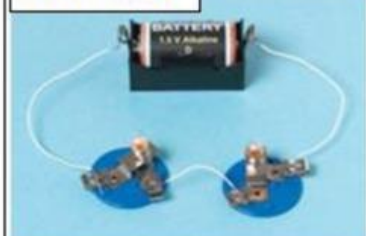
1- What type of circuit is circuit A and B?

A is circuit.

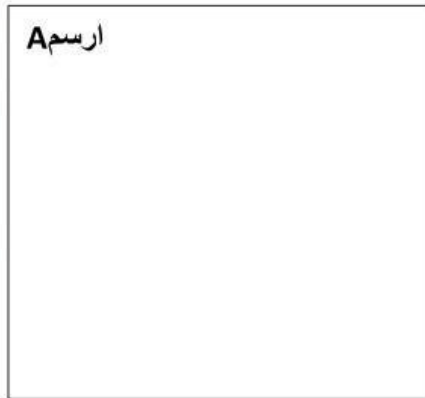
B is circuit.

2- Draw circuit diagrams for circuit A and B in the box near each one:.

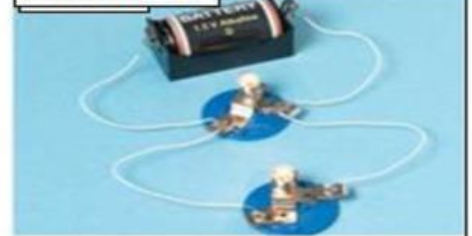
Circuit A



أرسم A



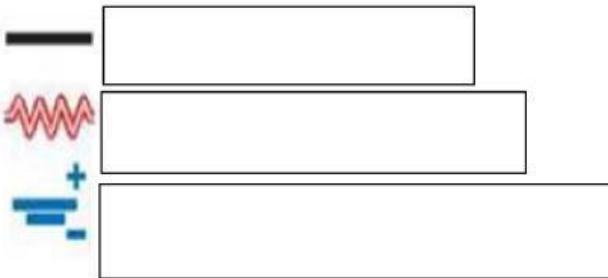
Circuit B



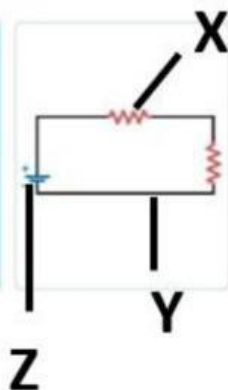
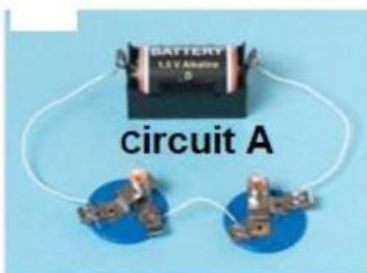
أرسم B



3- Label the symbols.



4- A. Identify the electric circuit



1- Label the letter (X)

2- Label the letter (Y)

3- Label the letter (Z)

.....

مع تمنياتي القلبية لكم بالتوفيق والنجاح.. الاستاذة: أروى المصعبي

With my heartfelt wishes for you of success ...

Ms. Arwa Almussabi ☺