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Life in the Deserts

Water is essential for all life forms including plants, animals, and humans. Deserts are regions where water is scarce, making life challenging. These areas are characterized by low rainfall, scanty vegetation, and extreme temperatures. Deserts can be classified into hot deserts and cold deserts based on their temperature. People living in deserts adapt to the harsh conditions and practice agriculture wherever water is available.

The Hot Desert - Sahara

The Sahara Desert, located in North Africa, is the world's largest hot desert, covering approximately 8.54 million square kilometers. It spans across eleven countries including Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Niger, Sudan, Tunisia, and Western Sahara.



Fig. 7.1: The Sahara Desert

The Sahara features vast sand dunes, gravel plains, and rocky plateaus, some rising over 2500 meters. The landscape includes inselbergs (isolated rock hills), cracked dry soil with desiccation cracks, and salt flats known as playas. Vegetation is sparse, consisting mainly of xerophytes—plants adapted to conserve water with features like small leaves and deep roots. The climate is arid with extremely hot days and cold nights. Animals and plants have special adaptations to survive these conditions.

Climate of the Sahara Desert

The Sahara experiences scorching hot and dry conditions with a short rainy season. Daytime temperatures can reach up to 50°C, while nights can be near freezing. Moisture evaporates faster than it accumulates, resulting in a clear, cloudless sky.

Exam Question

Q: What are the main characteristics of the Sahara Desert's climate?

A: The Sahara Desert has an arid climate with very low rainfall, extremely hot days reaching up to 50°C, cold nights near zero degrees, and a short rainy season with clear skies.

Flora and Fauna of the Sahara Desert

Vegetation includes cactus, date palms, and acacia trees. Oases are fertile areas with water supporting green vegetation. Animal species include camels, hyenas, jackals, foxes, scorpions, snakes, and lizards.



Fig. 7.3: Oasis in the Sahara Desert

Exam Question

Q: What is an oasis and why is it important in the Sahara Desert?

A: An oasis is a fertile area in a desert where water is available, allowing plants and animals to survive. It supports human settlements and agriculture in the desert.

People of the Sahara Desert

The Sahara is inhabited by nomadic tribes such as the Bedouins and Tuaregs who rear livestock like goats, sheep, camels, and horses. They use animal products for food, clothing, and tools. Settled populations live near oases and the Nile Valley, growing crops like date

palms, rice, wheat, barley, and beans. The discovery of oil and minerals like iron and uranium is transforming the region.

Exam Question

Q: How do the nomadic tribes of the Sahara Desert adapt to their environment?

A: Nomadic tribes rear livestock suited to desert conditions, use animal products for various needs, wear protective clothing against dust and heat, and move to find grazing land and water.

The Cold Desert – Ladakh

Ladakh is a cold desert located in the Great Himalayas in northern India. It is enclosed by the Karakoram Range and the Zaskar mountains. The region has several rivers including the Indus, deep valleys, glaciers like the Gangri glacier, and high altitudes ranging from 3000m to over 8000m.

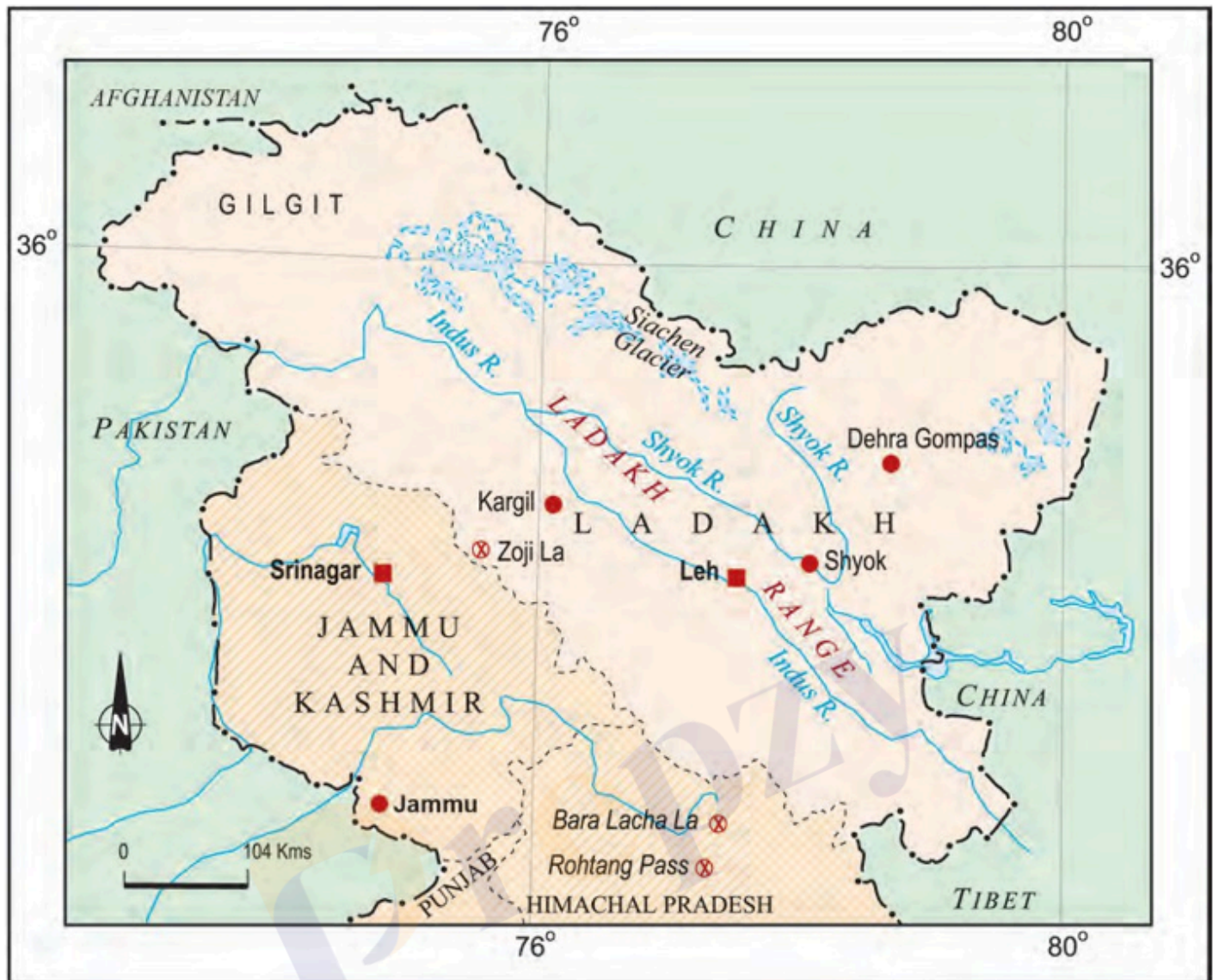


Fig. 7.4: Ladakh

The climate is extremely cold and dry with very low rainfall (about 10 cm annually). Summer days are just above zero degrees Celsius, while winter nights can drop below -40°C . The region lies in the rain shadow of the Himalayas, resulting in scarce precipitation.

Flora and Fauna of Ladakh

Vegetation is sparse with grasses, shrubs, willows, and poplars in valleys. Fruit trees like apples, apricots, and walnuts bloom in summer. Common animals include wild goats, sheep, yak, and special dogs. Birds such as robins, Tibetan snowcock, and ravens are found here. The endangered Tibetan antelope (Chiru) is hunted for its wool called shahtoosh.

Exam Question

Q: Describe the vegetation and animal life found in Ladakh.

A: Ladakh has sparse vegetation including grasses, shrubs, willows, poplars, and fruit trees. Animals include wild goats, sheep, yak, special dogs, and various birds. The Tibetan antelope is an endangered species found here.

People and Culture of Ladakh

The people of Ladakh are mainly Muslims and Buddhists. Buddhist monasteries called gompas, such as Hemis, Thiksey, Shey, and Lamayuru, are important cultural centers. Agriculture includes barley, potatoes, peas, beans, and turnips. Women actively participate in household work, farming, and small businesses. Leh is the capital and is connected by road and air. The National Highway 1 connects Leh to Kashmir Valley through the Zoji La Pass.



Fig. 7.5: Thiksey Monastery

Exam Question

Q: What are some cultural features of Ladakh?

A: Ladakh has Buddhist monasteries called gompas, a mix of Muslim and Buddhist

populations, traditional festivals, and a lifestyle adapted to the cold desert environment.

Solved Examples

Example 1

Question: Why is the Sahara Desert considered a hot desert?

Answer: The Sahara Desert is considered a hot desert because it experiences extremely high temperatures during the day, often reaching 50°C, has very low rainfall, and features arid conditions with sparse vegetation.

Example 2

Question: How do people in Ladakh adapt to the cold desert environment?

Answer: People in Ladakh adapt by wearing warm clothing, living in houses that conserve heat, practicing agriculture suited to short growing seasons, and relying on animal products like yak milk and wool for food and clothing.

Practice Set

Easy

- What is an oasis?
- Name two animals found in the Sahara Desert.

Moderate

- Explain why the Sahara Desert has extreme temperatures.
- Describe the climate of Ladakh.

Challenging

- Discuss the impact of oil discovery on the Sahara Desert region.
- How do the geographical features of Ladakh influence the lifestyle of its inhabitants?

Answer Key

- **Oasis:** A fertile area in a desert where water is available.
- **Animals in Sahara:** Camels, hyenas, jackals, foxes, scorpions.
- **Extreme temperatures in Sahara:** Due to intense sunlight, low humidity, and lack of cloud cover causing hot days and cold nights.
- **Climate of Ladakh:** Cold and dry with very low rainfall, freezing winters, and mild summers.
- **Impact of oil discovery:** Economic transformation, modernization, and changes in traditional lifestyles.
- **Geographical influence in Ladakh:** High altitude and cold climate lead to specialized agriculture, animal rearing, and cultural adaptations.

Quick Reference

- **Desert:** Arid region with low rainfall and extreme temperatures.
- **Sahara Desert:** Largest hot desert in the world, located in North Africa.
- **Oasis:** Fertile area in a desert with water availability.
- **Ladakh:** Cold desert in the Himalayas with high altitude and cold climate.
- **Gompas:** Buddhist monasteries in Ladakh.

Glossary

- **Arid:** Extremely dry climate with little or no rainfall.
- **Desiccation cracks:** Cracks formed in soil or mud when it dries and contracts.
- **Inselbergs:** Isolated rock hills rising abruptly from flat surroundings.
- **Oasis:** Fertile spot in a desert where water is found.
- **Xerophytes:** Plants adapted to survive in dry conditions.
- **Rain shadow:** Dry area on the leeward side of a mountain range.

- **Gompa:** Tibetan Buddhist monastery.

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