1. Name the tectonic plates located under points A, C, and E

A - Pacific Plate  C - Juan de Fuca Plate  E - North American Plate

2. What process causes tectonic plates to shift and move?

Convection cells in the asthenosphere

3. What plate boundaries are located at points B and D? What crustal features are forming here?

B: Divergent Ridge  Seaﬂ oor Spreading
D: Convergent Trench  Mountain  Volcano

4. Draw detailed diagrams of the plate boundaries mentioned above. (Be sure to include both tectonic plates, arrows showing direction of movement)
Base your answers to questions 21 through 25 on your knowledge of Earth Science, the Earth Science Reference Tables, and the diagram below. Diagram I is a map showing the location and bedrock age of some of the Hawaiian Islands. Diagram II is a cross section of an area of Earth illustrating a stationary magma source and the process that could have formed the islands.

**Diagram I**

- Kauai: 5.6 to 3.2 million years
- Oahu: 2.5 to 2.2 million years
- Maui: 1.3 to 1.0 million years
- Hawaii: Less than 1.0 million years

**Diagram II**

21. a. If each island formed as the crustal plate moved over the magma source in the mantle as shown in diagram II, where would the next volcanic island most likely form? [Southwest (behind Hawaii)]

   b. How do you know? [Plate is moving NW]

22. a. Compared to the continental crust of North America, the oceanic crust in the area of the Hawaiian Islands is probably [oceanic \( \approx \) more dense]

   b. How do you know? [Basalt. It subducts & Mafic]

23. Volcanic activity like that which produced the Hawaiian Islands is usually closely correlated with [Hot Spots]

24. a. Which of the Hawaiian Islands has the greatest probability of having a volcanic eruption? [Hawaii]

   b. How do you know? [over the magma source]

25. On the grid below, construct the graphing relationship that best represents the ages of the Hawaiian Islands, comparing them from point A to point B.

[Graph with points A and B, with older age on the top and younger age on the bottom, illustrating the relationship as described in the text.]