GEOMORPHIC PROCESSES AND LANDFORMS OF THE EARTH

1. Identify the correct answer

a) The study that deals with landforms and the processes that shape them is called, Biology/ Geomorphology / Physics / chemistry

Ans Geomorphology

b) The geomorphic processes which are active on the earth's surface are called, Photosynthesis/ Earthquake / Terrestrial processes/ Volcanism

Ans Terrestrial processes

c) The Geomorphic processes that act at the interior of the earth are called, Endogenous/ Exogenous/ degradation / aggradation

Ans Endogenous

d) The exogenetic force derives energy from, moon/ sun / slope / running water

Ans running water

e) The mountain building movement is known as : Epirogenic movement/ weathering / Orogenic movement / Volcanism.

Ans Orogenic movement

f) Mountains are those landforms that rise above : 1000m / 600m / 300m / 200 m from the sea level

Ans 1000m

g) The plate Tectonic theory advocates the formation of : relict mountain / fold mountain / volcanic mountain / black mountain.

Ans Fold mountain

h) An example of old fold mountain is Alps / Himalayas / Aravalli / Rockies.

Ans Aravalli

(i) An example of Bloch mountain is : Himalayas / Aravalli / Black Forest / Nilgiri

Ans Black Forest

(j) The plateaus which have mountains surrounding them are called: lava plateau / intermontane plateau / Dissected plateau / Continental plateau

Ans Intermontane plateau

(k) The plains which are formed by the deposition of rivers near their mouths are called : flood plain / Karst plain / Deltaic plain / loess plain.

Ans Deltaic plain

(l) Vale of Kashmir is an example of Flood Plain / Lacustrine plain / loess plain / Till plain.

Ans Lacustrine Plain

2. If the sentence is true write T and if false write F against the following.

a) Volcanism is a type of exogenetic process - False

b) Up folds or anticlines are found in Bloch mountains - False

c) The geomorphic process responsible for the formation of alluvial plain is aggradation - True

d) The Chhotanagpur plateau is an example of dissected plateau - True

e) The plates which form the ocean beds are called continental plates - False

3 Fill in the blanks with appropriate words.

a) The mountains have steep slopes and high conical peaks

b) The young fold mountains were formed about 60-70 million years ago.

c) Volcanic mountain is the dome shaped mass of igneous rock formed by intrusion of magma.

d) The African plateau, Australian plateau, Antarctic plateau are parts of ancient Gondwana plateau

e) Ox-bow lakes is one of the features seen on a flood plain.

4) Answer in word or words.

a) Which is the highest plateau in the world?

Ans Pamir

b) Which plateaus results from tectonic movement?

Ans Intermontane plateau

c) Name the mountains formed due to tensile forces and faulting.

Ans Block Mountains.

d) Name a residual mountain which was also an old fold mountain.

Ans Aravallis in India.

5) Short answer type questions.

a) What are Endogenic processes?

Ans The processes which are responsible for both slow and sudden changes of the earth's surface by compression, tension, uplifting etc are called Endogenic processes.

b) What are Exogenic processes?

Ans The processes which are actin on the earth's surface and are continuously modifying the primary landforms produced by endog-enetic forces through the agents of gradation like river, glacier, wind, sea waves as well as weathering, mass wasting are call-ed Exogenic processes.

c) What is Plate tectonic theory?

Ans Plate Tectonic theory is the most modern theory which is an outcome of investigation of the geologists T. Wilson, D. P. Mahanei, D.L. Pichou, the father of the theory explained it in 1968. This is the most important theory regarding the origin of the Fold mountains. According to this theory, continental cru-st consists of seven big plates, eight medium plates and twenty small plates.

d) What is a Bloch mountain?

Ans The mountain which is formed because of displacement of raised blocks of rocks due to the fracture or fault produced on the earth's crust by compressional or tensional forces on h-ard rocks is called Bloch mountain

e) What is Intermontane Plateau?

Ans The plateaus which are formed due to earth movement, during the formation of Fold mountains are called Intermontane Pla-teau. These plateaus are actually enclosed by the Fold mountain thats why they are called 'Intermontane Plateau' which means between mountain. Eg - Plateau of Iraq lies between Elburz in the north and Zagros in the south.

f) What is a Flood plain?

Ans In rainy season river floods its

plain. Eg - Flood plain of the River Nile in Egypt

g) What is a Residual mountain?

Ans The mountain that are formed as a result of erosion of Fold, Block and Volcanic mountain by the natural agents like river is called Residual mountain. Eg. Appalachian of the U.S.A.

h) What is orogenic movement?

Ans Orogenic movement occurs horizontally and results in formation of fold mountains through severe folding and affecting long and narrow belts of the earth's crust.

i) What is a Peneplain?

Ans An ancient highland when reduced to a plain land through denudation that is long continued erosion by either river, glacier or wind is known as Peneplain.

j) What are the features of a volcanic mountain?

Ans The features of a volcanic mountain are

i) They are conical shaped.

ii) They are formed of Igneous rock.

Answer the following question

2) Classify Terrestrial processes and write a brief note on any one of them.

Ans Terrestrial processes can be classified into two groups

i) Endogenous process ii) Exogenous process.

i) Endogenous process - The processes which are responsible for both slow and sudden changes of the earth's surface by compression, tension, uplifting, subsidence, rifting, deformation etc are called endogenous process. Excessive heat and intensive pressure of the earth's interior are responsible for such forces.

b) Describe the characteristics of a fold mountain

Ans The characteristics of a fold mountain are

i) They accupy extensive area.

ii) They are associated with anticlines and synclines.

iii) They are made up of sedimentary rocks.

c) How is a Dissected plateau formed?

Ans Dissected plateaus are formed by the weathering and erosion of high plateau by the natural agents like river, glacier, wind. e.g. Chotan-agpur plateau of India, Malnad of Karnataka etc.

d) How are the erosional plains formed on the earth?

Ans Erosional plains formed when the natural agents like river, glacier, wind reduce a highland, through long time of erosional works, in-to low plain land, such as Peneplain, Pediment.

e) Distinguish between a horst and a graben.

Ans The differences are as follows.

Horst	Graben
i) An uplifted block of crust boun-ded by two normal faults.	i) A valley formed by the down-ward displacement of a block of crust bounded by two faults
ii) Horst is represented by ridges.	ii) Graben are usually repre-sented by low lying areas

Correct the following.

a) The Orogenic movement causes formation of shields, plateaus etc.

Ans The Orogenic movement causes formation of Fold mountains

b) Residual mountains are called mountain of accumulation

Ans Volcanic mountain are called mountain of accumulation

c) Columbia Snake Plateau is an example of Intermontane Plateau.

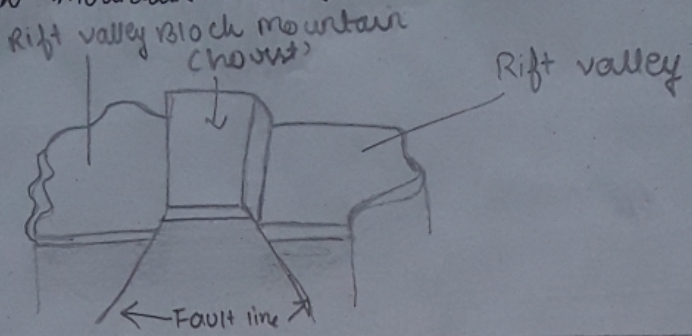
Ans Columbia Snake Plateau is an example of volcanic Plateau

d) Loess plain is formed of glacial boulders and rocks.

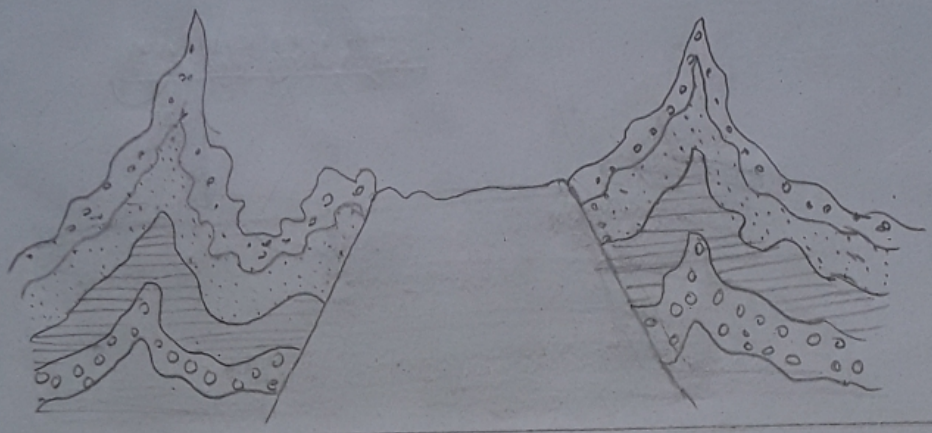
Ans Glacial plain is formed of glacial boulders and rocks.

Draw and label the following.

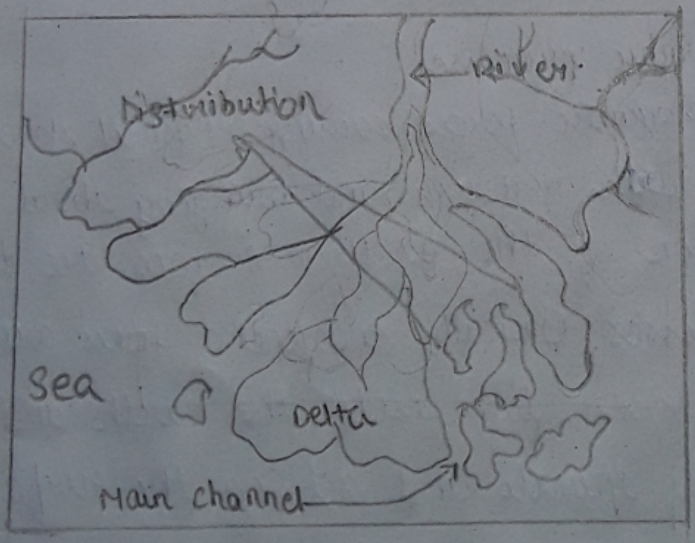
a) A Block mountain (horst)



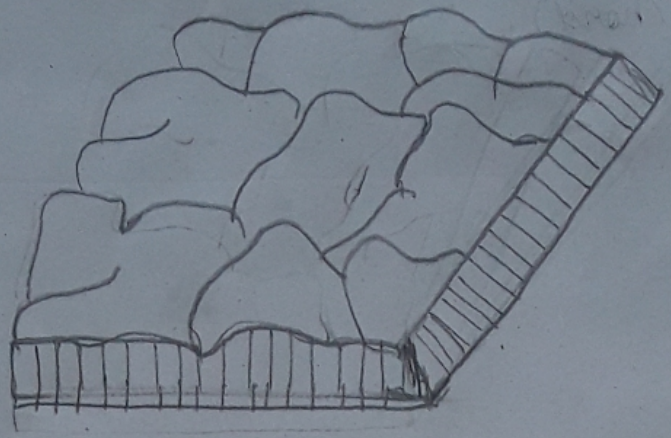
b) Intermontane Plateau



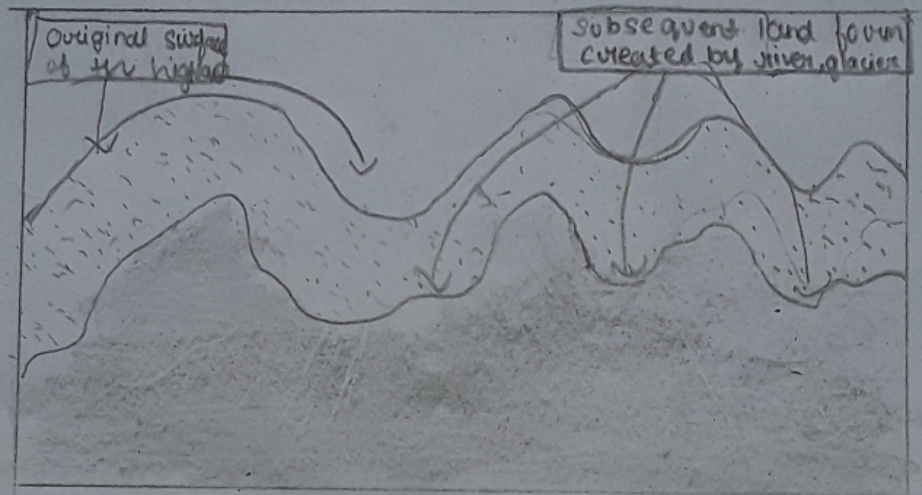
c) Deltaic Plain



d) Dissected Plateau.



e) Residual Mountain.



Essay type of long answer type question.

Q) Describe the processes that produce the initial landforms (mountains, plateaus etc) on earth.

Ans The processes that produce the initial landforms on earth is Endogenous processes. The geological process which occurs in the interior of the solid earth which includes tectonic movements of the crust and metamorphism is known as endogenous process. It is responsible for both slow and sudden changes of the earth's surface by compression and tension, uplifting, subsidence, rifting, deformation etc. Endogenous process helps in formation of fold mountains and is also known as constructive process.

The sources for endogenous process are heat and redistribution of material in earth's interior which is originated from radiation. The continuous generation of heat in earth's interior results in the flow of heat towards earth and surface and excessive heat and intensive pressure of earth's interior are responsible for endogenic forces. This process is responsible for earth's relief and formation of most important mineral resources

b) How are fold mountains formed? Explain in the light of Plate Tectonics.

Ans Plate Tectonic Theory is the most important theory regarding the origin of Fold mountains D.L. Pichou, the father of the theory explained it in 1968. According to this theory, continental crust consists of seven big plates, eight medium plates, twenty small plates. Plates are separated by fault lins and extend upto 70 km below the ocean and 150 km below the continents. Along the margins of the plates where two plates meet are found the plate boundaries. Plates are floating on the Asthenosphere due to convectional current produced by great temperatures in the earth's interior. They move very slowly about 1 or 2 cm per year. There are three types of plate boundaries i) (converg-

-ing (ii) diverging and (iii) neutral. Fold mountains are formed along the converging plate boundaries. They are of three types (i) Continental-Continental plate boundary (ii) Oceanic-Continental plate boundary and (iii) Oceanic-Oceanic plate boundary.

- When two continental-continental plates move each other geosyncline in between them is filled up by the sediments deposited from the marginal plates. The plates collide and horizontal pressure squeezes up the soft sedimentary rock layers of the sea floor into a series of fold to form great Fold mountains of the world.

- When two continental-oceanic plates converge, the denser oceanic plate sinks below the lighter continental plate. Eventually, one geosyncline develops in front of the continental plate. Ultimately sediments are deposited on this sea from which the folds are squeezed up to form the great Fold mountains.

4) Write the difference between volcanic mountain and residual mountain.

Ans The differences are as follows.

Volcanic Mountain	Residual Mountain
i) Volcanic mountains are formed as a result of the cooling down of lava and other materials that came out of volcano during volcanic eruption. Eg. Fujiama in Japan.	i) Residual mountains are formed as a result of erosion of Fold, Block and Volcanic mountain by the natural agents like river. Eg. Urals in Russia.
ii) These mountains are conical in shape.	ii) These mountains are rounded in shape.
iii) They are formed of Igneous rock	iii) They are formed either metamorphic or Igneous rock

iv) They are formed by Endogenic force	iv) They are formed by exogenic force
v) These mountains are higher in altitude as compared to residual mountain.	v) These mountains are comparatively lower.

c) Classify plateaus and write an account on any one of them.

Ans Plateaus can be classified into three groups

a) Intermontane ii) Continental iii) Volcanic

i) Intermontane Plateau - The plateaus which are formed due to earth movement, during the formation of Fold mountain are called Intermontane Plateau. They are called so because they are enclosed by the Fold mountains and the term ~~Therm~~ 'Intermontane plateau' means 'between mountains'. These mountains are high in altitude and found in young fold mountain region. It occupies an extensive area. Fossils are found in these plateaus. Climate is dry as they are surrounded by mountains. Eg. Tibetan Plateau

d) Describe the depositional plains with example.

Ans The plains which are formed by the deposition of sediments carried by various agents like wind, running water etc. They are mostly fertile areas. Depositional plains are of various types.

i) Alluvial plain - Formed by the deposition of silt and sand by a river.

ii) Flood plain - In rainy season river floods its countryside repeatedly. As a result, deposition of sand silt develops a thick plain called flood plain. Eg. Flood plain of river Nile in Egypt

iii) Deltaic Plain - At the mouth of a river, silts carried by a river are deposited to form a triangular plain land

which looks like the fourth letter of Greek Alphabet 'Δ' (delta). Eg- Ganga, Brahmaputra delta.

Glacial Plain - As the glacier descends down the slope of a mountain it melts at the ~~foot~~ foothills of the mountain where glacial-originated sands and gravels are deposited to form a plain called glacial plain. e.g. Ladakh Valley.

Lacustrine Plain - When a river empties into a lake its sands and silts are deposited in that lake. As a result, a portion of the lake is turned into a plain land known as lacustrine plain. e.g. Parts of Dal Lake in Kashmir.

Loess Plain - Fine sand particles transported by the wind from a desert, when dropped at a distant place, gradually accumulate there to form a thick plain called loess plain. Eg- Plains formed along the Hwang Ho river valley in China

Discuss the importance of mountains in the life of people.

Mountains have great positive influences. The importance of mountains in the life of people are:

- Existence of mountains control climate. e.g. The Himalayas obstruct the cold winds to enter India while gives rain by obstructing moist south-west monsoon wind.
- They are the source of big rivers like Ganga, Indus and Brahmaputra.
- They help in formation of extensive plains developed by the rivers originated on their peaks.
- Mountainland is ideal for hydel power.

v) They help as well by protecting a country from foreign invasion.

vi) They are rich in forest resource and scenic beauties of the mountainland develop Tourism.

Q) Why do people like to live in plains?

Ans The people like to live in plains as most of the plains of the world are fertile. As such, they are favourable for cultivation Eg- Gangetic plain of India, Po valley of Italy are the best agricultural land of the world. Good network of transport system has developed through roadways railways and waterways. As a result, the plains are well-communicated and help in development of industries and trade and commerce. Therefore, plains are densely settled areas of the world. Metropolis like Delhi, Kolkata, Mumbai, London, Paris have developed on the plains. The plains have developed the ancient civilisations also, such as the Egyptian civilisation, Indus civilisation, Chinese civilisation etc.