

# The Sahara Desert

**1) The Sahara Desert traverses how many countries on the continent of Africa?**

- a.) 11      b.) 6      c.) 9      d.) 14

ANSWER: a

The Sahara Desert, covering most of North Africa, is the largest desert in the world. From north to south the Sahara is between 800 and 1,200 miles and is at least 3,000 miles (4,800 km) from east to west. Due to the massive size of the Sahara, Africa is split into two regions: that which lies above or forms part of the Sahara and the rest of Africa south of the Sahara. On the west, the Sahara is bordered by the Atlantic Ocean and on the east by the Red Sea, and to the north are the Atlas Mountains and Mediterranean Sea.

**2) Sahara means what in the Arabic language?**

- a.) hot      b.) sand      c.) desert      d.) to breathe with difficulty

ANSWER: c

**3) True or false? The temperature can be very cold in the desert.**

ANSWER: True

The Sahara's desert climate is believed to have been established over five million years ago during the Pliocene Epoch. Since then the Sahara has been subject to short- to medium-length dry and humid conditions, which have contributed to the unique climate of the Sahara today. For the past 2,000 years, the climate of the Sahara has remained quite consistent, except for a period of time in the 16th and 18th century when there was a "Little Ice Age" in Europe. This ice age significantly increased the amount of precipitation over the whole Sahara Desert until around the 19th century. By this time, the climate had become quite stable again and resembled the desert climate of today.

The Sahara's climate consists of basically two sub-climates, a dry subtropical climate in the north and a dry tropical climate in the south. The dry tropical climate is generally characterized by mild, dry winters, a hot dry season just before the rainy season, and an annual temperature cycle. The dry subtropical climate, however, is characterized by annually high temperature ranges, cold winters, hot summers and two rainy seasons. There is a narrow strip in the western portion of the Sahara, along the coast, which generally has cool

temperatures compared to the rest of the Sahara because of the influence of the cold Canary Current.

### **Dry, subtropical climate**

Generally, the dry subtropical climate found in the north is caused by constant high-pressure cells over the tropic of Cancer. The winters are considered cool for desert conditions, with an average temperature of 55° F (13° C). The summers are very hot, with the highest ever recorded temperature at 136° F (58° C).

### **Dry Tropical Climate**

The climate of the southern tropical region of the Sahara is dictated by a stable continental air mass and an unstable marine air mass. The average temperature in this region is about 31.5° F (17.5° C), however in the higher elevations, the temperature has been recorded at 5° F (-15° C), which is quite typical.

#### **4) The Sahara contains what land forms? (choose all applicable)**

- a.) dunes   b.) gravely plains   c.) volcanic mountains   d.) all**

ANSWER: d

The Sahara's topographical features include shallow basins, large oasis depressions, serirs or regs (gravel-covered plains), plateaus, mountains, sand sheets, dunes and sand seas (ergs). The highest part of the desert is at the summit of Mount Koussi, which is 11,204 feet (3,415 m) high. However, the lowest point of the Sahara is 436 feet (133 m) below sea level: in the Qattera Depression in Egypt. An area of the Sahara desert located in Chad contains volcanic mountains.

Over 25 percent of the Sahara's surface is covered by sand sheets and dunes. The most common types of dunes include tied dunes, blowout dunes, barchan and transverse dunes, longitudinal seirfs, and complex sand seas. Within the Sahara are several pyramidal dunes that reach over 500 feet in height while the draa, a mountainous sand ridge, reaches over 1,000 feet. Researchers have for many years tried to figure out how these dunes were formed, but the case remains unsolved.

#### **5) Annual rainfall in the Sahara consists of approximately:**

- a.) 8 inches   b.) 10 inches   c.) 24 inches   d.) none**

ANSWER: a

The average rainfall in the subtropical region is approximately 3 inches (76 mm) per year. Precipitation generally falls between December and March, with the maximum rain falling in August and almost no rain at all during May and June. The August storms have been known to cause flash floods which send water to parts of the desert that rarely receive precipitation.

In the dry tropical climate the average annual precipitation is around five inches and includes snow in the higher elevations. In the western part of the tropical region, the cold Canary Current reduces the amount of rainfall, lowers the average temperature, and increases the humidity and the probability of fog.

**6) A sand dune will move across a desert. True or false?**

ANSWER: True

Sand dunes are hills of sand built by the wind. Dunes are very different from other hills, because dunes move. When the wind blows, a sand dune changes shape. The wind blows sand up one side of the hill and over the top. The sand rolls down on the other side. It shifts up to one foot per day, and much more during a sandstorm. In this way the dune slowly travels across the desert.

**7) Sandstorms are responsible for: (choose all applicable)**

**a.) cuts   b.) respiratory infections   c.) inflicting pain   d.) all**

ANSWER: d

Sandstorms and dust storms both occur in deserts. The planet Mars has dust storms, too. During sandstorms, the wind lifts up grains of sand and bounces them around. Wind-blown sand acts like a natural sandblaster. It can sculpt rock formations, and can even strip paint from cars.

Sandstorms are a very unpleasant – and painful – fact of life for people who live in the Sahara Desert in North Africa. Howling winds whip up sand which cuts their faces and hands and gets into their eyes, noses, and mouths. Desert nomads protect themselves from the swirling sand grains by pulling their headdresses over their faces when a sandstorm blows up.

The Arabic name for a wild, sand-laden wind is Haboob. Other Saharan winds also have their own special names. Khamsin is an Arabic word meaning "50 days." This wind sweeps across the desert from March through May, filling the air with sand. The name of the desert wind Harmattan comes from a word in the West African language Twi that means "to tear your breath apart."

Sand grains are heavy, so they are seldom lifted more than 6 feet. Dust storms, however, can lift choking dust to much greater heights. Dust storms can be dangerous to aircraft because these clouds of dust can reach heights of 5,000 -

10,000 feet or more. This wind is usually caused by convection currents (which are created by intense heating of the ground), and is usually strong enough to move entire sand dunes. Air is unstable when heated, and this instability in the air will cause the mixture of higher winds in the troposphere with winds in the lower atmosphere, producing strong surface winds.



(image is of a sandstorm beginning, courtesy of [http://www.pcsympathy.com/modules/coppermine/albums/userpics/10002/normal\\_sandstorm.jpg](http://www.pcsympathy.com/modules/coppermine/albums/userpics/10002/normal_sandstorm.jpg))

The dust that blows around in dust storms is mostly made of soil. It may also contain pieces of dried leaves, bits of lint, particles of carbon and other solids that come from smoke, volcanic ash, powdered remains of meteorites that have burned up in the atmosphere, plant pollen, mold spores, fungal spores, yeasts, bacteria and germs. Consequently, it's not a good idea to breathe this dust!

### **Valley Fever**

Valley Fever (coccidioidomycosis) is a lung disease that is endemic in the southwestern United States, California, northwestern Mexico, Central America, and South America. This includes the Central and San Joaquin valleys and desert areas of California, as well as the arid areas of Nevada, Utah, Arizona, West Texas, and New Mexico. It is most common in the Phoenix and Tucson areas of Arizona, and in Kern County, California.