

Denudation

Exercises

I. Short Answer Questions

Question 1.

What do you mean by denudation ?

Answer:

Denudation is the wearing away of landmass by various processes like weathering, erosion mass movement and transportation. It results in lowering the level of land, rounding exposed rock surfaces and levelling the peaks.

Question 2.

Name important factors which affect work of a river.

Answer:

Refer Long Answers Question 1

Question 3.

What is the main function of a river in its upper course in land formation ?

Answer:

In the upper course the dominant activity of a river is erosion. Many land forms are shaped by this activity of the river. Along its course, it erodes bed and banks, and carries large boulders of rock with it. Under the impact of rush of water.

Question 4.

Name two important land forms of river erosion.

Answer:

The two landforms resulting from erosion in the upper course of a river are the following :

1. **V-shaped Valleys** : It is formed from a stream eroding downward, through a process, called down cutting. These valleys are formed in the initial stages of rivers and have steep slopes.
2. **I-shaped Valley** : In regions of hard rocks it develops almost vertically in an I-shape. River valleys are normally formed in areas of sufficient rainfall and where rocks are not very hard or resistant.

Question 5.

How is a waterfall formed ?

Answer:

Waterfall : A waterfall is generally formed due to large differences in the rate of erosion. The smaller differences lead to formation of step-like features known as rapids. The water that falls down the edge of a hard resistant rock may have at the bottom a soft rock. It is this soft rock that gets eroded fast and creates a hollow basin called plunge pool. Some of the world's highest and best known falls are Angel Falls (986 m) in Venezuela and Yosemite fall (778 m), California, USA.

Question 6.

State the main function of a river in its middle course.

Answer:

At this stage, the gradient is reduced, and the river flows more slowly. The middle course of the river begins when it leaves the mountains area and enters the plains. In the middle course the energy required to transport the materials is just enough to drag large particles. Fine particles remain suspended in water, large particles are just dragged along the bed of the river and smaller ones are rolled down in the centre. The river also gets windened as a result of great volume of water and the impact of the load.

Question 7.

How are meanders formed ?

Answer:

River meanders are bends of longitudinal courses. S-shaped meanders which are common to most rivers result when a ^ channel-forms a curved path. These are the result of both erosion and deposition work of rivers.

Meanders generally form under conditions of a gentle slope and sufficient water in rivers. The river flow is diverted by an obstruction allowing the river to do lateral erosion work.

Question 8.

Name two landforms in the lower course of a river.

Answer:

1. **Delta** : The river divides itself into many distributaries. These distributaries are also subdivided into mini-distributaries. This is due to depsoition of sediments over a large'area near the mouth of rivers. Such sedimentation occurs on the sides of the stream, at the mouth, in the front part as well as in the bed of the river. The deposition over a large area results in a triangular-shaped formation called delta. It resembles the Greek letter A The Ganga-Brahmaputra delta is growing towards the sea. It is also one of the largest in the world.
2. Oxbow lakes are also formed in the lower course of a river.

Question 9.

Where is wind erosion most predominant ?

Answer:

The wind erosion is most predominant in arid regions. Since there is little vegetation or moisture to bind the loose surface materials, the effects of wind erosion are more pronounced in the desert region.

Question 10.

What are known as Deflation Hollows ?

Answer:

Deflation Hollows : Deflation involves the lifting as well as the blowing away of loose materials from the ground. The sands and pebbles are carried in the air or driven along the ground. The finer dust and sands may be deposited even outside the desert margins. Deflation results in the lowering of the land surface to create depressions called deflation hollows.

Question 11.

Name one chief landform of wind deposition ?

Answer:

Hamada is the hard bedrock exposed after sweeping away of the dust and sand by the wind.

Question 12.

Name two chief types of sand dunes.

Answer:

The following two types of sand dunes are seen

1. **Barchan** : These are moon-shaped dunes. They are live dunes which advance steadily before winds that blow from a particular direction. They are found in the deserts of the Sahara. These are initially formed by an accumulation of sand at an obstacle, such as a heap of rocks. These occurs transversely to the wind, so that their horns thin out and become lower in the direction of the wind.
2. **Longitudinal Dunes or Seifs** : These are long and narrow sand-ridges which grow parallel to the direction of the prevailing wind. They are found in the interior parts of deserts. In the Libyan desert, they are known as Seifs (means 'sword' in Arabic). In the Thar Desert they are confined to the western margin, where the force of south-west monsoon influences their formation. An important feature of such a dune is that in its crest line there are rise and fall patterns. Seifs are found in the Sahara, Iran, Thar Desert (India) and West Australia. These sand dunes are stationary and they remain in a fixed position.

Question 13.

State three chief characteristics of barchans.

Answer:

1. Barchans are moon-shaped dunes. They are live dunes which advance steadily before winds that blow from a particular direction.
2. They occur transversely to the wind, so that their horns thin out and become lower in the direction of the wind.
3. The windward side is convex and gently-sloping while the leeward side (being sheltered) is concave and steep.

II. Long Answer Questions

Question 1.

Briefly describe the factors which affect the work of a river.

Answer:

Various factors affect erosion, transportation and deposition work of a river. Important factors include the following :

1. **Velocity of water** : Erosion and transportation are both maximum when velocity is high. Deposition, on the other hand takes place when velocity of water is low.
2. **Volume of water** : The larger the volume of water, the greater is the power of erosion and transportation. Deposition, on the other hand, takes place better when there is reduced volume of water as well as when the load is greater.
3. **Load** : Load is the material transported by a river. The load of a river, does all the work of erosion and deposition. Mass wasting, deepening of river valleys and formation of landforms depend on the load a river carries.

Question 2.

Describe chief landforms of river deposition.

Answer:

The chief landforms resulting from the deposition of a river are the following :

1. **V-shaped Valleys** : It is formed from a stream eroding downward, through a process, called down cutting. These valleys are formed in the initial stages of rivers and have steep slopes.
2. **I-shaped Valley** : In regions of hard rocks it develops almost vertically in an I-shape. River valleys are normally formed in areas of sufficient rainfall and where rocks are not very hard or resistant.

Question 3.

Write a short note on the three stages of a river.

Answer:

From the source to its mouth, a river is divided into three main sections – Upper Course, Middle Course and Lower Course. These three sections are also called the Profile of a River.

- **Upper Course** – In the upper course the dominant activity of a river is erosion. Many land forms are shaped by this activity of the river. Along its course, it erodes bed and banks, and carries large boulders of rock with it. Under the impact of rush of water.
- **Middle Course** – At this stage, the gradient is reduced, and the river flows more slowly. The middle course of the river begins when it leaves the mountains area and enters the plains. In the middle course the energy required to transport the materials is just enough to drag large particles. Fine particles remain suspended in water, large particles are just dragged along the bed of the river and smaller ones are rolled down in the centre. The river also gets windened as a result of great volume of water and the impact of the load.
- **Lower Course** – The river divides itself into many distributaries. These distributaries are also subdivided into mini-distributaries. This is due to depoition of sediments over a large area near the mouth of rivers. Such sedimentation occurs on the sides of the stream, at the mouth, in the front part as well as in the bed of the river. The deposition over a large area results in a triangular-shaped formation called delta. It resembles the Greek letter A The Ganga -Brahmaputra delta is growing towards the sea. It is also one of the largest in the world. Oxbow lakes are also formed in the lower course of a river.

Question 4.

Describe the work of wind erosion and state two important landforms of wind erosion.

Answer:

Winds move along the desert floors with great speed and the obstructions in their path create turbulence. Storm winds are formed which are very destructive. Winds cause deflation, abrasion and impact. Deflation includes lifting and removal of dust and smaller particles from the surface of the rocks. The impact is the simply the shear force of momentum which occurs when sand is blown into or against a rock surface. These are the ways in which wind action creates a number of interesting erosional and depositional features in the deserts.

Winds are not the only agent responsible for the erosional features of the deserts. Along with winds the running water is also important for this.