Earthquakes Worksheet

Name: ..... Date: .....

I. Multiple Choice Questions

Choose the best answer for each question.

1. **Earthquakes occur when the ground suddenly _____ to release the stress buildup.**
   a) floats
   b) sinks
   c) moves
   d) shakes

2. **Earthquakes form when rocks move along a _____ and energy is released.**
   a) mountain
   b) valley
   c) fault
   d) river

3. **Which of the following is TRUE about the Moment Magnitude Scale?**
   a) It describes the intensity of an earthquake.
   b) It describes the damage caused by earthquakes.
   c) It measures the amount of energy released by an earthquake.
   d) It measures the strength of an earthquake felt by people.

4. **How much greater is the energy released by a magnitude 6 earthquake compared to a magnitude 4 earthquake?**
   a) 20 times greater
   b) 100 times greater
   c) 1000 times greater
   d) 1024 times greater

5. **How much greater is the shaking of a magnitude 8 earthquake compared to a magnitude 6 earthquake?**
   a) two times greater
   b) twenty times greater
   c) one hundred times greater
   d) four times greater

Instrumental Intensity	Perceived Shaking
I	Not Felt
II-III	Weak
IV	Light
V	Moderate
VI	Strong
VII	Very Strong
VIII	Severe
IX	Violent
X+	Extreme

6. **How does the Richter scale primarily differ from the Modified Mercalli scale?**
   a) The Richter scale measures damage, while the Modified Mercalli scale measures energy released.
   b) The Modified Mercalli scale uses instruments, while the Richter scale relies on observations.

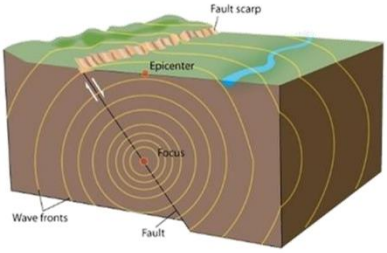
c) The Richter scale measures the strength of an earthquake, while the Modified Mercalli scale describes the damage it causes.
d) Both scales measure the same thing but use different units.

7. **Where do most earthquakes primarily occur on Earth?**


   a) in the centers of continents
   b) in deep ocean trenches
   c) along plate boundaries
   d) in volcanic craters

8. **Consider two earthquakes: Earthquake A with a magnitude of 7.0 and Earthquake B with a magnitude of 5.0. How many times more ground motion did Earthquake A have compared to Earthquake B?**
   a) 2 times more
   b) 10 times more
   c) 100 times more
   d) 4 times more

9. **Which of the following scales is NOT a primary scale used to measure earthquakes?**
   a) Moment Magnitude Scale
   b) Richter magnitude scale
   c) Modified Mercalli Intensity Scale
   d) Beaufort Scale

10. **Seismic waves generated by an earthquake move in which direction?**


   a) only upwards towards the surface
   b) only horizontally away from the focus
   c) in all directions from the focus
   d) only in the direction of the fault line

II. Fill-in-the-Blank Questions

Fill in the blank with the correct term.

11. A(n) _____ is the sudden shaking of the Earth's surface.

12. The _____ magnitude scale is considered the most accurate measure of an earthquake's size.

13. The size of an earthquake is referred to as its _____.

14. _____ occurs when earthquakes cause water-saturated soil to lose its strength and behave like a liquid.

15. Underwater earthquakes can generate large ocean waves called _____

III. Short Answer Questions

Answer the following questions in complete sentences.

16. **Briefly explain the difference between the epicenter and the focus (hypocenter) of an earthquake.**

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17. **Describe one way engineers try to make buildings more resistant to earthquake damage.**

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18. **Explain why the Modified Mercalli Intensity Scale can have different values for the same earthquake in different locations.**

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19. **Besides ground shaking, name two other significant effects or hazards that can result from a major earthquake.**

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20. **Why is it important for communities in earthquake-prone areas to have earthquake preparedness plans?**

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Answer Key

1	d) shakes
2	c) fault
3	c) It measures the amount of energy released by an earthquake.
4	c) 1000 times greater
5	c) one hundred times greater
6	c) Richter Scale measures the strength of an earthquake, but the Modified Mercalli Scale describes the damage it causes.
7	c) along plate boundaries
8	c) 100 times more
9	d) Beaufort Scale
10	c) in all directions from the focus
11	earthquake
12	moment
13	magnitude
14	Liquefaction
15	tsunamis
16	The focus (or hypocenter) is the point inside the Earth where the earthquake originates and the rocks rupture. The epicenter is the point on the Earth's surface directly above the focus.
17	Engineers often design buildings with flexible foundations or incorporate materials that can absorb seismic energy, allowing the structure to sway rather than collapse during an earthquake.
18	The Modified Mercalli Intensity Scale measures the effects of an earthquake at a specific location, such as the amount of shaking and damage. These effects can vary depending on factors like the distance from the epicenter, the local geology, and the types of buildings present.
19	Two other significant effects of a major earthquake include landslides (or ground failure) and tsunamis (if the earthquake occurs underwater).
20	Earthquake preparedness plans are crucial for communities in earthquake-prone areas to minimize injuries, fatalities, and property damage. These plans include knowing safety procedures, having emergency supplies, and ensuring buildings are as earthquake-resistant as possible.