1) Where is the first place in the Torah where we find an indication that mankind is charged with contributing to the sustainability of the world's resources?

    a) Bereishis 1:1: In the beginning of God's creating the heaven and the earth...

    b) Bereishis 1:11: And God said, "Let the earth sprout vegetation: plants that produce seeds, fruit trees of every kind that bear fruit with the seed in it on the earth." And it was so.

    c) Bereishis 1:28: God blessed them and God said to them, "Be fertile and increase, fill the earth and master it; and rule the fish of the sea, the birds of the sky, and all the living things that creep on earth."

    d) Bereishis 2:15: Now God took the man, and He placed him in the Garden of Eden to work it and to guard it.

2) What directive does the Midrash derive from the verse, "*See God's work, for who can fix what he has ruined*" (Koheles 7:13)?

    a) That you not ruin and destroy God's world.

    b) That you see God's work by studying nature.

    c) That you fix whatever you have ruined in the world.

    d) That you study the laws of the Torah well so that you not make mistakes.

3) We learn from the Torah a way to contribute to environmental sustainability other than practical activities such as recycling, reducing pollution, and using renewable energy. What is that way?

    a) By becoming minimalists or "back-to-the-land'ers" and being content with fulfilling the bare minimum of our needs.

    b) By continuing to live as normal and not worrying about what will happen in future generations.

    c) Through following the will of God and obeying His commandments.

    d) Through reducing the birth rate and population growth.

4) What is a strong logical basis to support a value of environmental sustainability?

    a) Our future generations should be able to enjoy themselves as much as we did.

    b) It is healthy for our minds and bodies to follow practices of sustainability.

    c) We are guests in God's world, and thus we are not entitled to use or misuse His world however we want, but we must respect it and take care of it.

    d) Sustainability increases profits for large businesses.

5) God created the world, and He created man to be in charge of it. According to Torah thought, who is considered to be the "owner" of the world?

    a) God.

    b) Man

    c) The world is ownerless.

    d) God is the primary "owner," but he gives ownership of the world to man when man utilizes the world in the service of God.

6) Energy is broadly defined as which of the following?

    a) Electricity

    b) Heat

    c) The product of an objects mass and its acceleration (ma)

    d) The ability to do work

7) What is the SI unit for distance (change in position)?

    a) Millimeter (mm)

    b) Centimeter (cm)

    c) Meter (m)

    d) Kilometer (km)

8) A sports car accelerates from a stoplight (t = 0, v = 0) at a rate of 5.00 m/s^2 for 6.00 seconds, then coasts at constant velocity for another 5.00 seconds before slowing for the next stop light. How far did the car travel during those first 11.00 seconds?

    a) 255.00 m

    b) 55.00 m/s

    c) 150.00 m/s

    d) 330.00 m/s

9) Currently, the Burj Khalifa building in the United Arab Emirates, is recognized as the tallest building in the world. Including the spire, the building is listed as having a height of 828 m. If you were to drop a penny with a mass of 3.10 g from this height, how much kinetic energy will it have accumulated at the instant it hits the ground? The gravitational constant, $g = 9.80 \text{ m/s}^2$, and you may assume that there is no counter force applied due to wind resistance.

    a) $2.52 \times 10^4 \text{J}$

    b) 25.2 J

    c) $8.11 \times 10^3 \text{ J}$

    d) 8.11 J

10) The new World Trade Center building in New York is recognized as the 7th tallest building in the world, with a height of 541.3 m. If a man with a mass of 62.0 kg were standing at that height, calculate the amount of potential energy the man has, based on his position.

   a) 3.29×10^8 J

   b) 3.29×10^5 J

   c) 3.36×10^4 J

   d) 3.36×10^7 J

11) The SI unit of mass is the metric gram (g).

   a) True

   b) False

12) When the planet Jupiter is at its closest distance to Earth, it would take a rocket 3.21 years to make the journey from Earth to Jupiter. If that rocket travels with an average velocity of 5.80×10^3 m/s, then what is the distance between Earth and Jupiter?

   a) 1.86×10^4 m

   b) 5.88×10^{11} m

   c) 5.88×10^8 m

   d) 1.86×10^7 m

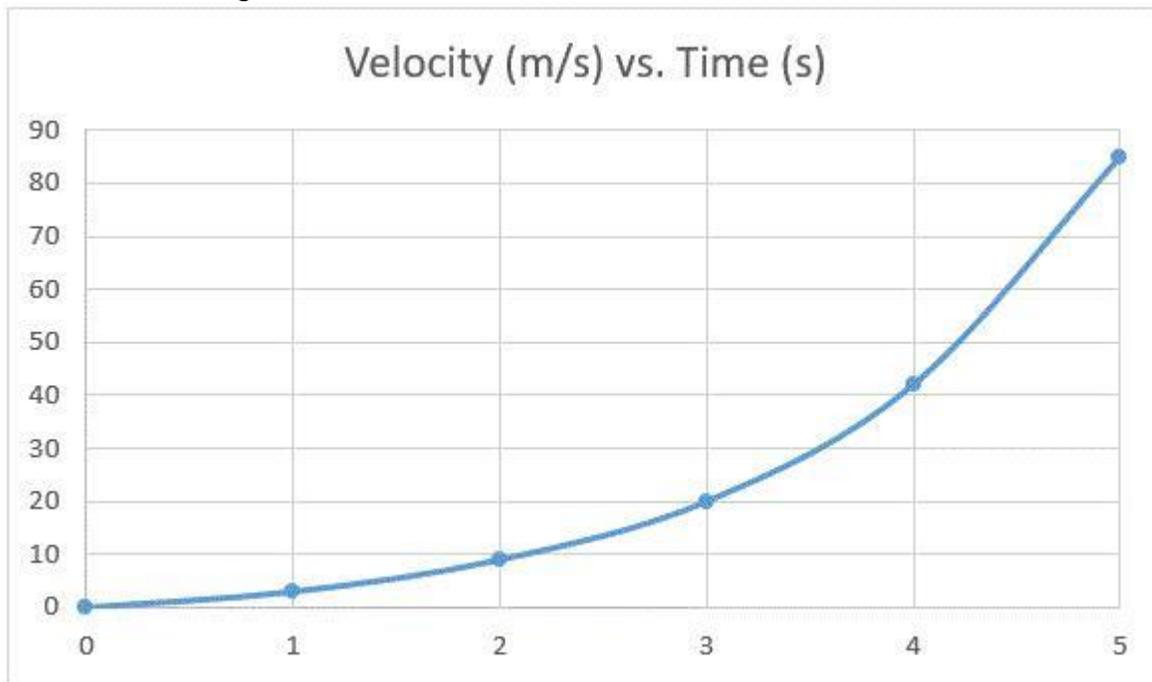13) Which of the following units can Work be measured in?   Which

   a) J

   b) m

   c) kg

   d) km

14) What is the average acceleration between t = 1.00 s and t = 4.00 s?
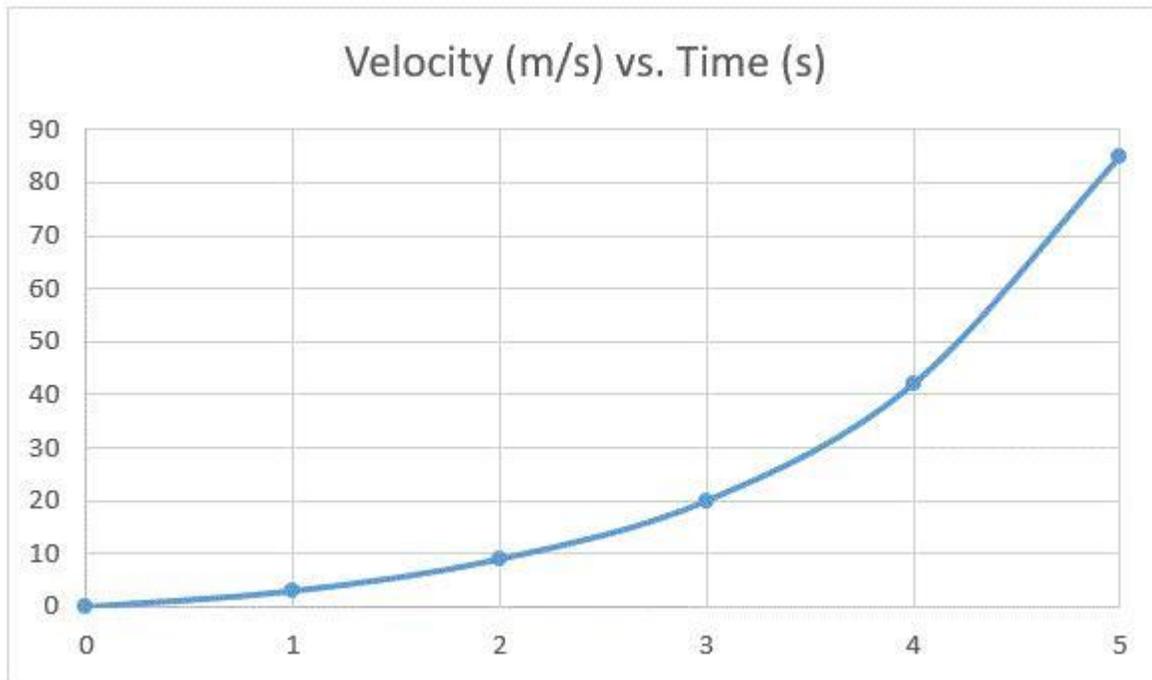
Velocity (m/s) vs. Time (s)

a) 13.0 m/s²
b) 42.0 m/s²
c) 20.0 m/s²
d) 15.0 m/s²

15) If the moving object has a mass of 14.5 g, and moved a total of 159.0 m during this time period of 5.00 s, then how much work has been done on the object?

Velocity (m/s) vs. Time (s)

a) 30.0 J
b) 3.00 x 10^3 J
c) 39.2 J
d) 3.92 x 10^3 J

16) The numerical value for acceleration is always a positive number.

a) True
b) False

17) An object that appears to us to be stationary has 0 thermal energy (heat) and therefore 0 kinetic energy.

a) True
b) False

18) If a ball is suspended in the air, is it exhibiting kinetic energy or potential energy?
a) KE
b) PE

19) A person with a mass of 50.0 kg standing on a ledge as an energy of position (potential energy) of 6.86 x 10³ J. What is the height above the ground of the ledge?

   a) .014 m
   b) 137 m
   c) 0.137 m
   d) 14.0 m

20) When we burn natural gas, methane, in a Bunsen burner or on a gas stove in the home, we are converting chemical energy into thermal energy (heat).
   a) True
   b) False