

Energy, Power, & Mechanics Name _____

1) What is the difference between a renewable and non renewable energy source? Answer in complete sentences. (Session 1)

Match the following with the correct type of resource: Renewable, or Nonrenewable (SESSION 1)

- | | |
|----------------------|------------------|
| 2) _____ Wind | A) Non-Renewable |
| 3) _____ Solar | B) Renewable |
| 4) _____ Coal | |
| 5) _____ Geothermal | |
| 6) _____ Biomass | |
| 7) _____ Natural Gas | |
| 8) _____ Hydropower | |
| 9) _____ Oil | |

10) What is the source of Geothermal energy? (SESSION 1)

- A) Earth
- B) Wind
- C) Fire
- D) Ocean

11) Which of the following can neither be created nor destroyed? It can only be changed from one form to another? (Hint this is the law of conservation of energy) (RCA 2)

- A) Life
- B) Power
- C) Energy
- D) Work

12) What is the definition of Focus? (Look inside the student dictionary and use definition number 6) (RCA 2)

13) Wind energy has the ability to power homes. One turbine can power up to _____ homes annually. (SESSION 2)

14) Mechanical Advantage is the ability to move a large resistance with a small effort. If False, What is the correct answer? (RCA 3)

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- A) True
 - B) False (If False, What is the correct answer?)

15) What is the difference between nuclear FUSION and nuclear FISSION?
Answer in complete sentences. (Session 3)

16) What instrument did you use to focus the solar energy onto the hot dog?
(SESSION 3)

- A) Spectrometer
- B) Oven
- C) Parabolic Dish
- D) Nanometer

17) Which of the following uses solar energy to produce electricity? (SESSION 3)

- A) Pneumatics
- B) Photovoltaic Cells
- C) Geothermal Energy
- D) 9 volt batteries

18) As an object is lifted, its potential energy increases by the distance it is lifted multiplied by its weight. How much is a 4 pound ball's potential energy increased if it is lifted 15" inches? Hint convert 15" inches to feet. (RCA 4)

Formula for conversion: Inches \div Feet(12) = ?

19) Levers are a series of wheels used to change direction of speed of a machine. If False, What is the correct answer? (SESSION 4)

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- A) True
 - B) False (If False, What is the correct answer?)

20) Gear A has 6 teeth and a diameter of 1". Gear B has 3 teeth and a diameter of 1/2" How many rotations will Gear A make when Gear B completes one full rotation?

- A) 2
- B) 3
- C) 1/2
- D) 1

21) What is the correct definition of a second-class lever? (Answer in your own words and in complete sentences) (RCA 5)

22) Mr. Patula can bench press 200 pounds through a distance of 2 feet 25 times. If work equals force multiplied by the distance, how much work was done? (RCA 5)

- A) 4,500
- B) 2,500
- C) 10,000
- D) 12,500

23) What is the simple machine that consists of a bar and fulcrum that can be used to increase force or decrease the effort needed to move a specific load? (SESSION 5)

- A) Pulley
- B) Wedge
- C) Inclined Plane
- D) Lever

24) The longer the load arm, the more you can lift. If False, What is the correct answer? (SESSION 5)

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- A) True
 - B) False (If False, What is the correct answer?)

25) What is the study of the pressure on liquids called? (SESSION 6)
