

FUN II: Reading

Definition Search: I

Perpetual-motion devices are probably the best known of such impossible machines. For more than fifteen hundred years, inventors have offered plans for, and actually built, machines that given proper construction, materials, and lubrication were supposed to
10 operate forever. Such devices were often expected to do useful work, and to generate more energy than was required merely to keep them running.

The classic version of a perpetual-motion device is a wheel that spins continuously upon its axle without the aid of an external power source. A self-moving wheel is
15 described in the ancient South Asian treatise *Siddhanta Ciromani* (A.D.400-450), and a thirteenth-century illustration of one appears in the sketchbook of Villard d'Honnecourt of France. In Villard's device an uneven number of mallets hang loosely from the rim of a vertically mounted wheel. They are spaced so that the wheel is constantly unbalanced and therefore always moving.

The European Renaissance, which first witnessed so many other manifestations of
20 technological fantasy, was a popular time for the invention of perpetual-motion devices. Often quite elaborate in conception, these might utilize water, air, or the force of gravity, and all were designed as closed cycle operations; for example, the energy generated by a continuous stream of water flowing over a waterwheel would be used to power the pump that lifted the water up to the waterwheel, and so on endlessly.

19. Which of the following terms is explained in the passage?

- (A) "Perpetual-motion devices" (line 7)
- (B) "mallets" (line 16)
- (C) "Renaissance" (line 19)
- (D) "gravity" (line 21)

Definition Search: II

10 When a pot is fired, it loses its water and can crack, so the potter added a temper to the clay, a substance that helped reduce shrinkage and cracking.

 Since surface finishes provided a pleasing appearance and also improved the durability in day-to-day use, the potter smoothed the exterior surface of the pot with wet hands. Often a wet clay solution, known as a slip, was applied to the smooth
15 surface. Brightly colored slips were often used and formed painted decorations on the vessel. In later times, glazes came into use in some areas. A glaze is a form of slips that turns to a glasslike finish during high-temperature firing. When a slip was not applied, the vessel was allowed to dry slowly until the external surface was almost like leather in texture. It was then rubbed with a round stone or similar object to give it a shiny,
20 hard surface. Some pots were adorned with incised or stamped decorations.

 Most early pottery was then fired over open hearths. The vessels were covered with fast-burning wood; as it burned, the ashes would fall around the pots and bake them evenly over a few hours. Far higher temperatures were attained in special ovens, known as kilns, which would not only bake the clay and remove its plasticity, but also dissolve
25 carbons and iron compounds.

8. Look at the terms "temper" (line 10), "glazes" (line 16), "kilns" (line 24), and "compounds" (line 25). Which of these terms is NOT defined in the passage?

(A) temper

(B) glazes

(C) kilns

(D) compounds

Definition Search : III

5 The crust and uppermost part of the mantle (the mantle is that part of the Earth between the crust and the core) are relatively rigid compared to the section of the mantle just below them. The average density of the continental crust is 2.7 times the density of water; in comparison, the ocean crust is 3.0 times the density of water, and the mantle is 3.4 times the density of water. The difference in density buoys up the continental and oceanic crust.

10 The oceanic crust is like a cake with three distinct layers. It has an upper layer, formed when lava erupted under the sea at great depths; a middle layer, consisting of a tangled mass of feeders (passages through which liquid rock material, called magma, can flow to the surface), and a lower layer of gabbros (coarse-grained rocks that crystallized slowly under high pressure in deep chambers). The same rock
15 sequence is found in some places on the continents. This similarity has led geologists to hypothesize that these rocks now on the continents were pieces of ancient oceanic crust known as ophiolites.

20 Most oceanic crust is less than 170 million years old, with a mean age of roughly 100 million years, compared with the continental crust, where some of the rocks are up to about four billion years old. The difference in ages is due to the recycling of oceanic crust into the mantle. Almost all the ocean floor eventually disappears into the Earth's interior to provide some of the raw materials for the continued growth of the continents.

The oceanic crust consists of basalt. New oceanic crust is formed at mid-ocean ridges,

19. Look at the terms "mantle" (line 6), "magma" (line 13), "gabbros" (line 13), and "basalt" (line 24). All of these terms are defined in the passage EXCEPT

- (A) mantle
- (B) magma
- (C) gabbros
- (D) basalt