NAME_____ MAXIMUM MARKS:

CLASS 4/_____

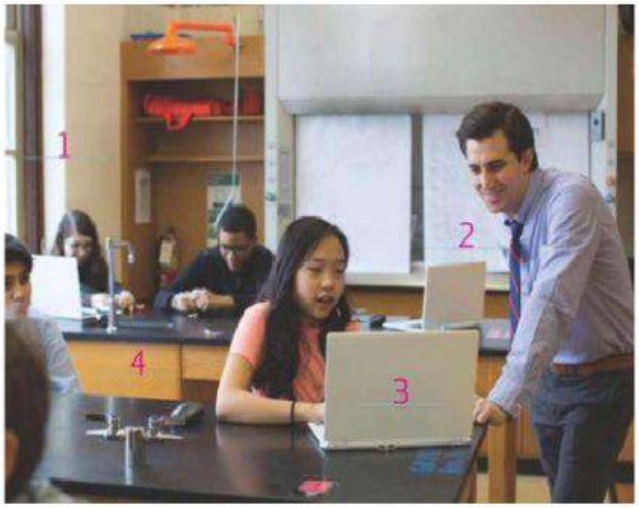
1. **Classify the following types of energy.**

Light/Sound/Chemical/ Thermal/Electrical/ Nuclear

Stored energy	Energy of motion

2. **Label the picture with correct type of energy.**

3.



Label the type of energy in this picture:

1. _____
2. _____
3. _____
4. _____

4.

Object	Name	Energy transfer or energy transformation	Object
	Windup toy		
	Pom Pom launcher		
	Dropped ball		
	Marbles		

5. **Which best describes how energy changes in a toaster?**

a. Chemical to thermal
b. Electrical to light
c. Electrical to thermal
d. Electrical to chemical

6. **Dan made the following observation in his science notebook.**
The radio sitting on my table made the water in my glass move.
What can he conclude?

a. Some types of energy cannot transfer through water.
b. The sound energy of the radio transferred through the water.
c. Electrical energy of the radio transferred through the water.
d. Only light can move through water.

7. **Which is the correct example of motion to sound?**

a. Burning candle heats up.
b. Plucked guitar string makes noise.
c. Ball rolls down the hill.
d. Rubbing warm hands.

8. **For a flashlight to turn on, chemical energy from the batteries changes to electrical energy that flows to the lightbulb. The lightbulb changes electrical energy into light energy. What is this an example of?**

a) energy transformation
b) energy exchange
c) energy being created
d) energy being destroyed

9. **Fill in the blank:**
A child hitting a drum creates vibrations that produce _____ energy.

10. **Energy is transferred from the Sun to Earth through _____and _____ energy.**

a) Light and thermal
b) Electrical and sound

11. **Electrical energy is transferred when an iron is plugged into an outlet. What type of energy does the electrical energy become?**

12. **Identify the statement that correctly explains what happens when energy transfers in a system.**

a) About 75% of the energy is transferred, while the rest is destroyed.
b) All the energy is transferred in different amounts to different forms.
c) Half of the energy is transferred in different amounts to different forms.
d) Some of the energy gets transferred, while a portion is lost along the way.

13. **Thermal energy is:**

a) the internal energy of an object due to the kinetic energy of its particles
b) the external energy of an object due to its potential energy
c) the internal energy of an object due to the stored energy of its particles
d) the external energy of an object due to its exposure to the Sun

14. **When a person plucks the string on a guitar, _____energy is transferred.**

15. **Which statement is true?**

a) A lamp changes heat energy to electrical energy.
b) A lamp changes light energy to electrical energy.
c) A lamp changes electrical energy to light and heat energy.
d) You cannot change energy from one form to another.

16. Frank placed a metal spoon in a glass bowl of hot soup. He then went back to get crackers.
When he touched the spoon, he was surprised to find that it was hot. Frank knew that the spoon was not hot when he put it in the soup.
Which sentence best explains how this happened?

a) The radiation from the microwave bounced onto the spoon.
b) Spoons begin heating up when they are placed into liquids.
c) Thermal energy is transferred from the soup to the spoon.
d) Heat is created when metals and glasses combine with one another

17. Dolphins communicate using special vibrations and sounds. How is this possible?
a) Dolphins have very good hearing.
b) The energy can flow easily through water.
c) Dolphins make loud sounds only other dolphins can hear.
d) The energy is transferred from one dolphin to another through sound.

18. A pom-pom launcher _____
a) transfers kinetic energy to thermal energy
b) transforms kinetic energy to sound energy
c) transforms stored energy to energy of motion
d) transfers energy of motion to stored energy

19. When a student plays a guitar, how does the sound travel to reach your ears?
a) using echos
b) through potential energy
c) through thermal energy
d) through sound waves

20. Light travels in a _____path.
a) Curved
b) Straight
c) Random
d) Zigzag

21. Why are sounds not heard in space?
a) Space is too cold for sound waves to travel.
b) There is too much matter to travel through in space.
c) Space is a vacuum with few particles to travel through.
d) Energy cannot travel in space.

22. Sound waves cannot travel through_____space.

23. Which is the best description of how sound waves travel?

a) in a straight path to your ear
b) back and forth from the source
c) outward in all directions
d) upward from the source

24. How are sound waves and states of matter (solid, liquid, gas) related?

a) Sound waves cannot travel through any states of matter.
b) Sound waves can travel through all three states of matter.
c) Sound waves can travel through solids, but not gasses or liquids.
d) Sound waves can travel through liquids, but not solids or gasses

25. A boy, who was at a very loud motorcycle race, said he could feel the motorcycles vibrate his body, even though he was not touching them. How is this possible?

a) The noise was too loud for the boy.
b) The boy was sitting very close to the motorcycles.
c) The energy was transferred to the boy's body through sound.
d) The motorcycles sent electrical currents through the boy's body.

26. Astronauts in space cannot talk to each other unless they use a radio to speak back and forth. Why is this?

a) The air is too thick to carry sound waves efficiently.
b) The force of gravity is too strong to allow sound waves to travel.
c) There is no air in space, so there is no medium to carry sound waves.
d) It is very loud in space, so they can only hear each other through a radio.

27. A fire truck's siren and flashing lights are examples of _____ and _____ energy. Choose two answers.

a) heat
b) light
c) sound
d) chemical

28. Sound _____travel through outer space. (can/ cannot)

29. To stop a drum from producing sound, you would _____.

a) hit it harder
b) hit it softer
c) stop it from vibrating
d) place it in water

30. How does sound energy travel?

a) in strings
b) in beams
c) in pulses
d) in waves

31. A form of energy that allows you to see objects is _____.

a) heat
b) light
c) solar energy
d) vision

32. What is the difference between sound and light energy?

Ans. _____

_____

33. Sound energy is a type of:

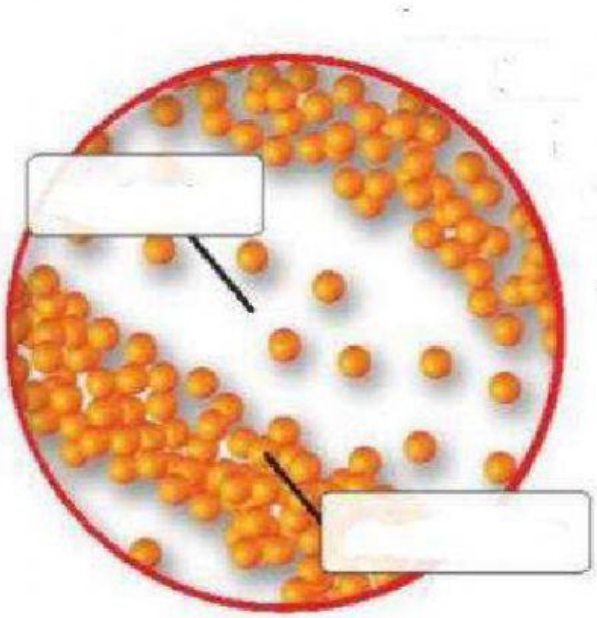
a) Stored energy
b) Infrared energy
c) Energy of motion
d) None of the above

34. How can light energy solve real life problems?

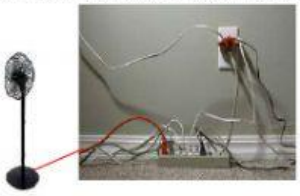
Ans: _____

_____

35. Label compression/ rarefaction in the given picture:



36. 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?

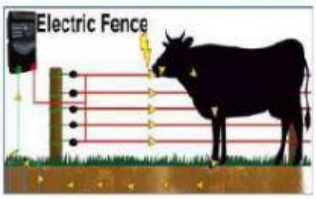


a) The extension cord makes the fan more powerful.
b) The extension cord makes the fan easier to operate.
c) The extension cord transfers sound energy to the fan.
d) The extension cord transfers electric currents from the outlet to the fan.

37. A flow of electrical charges is known as _____.

a) resistance
b) electrical current
c) insulator
d) voltage

38. An electric fence used to contain cattle works by transmitting energy through a conductor creating an electric _____



a) Light
b) Sound
c) Current

39. In an electric circuit, a battery can act as a _____.

a) voltage source
b) conductor
c) insulator
d) resistor

40. A conductor is a_____.

a) a material that increases the number of charged particles
b) material that increases the amount of electricity
c) material through which electricity flows easily
d) material that stops the flow of energy

41. You are asked to design a product that will change electrical energy to heat energy. Choose the item you would research while developing your product.

a) Hair dryer
b) Alarm clock
c) Ceiling fan
d) Cell phone

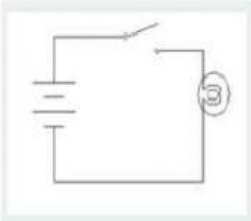
42. A switch in a circuit _____.

a) acts as an insulator
b) absorbs electricity
c) allows or stops the flow of electricity
d) keeps the flow of electricity at a safe level

43. An object in an electrical circuit that resists the flow of energy is called _____.

a) a magnet
b) a compass
c) a voltage
d) a resistor

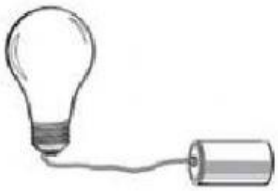
44. Will the light bulb in this circuit light and why/why not?



a) no, because the switch is open
b) yes, because it has two batteries
c) no, because the bulb is burned out
d) yes, because it is in a circuit

45. The path along which electrical current flows is called a(n)_____.

46. 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) a switch
d) another wire

47. A _____ is a material that stops or slows the current.

a) Conductor
b) Insulator
c) Battery
d) Flashlight

48. A farmer needed to keep his baby chicks warm. He placed a light in their cage. Which sentence best explains the farmer's thinking of placing a light in the cage?

a) The farmer thought the light would transfer thermal energy to the chicks' cage.
b) The farmer thought that the chicks would be healthier if they were not in the dark.
c) The farmer thought that the chicks would eat more to stay warm if they can see their food.
d) The farmer thought that the light would encourage the chicks to huddle together to keep themselves warm.

49. A _____transfers heat easily. (conductor/insulator)

50. You are watching fireworks on the fourth of July. When the fireworks are set off, they give off three forms of energy. Which three forms of energy are given off?

a) light, sound, electrical
b) light, sound, heat
c) sound, electrical, mechanical
d) heat, mechanical, electrical

51. In the image, what evidence can you gather to prove that energy is being transferred?

a) The smoke shows that the grill is transferring heat energy to cook the food.
b) The smoke shows that the grill is transferring sound energy to cook the food.
c) The smoke shows that the grill is transferring electrical energy to cook the food.
d) The smoke shows that the grill is transferring mechanical energy to cook the food

52. It is very hot outside, and you walk barefoot on hot pavement. Predict what will happen in this scenario.

a) The transfer of heat energy from the pavement will cause your feet to feel hot.
b) The transfer of light energy from the pavement will cause your feet to feel hot.
c) The transfer of light energy from the pavement will cause your feet to feel cold.
d) The transfer of heat energy from the pavement will cause your feet to feel cold

53. _____is an excellent thermal conductor because it conducts heat easily.

a) Wood
b) Plastic
c) Aluminum

54. How does heat travel from the Sun to Earth?

a) conduction
b) convection
c) radiation
d) conduction and convection

55. A classroom has a tropical fish tank. The students notice that the tank has a light in it.

The teacher says the light is to keep the fish warm. Which sentences best explain how the light keeps the fish warm? Select all that apply.

a) The light transfers energy to the water.
b) The light makes it easier to see in the tank.
c) The light helps keep the tank clean for the fish.
d) The light's energy provides food for plants in the tank.
e) The light's energy increases the temperature of the water.

56.