# Structure Of Ocean Floor

## Exercise

**Q. 1. A. Choose the correct option:**

**Like there are landforms on land, ocean floor also has submerged landforms because ……**

**A. There is land under water**
**B. There are volcanoes under water**
**C. Land is continuous and there is water in deeper parts.**
**D. Though land is continuous, its level is not the same everywhere like that of water.**

**Answer :** Though land is continuous, its level is not the same everywhere like that of water. Continental crust and oceanic constitute part of the lithosphere.

**Q. 1. B. Choose the correct option:**

**Which part of the ocean floor is most useful to the man?**

**A. Continental shelf**
**B. Continental slope**
**C. Abyssal plains**
**D. Marine deeps**

**Answer :** It is the land near the coast and submerged under the sea. It is shallow and provides rich fishing ground due to the presence of adequate sunlight and plankton. Various minerals sources like polymetallic nodules and oil and gas are also found on the continental shelf. Ex: Mumbai High.

**Q. 1. C. Choose the correct option:**

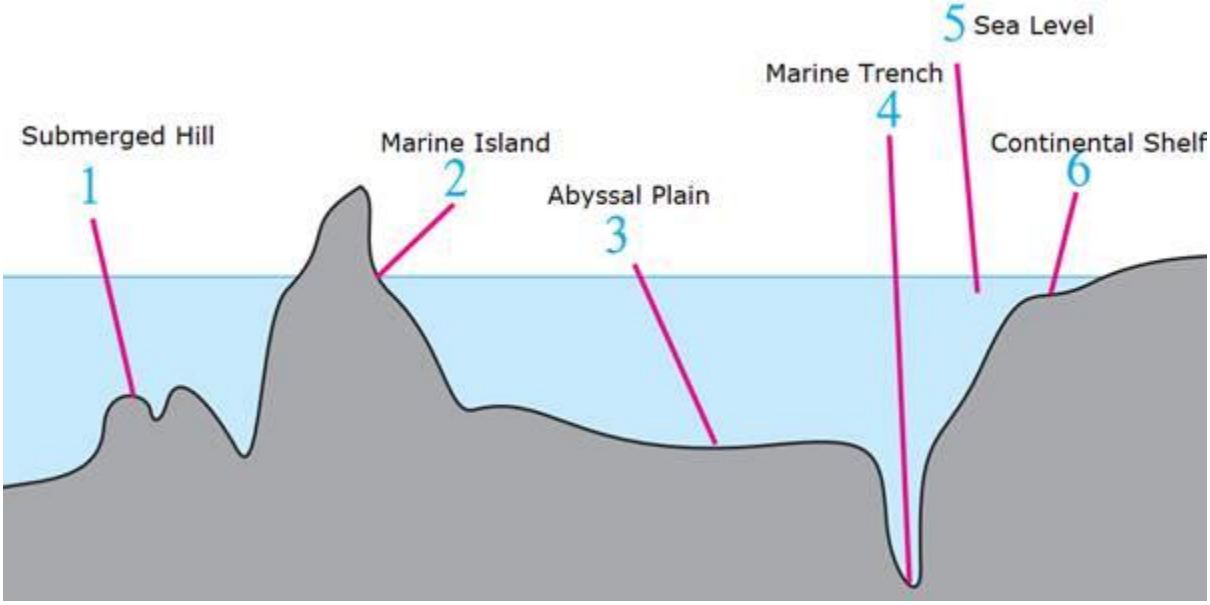
**Which one of the following options is related to marine deposits?**

**A. Rivers, glaciers, remains of plants and animals**
**B. Volcanic ash, continental shelf, remains of plants and animals**
**C. Volcanic ash, lava, fine particles of soil**
**D. Volcanic ash, remains of plants and animals, abyssal plains**

**Answer :** Marine deposits are generally found in the continental shelf. These include remains of plants and animals, soil particles, lava and volcanic ash. The mixture of these lies in the form of fine clay. These deposits are important to know more about marine life and minerals in the ocean bed.

**Q. 2. A. Name the landforms shown in the figure.**

**Answer :**




**Q. 2. B. Which of these landforms is useful for deep sea research?**

**Answer :** Trenches, abyssal plains etc are useful for deep sea research. Trenches are the some of the most seismically zones which are responsible for causing earthquakes. Rock sediments from ocean floor have helped the scientists to determine its age which subsequently led to the development of plate tectonics theory.

**Q. 2. C. Which of these are appropriate to be used for the protection of marine borders and naval-base building?**

**Answer :** Islands are useful for protection of marine borders and naval-base building. For instance, India has a naval base at Andaman and Nicobar Islands.

**Q. 3. A. Give geographical reasons:**

**The study of the ocean floor is useful to man.**

**Answer :** The ocean floor is the land beneath the ocean. It has diverse landforms ranging from the continental shelf to trenches and mountains. Continental shelves are resource-rich regions. They are rich fishing grounds due to the presence of adequate sunlight and plankton.

The study of the ocean floor is useful for deep sea research. For instance, by determining the age of rocks, scientists have developed plate tectonics theory which

explains the formation of various landforms like mountains, trenches, and activities like volcanoes and earthquake.

**Q. 3. B. Give geographical reasons:**

**The continental shelf is a paradise for fishing activity.**

**Answer :** The continental shelf is the land near the coast which is submerged under the sea. These are the extended margins of the continent. It is considered a paradise for fishing activity because of the favorable conditions available for growth of fishes. As the continental shelf is shallow, good amount of sunlight reaches on its bed facilitating the growth of planktons and algae which serves as food for fish.

**Q. 3. C. Give geographical reasons:**

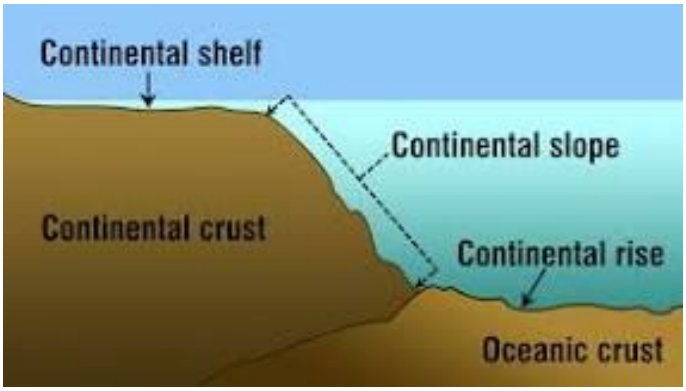
**Some marine islands are actually the peaks of Sea Mountains.**

**Answer :** The ocean floor is the land beneath the ocean. It contains diverse submerged landforms. There are several submerged hills and mountains on the ocean bed. They comprise of various hills of various sizes. The peaks of some of these mountains come above the sea level. These are known as marine islands. Ex: Iceland, Andaman and Nicobar Islands.

**Q. 3. D. Give geographical reasons:**

**The continental slope is considered to be the boundary of continents.**

**Answer :** The continental slope is the transitional region connecting the continental shelf and the ocean basin. It begins after the extent of the continental shelf is over with a steep slope. The continental crust (30km) is thicker than oceanic crust (7-10km), thus continental slope is considered to be the boundary of continents.




**Q. 3. E. Give geographical reasons:**

**The disposal of waste materials in the oceans by man is harmful to the environment.**

**Answer :** Various types of materials get deposited on marine beds. Materials like pebbles, clay, volcanic ash etc get deposited by natural process. However, some man-made wastes like micro plastics, sewage, solid waste, the radioactive material also get deposited on large scale. The Great Pacific Garbage Patch in the central North Pacific Ocean is the largest accumulation of ocean plastic in the world. The disposal of these wastes in oceans can be harmful to the environment. For instance, marine animals often mistake micro plastics as food because of their small size. These plastics contain toxic chemicals and consumption of these can cause disease and affect reproduction.

**Q. 4. Observe the map on Pg. 27 in 'Give it a try' and answer the following questions:**

**(a) Madagascar and Sri Lanka are related to which landform of the ocean floor?**

**(b) Near which continent are these landforms located?**

**(c) Which islands in our country are examples of peaks of submerged mountains?**

**Answer : (a)** These can be considered as Marine Islands i.e. as peaks of the submerged mountains and hills on the ocean bed.

**(b)** Sri Lanka is located near Asia and Madagascar near African continent.

**(c)** Andaman and Nicobar Islands. These are considered to be emergent peaks of a submerged mountain range related to the Arakan Yoma range of Myanmar.

## Activity

**Q. 1. Prepare a model of the ocean floor.**

**Answer :**

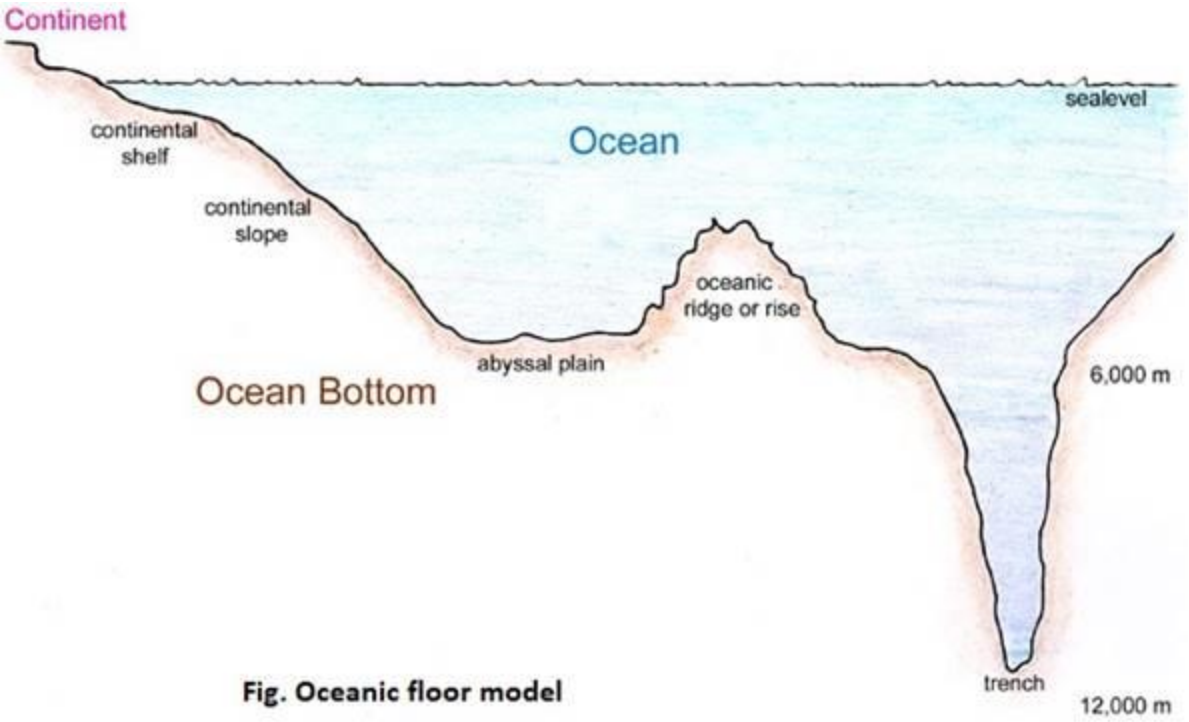



Fig. Oceanic floor model

## Intext Questions

**Q. 1. • Continents and oceans are a part of the lithosphere and hydrosphere respectively.**

**• Continents and oceans lie on plates**

**• During low tides, the level of ocean water goes down and the land below the water near the coast is exposed.**

**• Ships wreck when they strike against the rocks in the ocean.**

**If the above points are correct, then select the most appropriate option from the following:**

**(i) The surface of the earth is occupied by land and water**

**(ii) There is land below the ocean too.**

**(iii) Even if the water has the same level, the land submerged is not even.**

**(iv) The level of water and land is uneven.**

**(v) Discuss in the class regarding the choice of your options. Know from your teachers about the correct option.**

**Answer :** 1. Continents are a part of lithosphere and oceans and other water bodies are a part of the hydrosphere. Lithosphere essentially relates to land and hydrosphere essentially relates to water. Hence the statement is true.

2. Yes, continents and oceans lie on plates. There are continental plates and oceanic plates on which continents and oceans lie. The movement of these plates affects the movement of the continents and oceans.

3. True. The statement is true as low tides refer to the decrease in the height of the waves of the ocean which are otherwise referred to as tides. Hence when there are low tides, the level of water goes down and the land area is exposed.

4. Yes, when ships hit the hard rocks, they break down.

All the points above are correct, hence the most appropriate answer or choice would be:

There is land below the ocean too.

**Q. 2. If the classification of landforms on land can be done on the basis of altitude and size, then how can the landforms submerged under water be classified?**

**Answer :** If the classification of landforms on the land can be done on the basis of altitude and size, then the landforms submerged under the water might be classified based upon their depth or the shape they make with the flowing water that carries the mud, silt and other residues on the way of its disposal in the seas and oceans. These landforms formed by water are usually called the coastal landforms and they include stacks, stumps, caves, arches, bays, coves, beaches and cliffs.

**Q. 3. Try to name the landforms shown in figure 4.1**

**Answer :** Mountain, continental coast, continental shelf, continental slope, abyssal plain, marine trench, marine deep, mid-oceanic ridges.

**Q. 4. What parameters were used for classifying the landforms on the earth?**

**Answer :** The heights of the landforms, the distance of them from the ground level and ocean level, etc were used for classifying the landforms on the earth.

**Q. 5. What parameters were used for naming the landforms below water?**

**Answer :** The establishment of criteria with fixed parameters, use of DEMs for variables calculation allows the relief mappings are reducing subjectivity, the depth of the landforms inside the ocean etc.

**Q. 6. From the map of the ocean floor identify the ocean.**

**Answer :** The ocean in the map is Indian Ocean.

**Q. 7. Can you identify and name the submerged landforms shown in the diagram?**

**Answer :** Mountain, continental coast, continental shelf, continental slope, abyssal plain, marine trench, marine deep, mid-oceanic ridges.

**Q. 8. Which region would be ideal for fishing and why?**

**Answer :** The continental shelf is very important from the point of view of humans. Extensive fishing grounds are found on the continental shelf. As this part is shallow, the sunlight reaches its bed. Algae, plankton, etc. grow here. This is food for fish.