Science

Prep.1

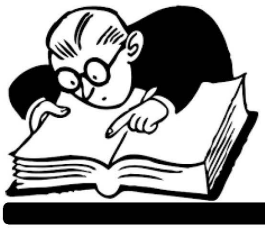
First Term 2023 -2024

November Revision

Mr. Ahmed Elbasha

Unit Two

*** طبقاً لأخر تعديل في المادة للعام الدراسي 2023-2024**



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(1) Write the scientific term:

1)	The way by which the heat is transferred throw gasses and liquids.	(.....)
2)	The sum of potential energy and kinetic energy.	(.....)
3)	The stored energy in an object due to the work done on it.	(.....)
4)	It is a form of energy which transfers from a higher temperature object to a lower temperature object.	(.....)
5)	The measuring unit of energy	(.....)
6)	Ability to do work or to make a change.	(.....)
7)	The heat state of an object on which the transfer of heat from or to the object depends	(.....)
8)	Energy stored in the object due to the work done on the object.	(.....)
9)	The work done during the motion of an object.	(.....)
10)	It is a permanent resource of energy.	(.....)
11)	The sum of potential and kinetic energies of a body.	(.....)
12)	Energy is neither created nor destroyed, but it is converted from one form to another.	(.....)
13)	A device changes solar energy to electric energy.	(.....)
14)	the transfer of heat from hot object to another without any need for a material medium through which heat transfers.	(.....)
15)	It is the ability to do work or to make a change.	(.....)
16)	Energy stored in the object due to the work done on the object.	(.....)

✹(2) Choose the right answer:

1.In solar heater, solar energy is converted into ..... energy.

a. light b. electric c. heat

2.Chemical energy can be stored in .....

a. car battery. b. raising a load up wards.

c. stretched spring. d. car lamps.

3.An object of 20 N. weight and it is placed at a height of 5 m. , so its potential energy is ..... joules.

a. 50 b. 150 c. 100 d.200

4.If you sit down beside an electric heater, heat is transferred to you by .....

a. convection. b. radiation. c. conduction. d. convection & radiation.

5.Heat transfers from Sun to Earth by .....

a. convection. c. conduction.

b. radiation. d. conduction and convection.

6.In car engine, ... energy of the fuel is changed into heat and mechanical energy.

a. chemical b. electric c. light d. solar

7..... is a permanent source of energy.

a. Wind b. Fuel c. Food d. The Sun

8.Electric energy is converted into sound energy in .....

a. car battery . b. car lamps. c. radio cassette. d. pendulum.

9.Dynamo converts mechanical energy into energy .....

a. electrical b. nuclear c. solar d . chemical

10..... is a permanent source of energy

a. Wind b. Coal c. The Sun d . Water

11.The Sun is .....

a. resource of permanent energy. b. resource of non-permanent energy.

c. not an energy resource. d . (a) and (c).

12.In the radio cassette inside the car the .....

a. electric energy is converted into mechanical energy.

b. light energy is converted into heat energy.

c. electric energy is converted into kinetic energy.

d. electric energy is converted into sound energy.

13.Heat is transferred by convection through .....

a. liquids only . b. gases only . c. solid only. d. liquids and gases.

14.Heat transfers through liquids by .....

a. conduction. b. convection.

c. radiation. d. convection and radiation.

15.Heat transfers from Sun to Earth by .....

a. conduction. b. convection. c. radiation. d. no answer.

16.When the object is throw upward the ..... of object decreases.

a. mass b. heat c. potential energy d. kinetic energy

17.Heat transfer by radiation takes place through .....

a. liquids only. b. gases only.

c. material media and nonmaterial ones. d. metals only.

18.Heat transfers by ..... through liquid and gas.

a. conduction b. convection c. radiation d. no correct answer

19.The electric lamp changes the ..... energy into light and heat energy.

a. sound b. electric c. mechanical

20.Car engine changes at first chemical energy to ..... energy.

a. heat b. electric c. magnetic d. light

21.An object of weight 6 newton, moved to a height 5 m, its potential energy is .....

a. 30 b. 75 c. 11

22.In the solar cell. the solar energy is converted into ..... energy.

a. kinetic b. light c. electric d . heat

23.Dynamo converts mechanical energy into ..... energy.

a. electric b. nuclear c. solar

✹(3) Complete the following :

1. Heat is carried from the electric heater to our body by ..... and .....
2. Heat is transferred in gases by ..... , while transferred in solids by .....
3. Kinetic energy increases by increasing ..... and ..... of the object.
4. The networks of wireless transmitters of cellular phones cause ..... pollution but car exhaust causes ..... pollution.
5. Heat is transferred through liquids by ..... , while through space by .....
6. In the dynamo, ... energy changes into ..... energy.
7. Heat is transferred through air by ..... and .....
8. Mechanical energy = ... + ...
9. When a body raised up, the potential energy ..... , while the kinetic energy.....
10. The heat transfers by convection through ..... and ..... materials.
11. In the simple electric cell, ... energy is converted into ..... energy.
12. The pendulum can convert potential energy into ..... energy.
13. ..... is the way of transferring heat through space.
14. ..... is the sum of potential and kinetic energy
15. In dry electric cell, ... energy changes into ..... energy.
16. In solar cell, ... energy changes into ..... energy.
17. The potential energy of an object depends on ..... and .....
18. When an object is launched upwards. its speed .....
19. In the simple cell, ... energy changes into ..... energy.
20. Friction turns kinetic energy into ..... energy.
21. Kinetic energy = $\frac{1}{2}$ x ..... x .....

✹(4) Correct the underlined words:

1	The solar cell changes the solar energy into **heat** energy.	(.....)
2	Heat is transferred from the Sun to the Earth by **convection** .	(.....)
3	**Kinetic** energy is stored in the object due to a work done on it.	(.....)
4	Measuring unit of weight is **joule**.	(.....)
5	**Electric energy**= Potential energy+ Kinetic energy.	(.....)
6	**Wind** is a permanent source of energy.	(.....)
7	Transfer of heat by **conduction** does not need a material medium.	(.....)
8	The networks of cellular phone cause **noise** pollution.	(.....)
9	**Copper** rode is the negative pole in the simple electric cell .	(.....)
10	The mechanical energy is the sum of **heat** energy and **light** energy.	(.....)
11	Heat is transferred through the space by **conduction**.	(.....)
12	Heat transfers through solids by **convection**.	(.....)
13	Friction turns the mechanical energy into **magnetic** energy.	(.....)
14	The kinetic energy **decreases** by increasing the mass and speed of objects.	(.....)
15	Resource of permanent energy is **nuclear energy.**	(.....)
16	In solar cell the solar energy is changed into **magnetic** one.	(.....)
17	In simple cell the positive pole is a rode of **zinc**.	(.....)

✹(5) Give reason for:

1.The motion of the children's swing is like that of the pendulum.

.....

2.Technology has negative effects in the environment.

.....

3.The freezer is found at the top of fridge.

.....

4.Heater is put at the bottom of the room.

.....

5.Solar heater is preferred to gas heater.

.....

✹(6) What happen if:

1. An object is thrown upwards.

.....

2. Doubling the weight of an object (concerning its potential energy).

.....

3. Friction of the bicycle wheels to a rough surface.

.....

4. Doubling the height of an object (concerning its potential energy).

.....

5. Dipping two different metals connected by copper wire in an acidic solution.

.....

6. Rubbing your hands together.

.....

✹(7) Put (√) or (X) :

1. In solar cells, the solar energy is converted into heat energy. ( )
2. Temperature is directly proportional to the kinetic energy of particles. ( )
3. Work done = Force x Displacement. ( )
4. In the electric cell, the electric energy is converted into chemical energy. ( )
5. The fuel inside the car is similar to the food inside the body of a living organism. ( )
6. Heat is transferred in solid materials by radiation. ( )
7. When air is cooled, density decreases, so it falls down. ( )
8. In solar cells, the solar energy is converted into heat energy. ( )
9. In car lamps, electric energy changes into light energy. ( )
10. Heat is transferred through solids by conduction. ( )
11. In solar cells, the solar energy is converted into heat energy. ( )
12. Friction turns mechanical energy to electric energy. ( )
13. The transfer of heat through copper is by conduction. ( )
14. Chemical energy can be stored in stretched spring. ( )
15. Fuel in a car as food for a man. ( )
16. The measuring unit of potential energy is the joule. ( )
17. In the car dynamo electric energy is changed into kinetic energy. ( )
18. Potential energy of an object decreases by increasing its height. ( )

✹(8) What is the function (use) of ... ?

1. Simple electric cell.

.....

2. Car dynamo

.....

✹(9) Problems:

1

Find the weight of an object its mass 50 kg, knowing that the Earth's gravitational acceleration is 9.8 m/sec^2

.....

.....

.....

2

Draw a diagram to show the simple electric cell.

.....

.....

.....

.....

.....

.....

3

A ball was launched upwards and vertically at a speed 3 m/sec. up to a height 4m. **Calculate the mechanical energy** (work done) of the ball if its weight is 5 newton and has a mass of 0.5 Kg.

.....

.....

.....

.....

.....

.....

4

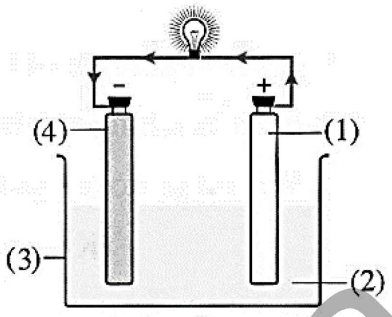
Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Wind generator	a. is a source of nuclear energy.
2. Radio cassette	b. is a source of heat energy.
3. Electric lamp	c. is a source of electric energy.
4. Oven	d. is a source of light energy.
	e. is a source of sound energy.

1. **2.** **3.** **4.**

5

From the opposite figure answer the following questions :



1. Mention the name of the opposite device.
2. Label the fig.
3. Mention the idea of its operation.

.....

.....

.....

.....

6

State the energy transformation in each of the following :

1. Dynamo. 2. Electric lamp. 3. Motor. 4. Electric bell.

.....

.....

.....

.....

.....

7

Calculate the potential energy of an object its weight is 20 N., placed at 5 m height from the ground.

.....

.....

.....

.....

8

Calculate the potential energy of an object of weight 50 newtons that placed at height 5 meters.

.....

.....

.....

.....

Model Answer

(1) Write the scientific term :

1. Convection
2. Mechanical energy
3. Potential energy
4. Heat energy
5. Joule
6. Energy
7. Temperature
8. Potential energy
9. Kinetic energy
10. Sun
11. Mechanical energy
12. Conservation law of energy
13. Solar cell
14. Radiation
15. Energy
16. Potential

(2) Choose the right answer:

1. C	6. B	11. A	16. D	21. A
2. A	7. D	12. D	17. C	22. C
3. C	8. C	13. D	18. B	23. A
4. D	9. A	14. B	19. B	
5. B	10. C	15. C	20. A	

(3) Complete the following :

1. Convection – radiation
2. Convection – conduction
3. Mass – speed
4. Electromagnet – chemical
5. Convection – radiation
6. Kinetic – electric
7. Convection – radiation
8. Kinetic + potential
9. Increase – decrease
10. Liquid – gas
11. Chemical – electric
12. Kinetic
13. Radiation
14. Mechanical energy
15. Chemical – electric
16. Solar – electric
17. Weight – height
18. Decrease
19. Chemical – electric
20. Heat
21. $M * V^2$

(4) Correct the underlined words:

1. Electric
2. Radiation
3. Potential
4. Newton
5. Mechanical
6. Sun
7. Radiation
8. Electromagnetic
9. Zinc
10. Kinetic – potential
11. Radiation
12. Conduction
13. Heat
14. Increase
15. Sun
16. Electric
17. Copper

(5) Give reason for:

1. Because in both of them, the potential energy and kinetic energy are interchanged
2. Because some of technological applications cause environmental pollution as Electromagnetic pollution, Noise pollution. and Chemical pollution of air, water and soil.
3. Because when air is cooled, its density increases, so it falls down to cool the food in the refrigerator (or the room) and the hot air rises up to be cooled again and so on
4. Because when air around the heater is heated its density decreases so it rises up to warm the room, while the cold air falls down to be heated again and so on.
5. Because solar energy is a clean source of energy which doesn't pollute the environment

(6) What happen if:

1. Its potential energy increases
2. Its potential energy is doubled
3. The mechanical energy changes into heat energy by friction
4. Its potential energy is doubled.
5. An electric current flow through the wire.
6. The mechanical energy changes into heat energy by friction

✹(7) Put (√) or (X) :

1. (X)	5. (√)	9. (√)	13. (√)	17. (X)
2. (√)	6. (X)	10. (√)	14. (X)	18. (X)
3. (√)	7. (X)	11. (X)	15. (√)	
4. (X)	8. (X)	12. (X)	16. (√)	

✹(8) What is the function (use) of ... ?

1. To convert chemical energy into electric energy
2. To convert kinetic energy into electric energy

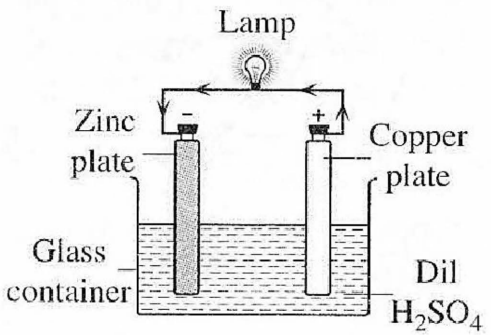
✹(9) Problems :

1

Weight = Mass × Acceleration due to gravity

$= 50 \times 9.8 = 490$ newton

2



3

1. Kinetic energy $= \frac{1}{2} \times$ Mass $\times$ (Speed)^2

$= \frac{1}{2} \times 0.5 \times (3)^2$

$= 2.25$ joule

Potential energy = Height × Weight

$= 4 \times 5 = 20$ joule

Mechanical energy = Potential energy + kinetic energy = 20 + 2.25 = 22.25 joule

4

1. c 2. e 3. d 4. b

5

1. Simple electric cell.
2. (1) Copper plate.
   (2) Dil. sulphuric acid.
   (3) Glass container.
   (4) Zinc plate.
3. It converts the chemical energy into electric energy.

6

1. Kinetic energy is transformed to electric energy.
2. Electric energy is transformed to heat and light energies.
3. Electric energy is transformed to kinetic energy.
4. Electric energy is transformed to sound energy.

7

Potential energy = Weight × Height

$= 20 \times 5 = 100$ joules

8

Potential energy = Weight × Height

$= 50 \times 5 = 250$ joules