

SCIENCE TEST

Test 1

Read the following selection. Then circle the best possible answer to each question.

Insects constitute over half of all the species of animals in the world. There are approximately 600,000 different kinds of insects. It has been estimated that insects outnumber the people of the world by approximately 5,000,000 to 1.

Over half of the order of insects are identified as winged animals. Any scientific name of an insect ending with *ptera* indicates that the animal has wings of some kind. For example, the wasp is classified as a hymenoptera, or a membrane-winged insect. The term *insect* is derived from the word *incised*, which means divided. Insects' bodies are divided into three sections: the head, the thorax, and the abdomen. The term *hexapod*, meaning six-legged, is applied to insects, as they all have six legs. Another identifying feature of insects is their antennae. These organs, jointed at the head, are long and delicate. They contain many nerves, which make them very sensitive feeling organs. The June beetle uses its antennae for smelling, while male mosquitoes can detect sound with the small hairs on their antennae.

The exterior of the body of insects is a hard material known as chitin. It forms the skeleton to which the muscles are attached. There is no interior framework of bones. Insects go through a process of molting, or shredding the hard outer skeleton, in order to grow.

1. The bodies of insects are divided into how many sections?
 - a. 2
 - b. 3
 - c. 6
 - d. 5

2. *Hexapod* means
 - a. six-legged
 - b. six-sectioned
 - c. six-eyed
 - d. none of the above

3. The skeleton of an insect is made of
 - a. vertebrae
 - b. ptera
 - c. thorax
 - d. chitin

4. When an insect molts, it
 - a. reproduces
 - b. is born
 - c. dies
 - d. shed its outer skeleton

Test 2

Read the following selection. Then circle the best possible answer to each question.

The green matter in plants is called chlorophyll. It is made by the protoplasm of the plant cells. Chlorophyll is considered to be the most important chemical substance in the world. When it is exposed to sunlight, chlorophyll enables plant cells to take carbon dioxide from the air, mix it with water from the soil, and produce sugar. This process is called photosynthesis. It allows plants to capture and store energy from the sun.

Plants convert the sugar resulting from photosynthesis into carbohydrates, fats, and proteins. Animals eat plants and convert them into their own body tissues and energy. In this way the energy of the sun is converted into chemical energy. All life, therefore, depends on the sun.

1. Photosynthesis is the process by which
 - a. plants make sugar
 - b. plants convert sunlight into energy
 - c. chlorophyll makes fats
 - d. none of the above
2. The most important chemical substance in the world is
 - a. magnesium
 - b. hydrogen
 - c. carbon
 - d. chlorophyll
3. The green matter of plants is produced by
 - a. chlorophyll
 - b. protoplasm
 - c. oxygen
 - d. nitrogen
4. How do human beings convert the energy of the sun to their use?
 - a. by exposure to the sun
 - b. by consuming water
 - c. by inhalation
 - d. by consuming plants

Test 3

Read the following selection. Then circle the best possible answer to each question.

Water is the most important liquid medium for living organisms. Water also accepts pollution readily, and polluted waters carry diseases. Foreign substances in water include suspended particles which settle out, particles so small that their settling rate is insignificant, and dissolved matter which does not settle out and is not filterable.

Natural waters are never totally “pure,” but when polluted by industrial and human wastes, waterways become eyesores, odorous, and generally unhealthy. The pollutants in these waters may cause disease, death, and equipment corrosion.

People exist with trillions of microorganisms on their skin and in their bodies. The excrements of humans, when dumped into our waterways, usually carry harmful diseases caused by microorganisms that live in sewage wastes. Water-carrying sewage waste is unsafe for human activities or consumption. In the United States, water containing fewer than 10 intestinal bacteria per liter (a little more than a quart) is considered drinkable if it does not contain chemical impurities in concentrations hazardous to health and if it does not have any objectionable taste, odor, color, or cloudiness. Where will all the needed water for animal and plant life come from unless people cease to contaminate our water sources?

1. Water accepts pollution
 - a. slowly
 - b. readily
 - c. only when heated
 - d. seasonally

2. Excrements of humans dumped into our waters may
 - a. be all right if left alone
 - b. cause disease
 - c. never again produce a problem to humans
 - d. none of the above

3. Chemicals that dissolve in water and do not settle out are
 - a. not filterable
 - b. not pollutants
 - c. no threat to living organisms
 - d. none of the above

4. Microorganisms live
 - a. on the skin of people
 - b. in human wastes
 - c. in the intestines of people
 - d. all of the above

Test 4

Read the following selection. Then circle the best answer to each of the questions.

During a violent earthquake, buildings collapse. The surface of the earth may undergo striking changes. There may be vertical shifting along a fault, leaving one area higher than another. Horizontal movement may also take place, leaving roads and fences offset by inches or by many feet. In rare instances cracks may open and close, swallowing up any object which falls in.

Tremendous forces of pressure and heat deep in the interior of the earth are constantly causing movement inside the earth. There may be as many as a million earthquakes in a single year, most of which are relatively small and of no individual consequence. However, when great pressure and stress build up along a fault line, then a major earthquake may occur. Scientists have identified fault lines almost completely girdling the Pacific Ocean. There are known earthquake belts across southern Asia and around the Mediterranean Sea.

Huge tidal waves, or *tsunamis*, may be set in motion when an earthquake occurs under the ocean. These tidal waves cause the loss of many lives and much property.

Earthquakes are located by the use of a scientific instrument called a seismograph. This sensitive machine records vibrations of the earth. The recordings of machines in different locations around the world are compared and the center of earthquakes can then be located.

1. An earthquake may result from
 - a. molten lava
 - b. an accumulation of pressure along a fault line
 - c. movement along a fault line
 - d. a tidal wave

2. What causes movements within the interior of the earth?
 - a. volcanoes
 - b. earthquakes
 - c. heat and pressure
 - d. faults

3. The Pacific Ocean is surrounded by
 - a. earthquakes
 - b. earthquake centers
 - c. tidal waves
 - d. fault lines

4. Tidal waves result from
 - a. *Tsunamis*
 - b. heat and pressure
 - c. earthquakes at sea
 - d. none of the above

