Integrated Science

Semester II Exam - STUDY GUIDE

May 2014

Mrs. Stevens

Use your notes, text, and handouts to prepare for the exam. There will be no new information on the test. It will be all topics we have discussed in class.

Physics

1. In order for an object to move, what must be applied? _____
2. In order for an object to stop moving, what must be applied? _____
3. In order for a moving object to change direction, what must be applied? _____
4. What is the scientific definition of work?
5. What is the equation used to calculate work? _____
6. What is the unit for work? _____
7. Calculate the work done in the following examples:
    a. 30 N of force is applied over a distance of 2 m.
    b. 560 N person walks 20 m.
    c. A 0.5 N cork flies for 8 m.
    d. A 2 N book is held 6 m high.
8. What is energy?
9. What is kinetic energy?
10. What is the unit used for kinetic energy?
11. What is the equation to calculate kinetic energy?
12. Calculate the kinetic energy of the following:
    a. A 20 kg ball rolling at 3 m/s
    b. A 5 kg ball rolling at 2 m/s

c. A 7 kg ball rolling at 4 m/s

13. What is potential energy?

14. How is it calculated?

15. What is the unit used for potential energy?

16. What is the potential energy of the following:

a. A 19 kg bowling ball held at 4 m high.

b. A 2 kg object held 9 m high.

c. A 120 kg person in a 15 m ski slope.

17. As height of an object increases, its potential energy _____

As mass of an object increases, its potential energy _____

18. Which has more potential energy? A or B

a. A 20 kg object held 4 m high

b. A 15 kg object held at 5 m high

19. How is power calculated?

20. What is the unit for power?

21. What is the Law of Conservation of Energy?

<u>Plate Tectonics</u>

1. What is plate tectonics?

2. What is continental drift?

3. Who was Alfred Wegner?

4. Describe sea-floor spreading

    a. Where does it take place?

5. What are the different types of plate boundaries?

    a. Describe each

Earthquakes and Volcanoes

1. What is an earthquake?
2. Where do they typically occur?
3. What are seismic waves?

    a. What are the types of seismic waves?

    b. Describe each

4. How do we measure earthquakes?
5. What is a volcano?

    a. How does it form?

6. Describe the difference between a quiet and an explosive eruption

    b. What are the differences in the magma in each?

    c. What is the difference in pahoehoe lava and aa lava? In which eruption would you see these?

7. Where do most volcanoes occur?

8. What are different types of volcanoes?

Rocks and Minerals

1. What is a rock?

2. What is a mineral?

3. Properties of minerals
    a. What are they?

    b. Why do we use them?

4. Examples of minerals

5. What are the three major groups of rocks?
    a. Describe each group

    b. Give examples for each

6. What is the rock cycle?

7. Draw out the rock cycle

Earth History

1. Describe the Law of Superposition
    a. How do you find the relative age of rock?

2. **Relative Dating vs. Absolute Dating**
    a. **Describe each**

    b. **What information does each give?**

3. **Geologic Time Scale**
    a. **What is it?**

    b. **How is it divided?**
        a. **What are the units called?**

    c. **What is the accepted age of the Earth?**

Weathering

1. **Define Weathering**

    a. **Compare and contrast mechanical weathering and chemical weathering**

    b. **What effects the rate of weathering and how?**

Atmosphere

1. **What is an atmosphere?**

2. **What is the composition of the atmosphere?**

3. **What are the layers of the atmosphere?**

4. **Describe each layer**

5. **What happens to the solar energy that enters our atmosphere?**

6. **Describe the greenhouse effect**

    a. **Is this bad for the Earth or good?**