**Earth Science Practice Ch. 19 Test**

**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

\_\_\_\_ 1. Movement occurs along fractures in rocks when \_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | stress equals the strength of the rocks involved | c. | stress is applies to the rocks involved |
| b. | stress overcomes the strength of the rocks involved | d. | stress is less than the rocks involved |

\_\_\_\_ 2. The strain which causes a material to twist is known as \_\_\_\_.

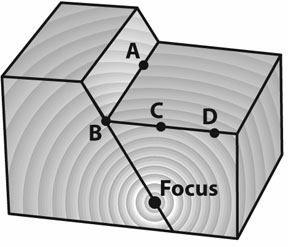
|  |  |  |  |
| --- | --- | --- | --- |
| a. | stress | c. | tension |
| b. | compression | d. | shear |

\_\_\_\_ 3. The strain which causes a material to pull apart is known as \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | stress | c. | tension |
| b. | compression | d. | shear |

\_\_\_\_ 4. P-waves and S-waves are also known as \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | surface waves | c. | body waves |
| b. | ground waves | d. | first waves |

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***Use the diagram to answer the questions.***

\_\_\_\_ 5. Which point marks the epicenter of the earthquake?

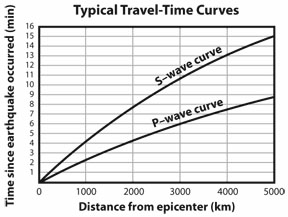
|  |  |  |  |
| --- | --- | --- | --- |
| a. | A | c. | C |
| b. | B | d. | D |

\_\_\_\_ 6. At which point will the most damage as a result of the earthquake occur?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | A | c. | C |
| b. | B | d. | D |

\_\_\_\_ 7. What is true about the focus?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | It is the point where the most surface damage will occur. | c. | It is the point where the waves are attracted. |
| b. | It is the point where the surface waves originate and spread out. | d. | It is the point of failure where the waves originate. |

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***Use the graph to answer the questions.***

\_\_\_\_ 8. A seismogram is located 4500 miles away from the epicenter of an earthquake. What is the difference in time between when the P-waves reach the seismogram and the S-waves reach the seismogram?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 5 1/2 minutes | c. | 10 minutes |
| b. | 6 minutes | d. | 22 minutes |

\_\_\_\_ 9. P-waves reaches a seismogram 6 minutes after an earthquake occurs and the S-waves arrive 3 and a half minutes later. How far is the seismogram from the earthquakes epicenter?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 1000 km | c. | 3000 km |
| b. | 2000 km | d. | 4000 km |

|  |  |  |
| --- | --- | --- |
| **Location** | **Earthquake History** | **Strain Buildup Rate** |
| **A** | many earthquakes | slow |
| **B** | few earthquakes | moderate |
| **C** | many earthquakes | fast |
| **D** | many earthquakes | moderate |

\_\_\_\_ 10. Organize the locations from lowest to highest hazard.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | B, A, D, C | c. | A, B, C, D |
| b. | C, D, A, B | d. | B, A, C, D |

\_\_\_\_ 11. Location D just experienced an earthquake. Which location will most likely experience the next earthquake?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Location C because it has the highest hazard. | c. | It is impossible to tell because the data just gives the risks for earthquakes not a predictable forecast. |
| b. | Location A because it is just below location D in hazard level. | d. | It is impossible to tell because the proximity of the other locations to D is not known. |

\_\_\_\_ 12. A \_\_\_\_ fault forms as a result of horizontal compression.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | blind | c. | strike-slip |
| b. | normal | d. | reverse |

\_\_\_\_ 13. The San Andreas Fault, a result of horizontal shear, is a \_\_\_\_ fault.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | blind | c. | strike-slip |
| b. | normal | d. | reverse |

\_\_\_\_ 14. When the force on rocks is great enough, they break, producing vibrations called \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | faults | c. | strains |
| b. | earthquakes | d. | stresses |

\_\_\_\_ 15. Once the elastic limit of rocks is passed, they break and move along surfaces called \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | faults | c. | strains |
| b. | earthquakes | d. | stresses |

\_\_\_\_ 16. Scientists discovered changes in Earth's interior by studying \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | tsunamis | c. | changes in seismic waves |
| b. | tides | d. | all of the above |

\_\_\_\_ 17. \_\_\_\_ is the force that squeezes rocks together.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Tension | c. | Elastic limit |
| b. | Shear | d. | Compression |

\_\_\_\_ 18. \_\_\_\_ is the force that pulls rocks apart.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Tension | c. | Elastic limit |
| b. | Shear | d. | Compression |

\_\_\_\_ 19. \_\_\_\_ is the force that causes plates to move sideways past each other.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Tension | c. | Elastic limit |
| b. | Shear | d. | Compression |

\_\_\_\_ 20. \_\_\_\_ faults are caused by tensional forces.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Normal | c. | Reverse |
| b. | Strike-slip | d. | Elastic |

\_\_\_\_ 21. \_\_\_\_ faults are caused by compressional forces.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Normal | c. | Reverse |
| b. | Strike-slip | d. | Elastic |

\_\_\_\_ 22. \_\_\_\_ faults are caused by shear forces.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Normal | c. | Reverse |
| b. | Strike-slip | d. | Elastic |

\_\_\_\_ 23. The most destructive seismic wave are \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | primary waves | c. | P-waves |
| b. | secondary waves | d. | surface waves |

\_\_\_\_ 24. The \_\_\_\_ waves are the first to reach a seismograph after an earthquake.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | surface | c. | primary |
| b. | secondary | d. | tsunami |

\_\_\_\_ 25. At least \_\_\_\_ seismographs are needed to accurately locate an earthquake epicenter.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | two | c. | four |
| b. | five | d. | three |

\_\_\_\_ 26. The point in Earth's interior where the energy release of an earthquake occurs is the \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | focus | c. | fault |
| b. | epicenter | d. | inner core |

\_\_\_\_ 27. Primary waves \_\_\_\_ when they hit the liquid outer core.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | slow down | c. | stop |
| b. | stay the same | d. | speed up |

\_\_\_\_ 28. Secondary waves \_\_\_\_ when they hit the liquid outer core.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | slow down | c. | stop |
| b. | stay the same | d. | speed up |

**Completion**

*Complete each statement.*

29. In a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the fracture is caused by horizontal shear and movement is mainly horizontal.

30. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ forms as a result of horizontal compression and results in a shortening of the crust involved.

31. Along a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, movement is both horizontal and vertical, resulting in a lengthening of the crust involved.

**Matching**

*Match each item with the correct description below. You may use a term more than once.*

|  |  |
| --- | --- |
| a. | surface wave |
| b. | P-wave |
| c. | S-wave |

\_\_\_\_ 32. Does not pass through Earth’s liquid outer core

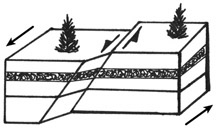
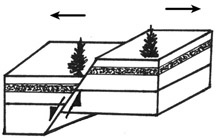
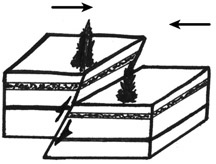
\_\_\_\_ 33. Does not pass through Earth’s interior at all

\_\_\_\_ 34. Squeezes and pulls rocks in same direction as the save travels

\_\_\_\_ 35. Is refracted by Earth’s core

\_\_\_\_ 36. Absence of this kind of waves results in a shadow zone

Match each description with the fault it is describing. Answers will be used more than once.

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\_\_\_\_ 37. experiences only horizontal movement

\_\_\_\_ 38. two trees formerly side by side become closer after faulting

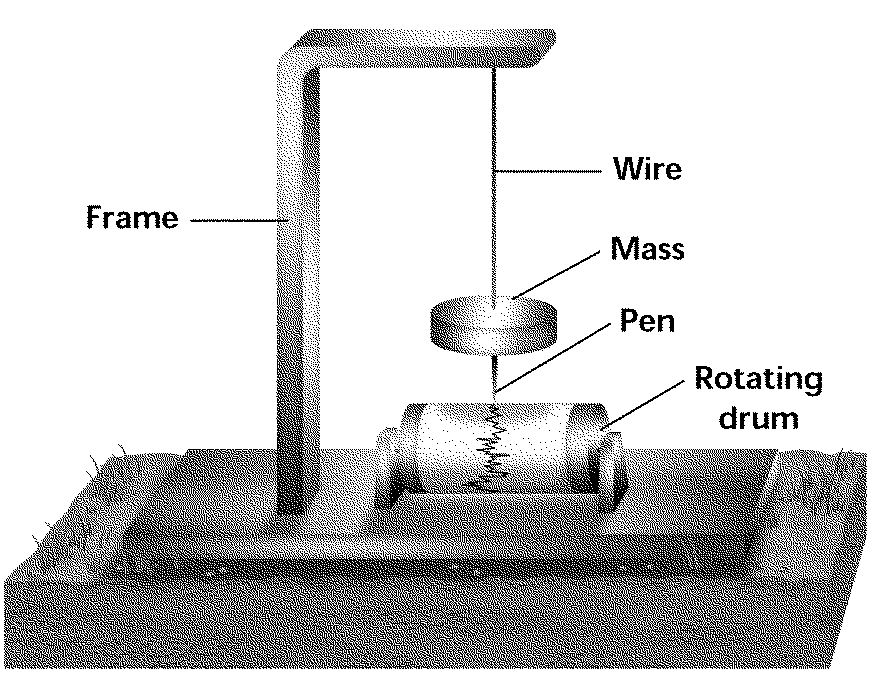
\_\_\_\_ 39. the San Andreas Fault in California

\_\_\_\_ 40. experiences tension from stretching

\_\_\_\_ 41. seen near convergent plate boundaries

**Short Answer**

42. Which direction of ground movement—horizontal or vertical—is detected by the seismograph shown below, and how can you tell?

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**Earth Science Ch. 19 Test**

**Answer Section**

**MULTIPLE CHOICE**

1. ANS: B PTS: 1 DIF: Bloom's Level 1

NAT: B.6 STA: SC.D.1.4.2

2. ANS: D PTS: 1 DIF: Bloom's Level 2

NAT: B.6 STA: SC.D.1.4.2

3. ANS: C PTS: 1 DIF: Bloom's Level 2

NAT: B.6 STA: SC.D.1.4.2

4. ANS: C PTS: 1 DIF: Bloom's Level 1

NAT: B.6 STA: SC.D.1.4.2

5. ANS: C PTS: 1 DIF: Bloom's Level 4

NAT: B.6 STA: SC.D.1.4.2

6. ANS: C PTS: 1 DIF: Bloom's Level 4

NAT: B.6 STA: SC.D.1.4.2

7. ANS: D PTS: 1 DIF: Bloom's Level 5

NAT: B.6 STA: SC.D.1.4.2

8. ANS: B PTS: 1 DIF: Bloom's Level 3

NAT: B.6 STA: SC.D.1.4.2

9. ANS: C PTS: 1 DIF: Bloom's Level 3

NAT: B.6 STA: SC.D.1.4.2

10. ANS: A PTS: 1 DIF: Bloom's Level 4

NAT: F.5 STA: SC.D.1.4.2

11. ANS: C PTS: 1 DIF: Bloom's Level 5

NAT: F.5 STA: SC.D.1.4.2

12. ANS: D PTS: 1 DIF: Bloom's Level 1

NAT: UCP1 | D3 STA: SC.D.1.4

13. ANS: C PTS: 1 DIF: Bloom's Level 1

NAT: UCP1 | D3 STA: SC.D.1.4

14. ANS: B PTS: 1 DIF: B OBJ: 1/1

NAT: UCP2 | B2 | B3

15. ANS: A PTS: 1 DIF: B OBJ: 2/1

NAT: UCP2 | B2 | B3

16. ANS: C PTS: 1 DIF: A OBJ: 6/2

NAT: UCP2 | B2 | B3

17. ANS: D PTS: 1 DIF: B OBJ: 2/1

NAT: UCP2 | B2 | B3

18. ANS: A PTS: 1 DIF: A OBJ: 2/1

NAT: UCP2 | B2 | B3

19. ANS: B PTS: 1 DIF: A OBJ: 2/1

NAT: UCP2 | B2 | B3

20. ANS: A PTS: 1 DIF: B OBJ: 2/1

NAT: UCP2 | B2 | B3

21. ANS: C PTS: 1 DIF: B OBJ: 2/1

NAT: UCP2 | B2 | B3

22. ANS: C PTS: 1 DIF: A OBJ: 3/1

NAT: B2 | B3 | D1

23. ANS: D PTS: 1 DIF: B OBJ: 5/2

NAT: UCP2 | B3

24. ANS: C PTS: 1 DIF: B OBJ: 5/2

NAT: UCP2 | B3

25. ANS: D PTS: 1 DIF: B OBJ: 8/3

NAT: UCP2 | B2 | B3

26. ANS: A PTS: 1 DIF: B OBJ: 4/2

NAT: UCP2 | A1 | B3

27. ANS: A PTS: 1 DIF: B OBJ: 6/2

NAT: UCP2 | B2 | B3

28. ANS: C PTS: 1 DIF: B OBJ: 6/2

NAT: UCP2 | B2 | B3

**COMPLETION**

29. ANS: strike-slip fault

PTS: 1 DIF: Bloom's Level 2 NAT: UCP1 | D3

STA: SC.D.1.4

30. ANS: reverse fault

PTS: 1 DIF: Bloom's Level 2 NAT: UCP1 | D3

STA: SC.D.1.4

31. ANS: normal fault

PTS: 1 DIF: Bloom's Level 2 NAT: UCP1 | D3

STA: SC.D.1.4

**MATCHING**

32. ANS: C PTS: 1 DIF: Bloom's Level 2

NAT: UCP1 | B6 | D1 | D3 STA: SC.D.1.4

33. ANS: A PTS: 1 DIF: Bloom's Level 2

NAT: UCP2 | B6 | D1 STA: SC.D.1.4

34. ANS: B PTS: 1 DIF: Bloom's Level 2

NAT: UCP2 | B6 | D1 STA: SC.D.1.4

35. ANS: B PTS: 1 DIF: Bloom's Level 2

NAT: UCP1 | B6 | D1 | D3 STA: SC.D.1.4

36. ANS: B PTS: 1 DIF: Bloom's Level 2

NAT: UCP1 | B6 | D1 | D3 STA: SC.D.1.4

37. ANS: C PTS: 1 DIF: Bloom's Level 4

NAT: B.6 STA: SC.D.1.4.2

38. ANS: A PTS: 1 DIF: Bloom's Level 4

NAT: B.6 STA: SC.D.1.4.2

39. ANS: C PTS: 1 DIF: Bloom's Level 4

NAT: B.6 STA: SC.D.1.4.2

40. ANS: B PTS: 1 DIF: Bloom's Level 4

NAT: B.6 STA: SC.D.1.4.2

41. ANS: A PTS: 1 DIF: Bloom's Level 4

NAT: B.6 STA: SC.D.1.4.2

**SHORT ANSWER**

42. ANS:

A seismograph with a mass suspended in this way allows the frame (and ground) to move back and forth horizontally with respect to the inert mass.

PTS: 1 DIF: Bloom's Level 3 NAT: UCP2 | A1 | E1 | E2

STA: SC.D.1.4