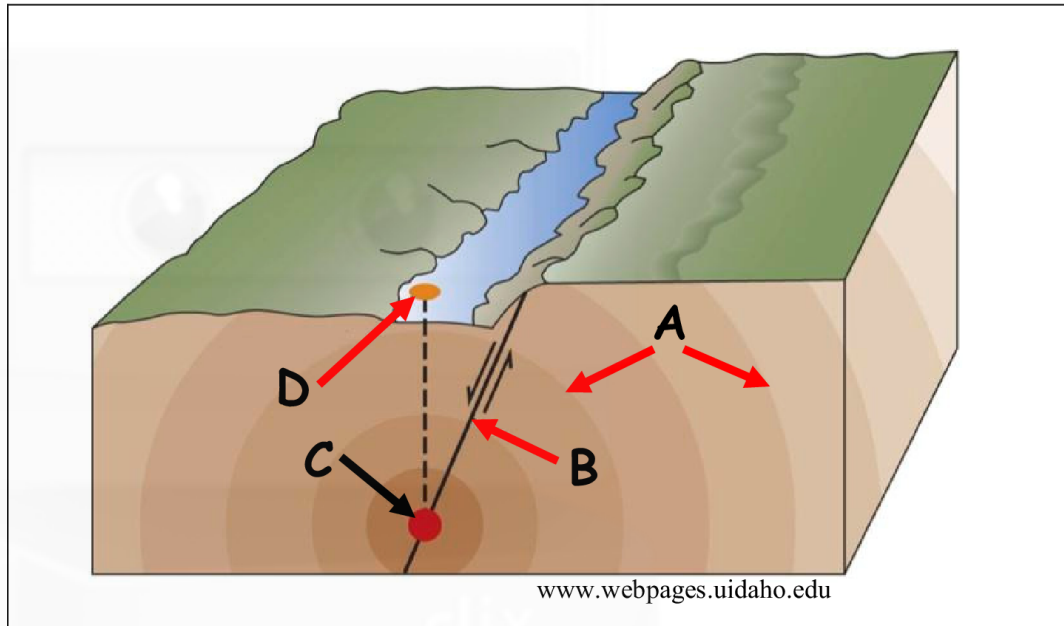


## 2. Earthquakes



- (i) Match each of the letters **A**, **B**, **C** and **D** on the above diagram with the correct feature in the table below.

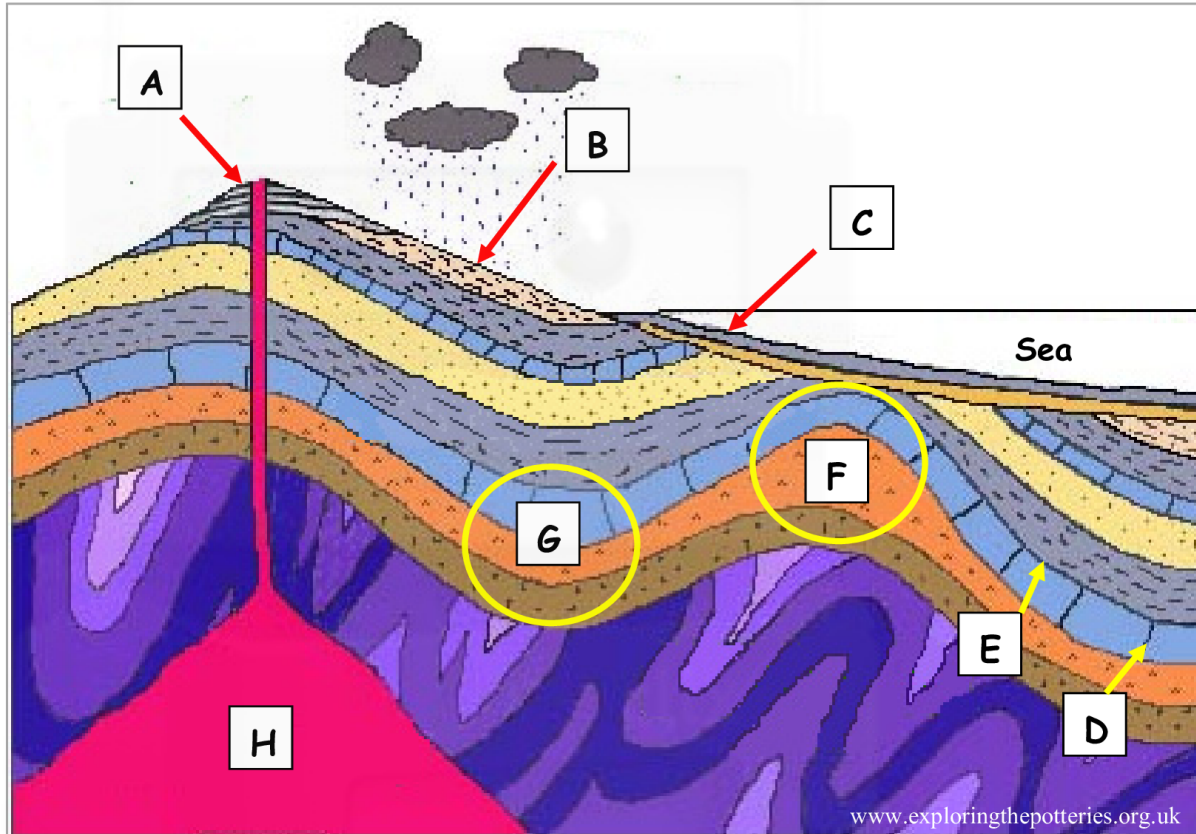
Feature	Letter
Focus	
Epicentre	
Seismic waves	
Fault line	

- (ii) Explain briefly each of the following terms.

Seismologist \_\_\_\_\_  
\_\_\_\_\_

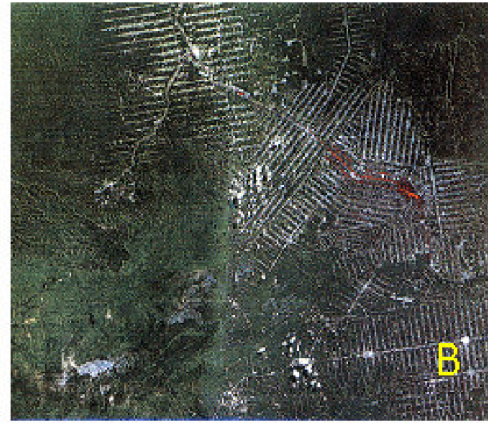
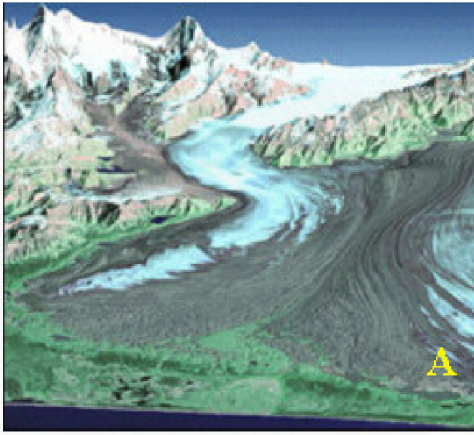
Seismometer \_\_\_\_\_  
\_\_\_\_\_

### 3. Patterns and Processes in the Physical Environment



Examine the diagram above. Match each of the letters A, B, C, D, E, F, G and H with the feature or process that best matches it in the table below.

Feature / Process	Letter
Joint	
Syncline	
Volcano	
Coastal deposits	
Bedding plane	
Magma chamber	
Weathering	
Anticline	



Source: USGS

Insert the correct letter A to D in the boxes below, to identify the various images.

Volcano (Mt. Etna)	
Delta (Mississippi)	

Deforestation (Brazil)	
Glacier (Alaska)	

[8]

Examine the map of the Pakistan-India border region and answer the questions that follow.

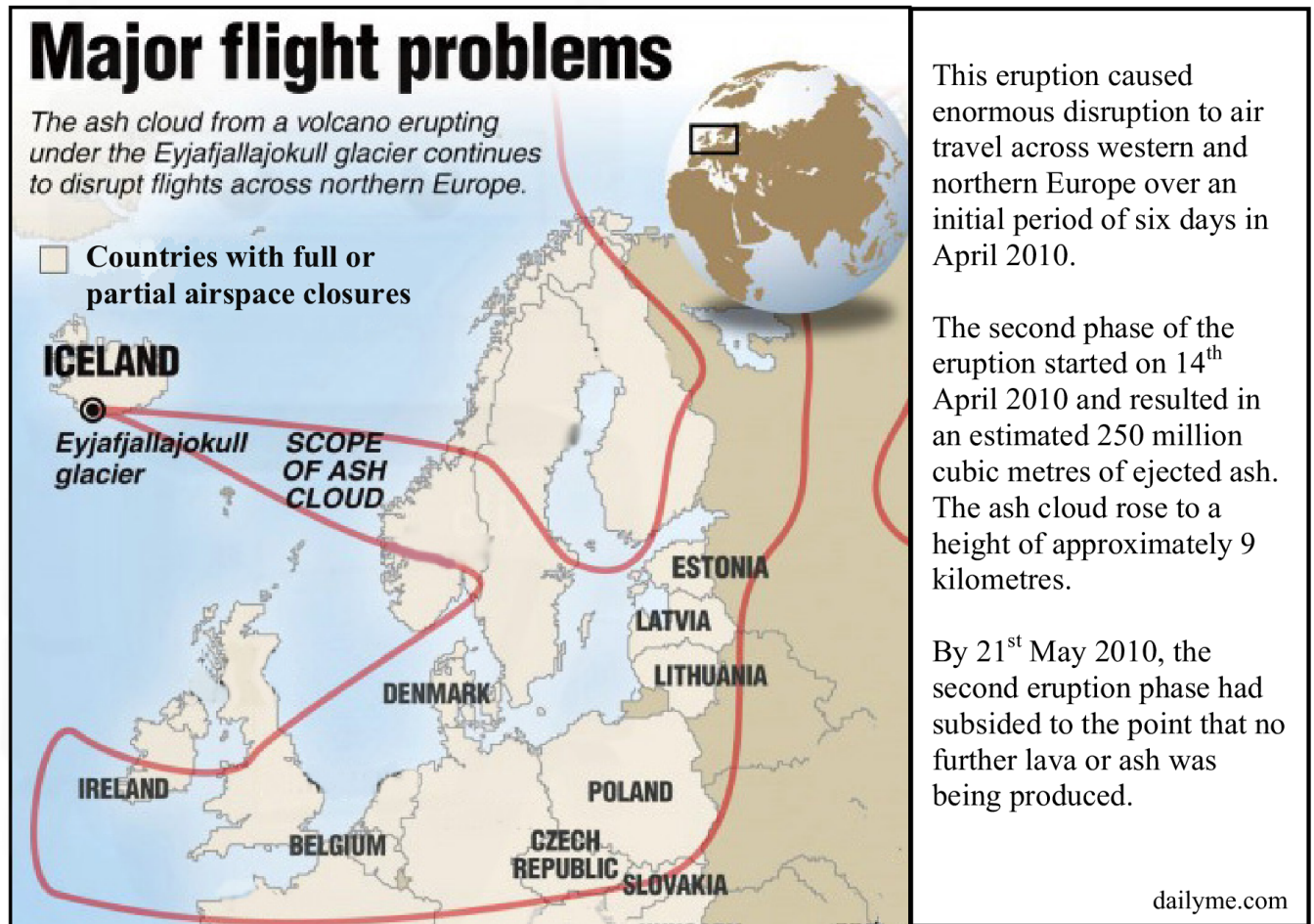


- (i) The point on the earth's surface directly above the focus of the earthquake – shown at A – is called the:
- .....
- (ii) Smaller shocks followed the main earthquake. These later shocks are called:
- .....
- (iii) Which of these cities is likely to have suffered the greatest damage: Uri, Balakot or Islamabad?
- .....
- (iv) To what scale does the term “7.6 magnitude earthquake” refer?
- .....

[8]



## A. Volcanoes

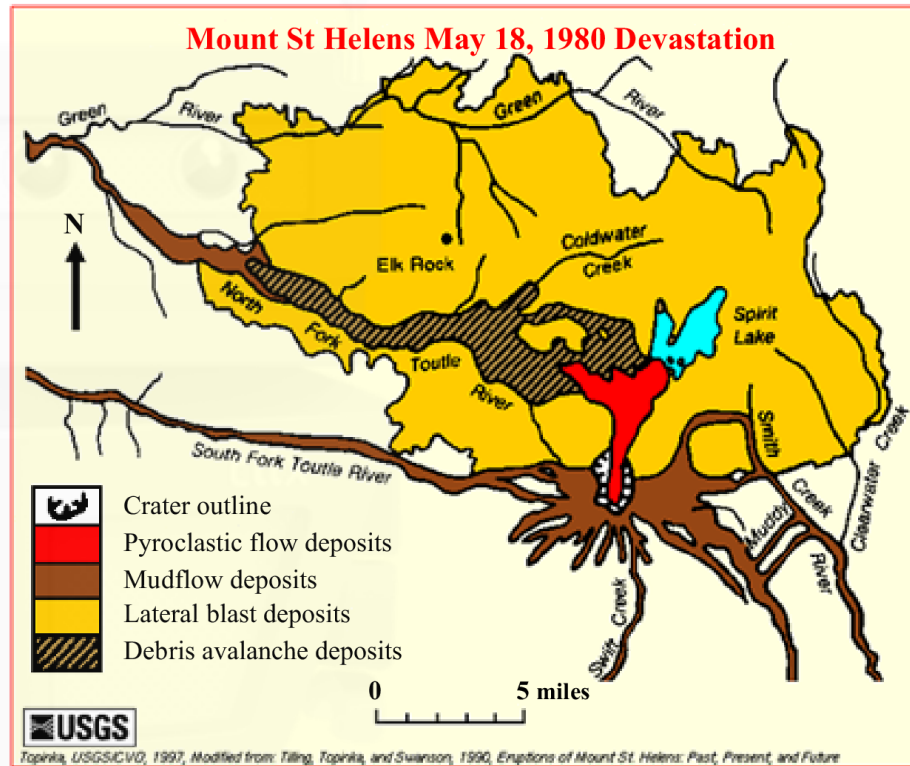


Examine the data above relating to the Eyjafjallajökull volcano which erupted in April 2010 and answer the following questions:

- (i) What approximate height did the volcanic ash cloud rise to?
- (ii) How many cubic metres of ash were ejected by the volcano?
- (iii) Name **two** countries not named on the map which had full or partial airspace closures.
- (iv) Briefly explain why volcanic activity occurs in Iceland.

[20m]

## A. Volcanoes



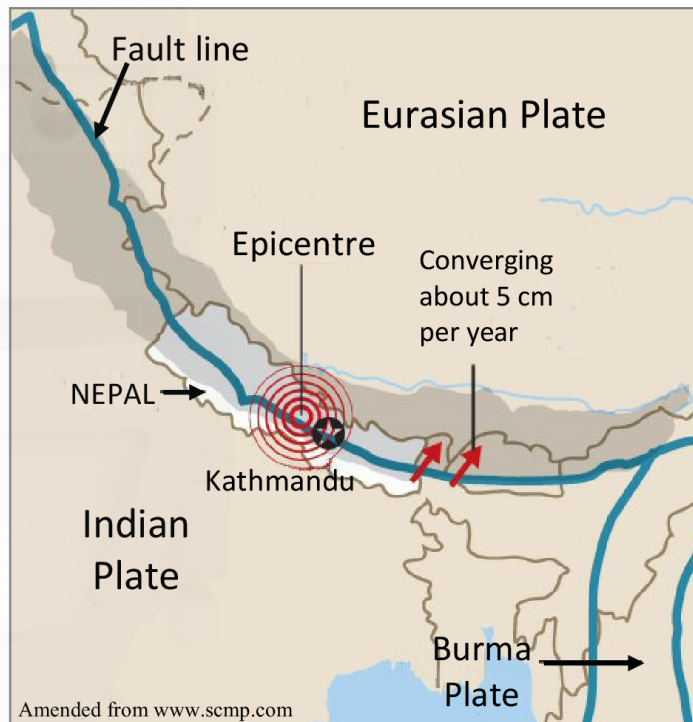
Examine the map and legend above showing the extent of the materials deposited as a result of the eruption of the Mount St Helens volcano and answer the following questions.

- (i) What were the most extensive deposits as a result of the eruption?
- (ii) What was the direction of the pyroclastic flow deposits?
- (iii) What distance did the pyroclastic flow deposits extend to?
- (iv) Name **two** examples of pyroclastic materials.
- (v) Explain briefly why some volcanoes erupt violently.

[20m]

## A. Earthquakes

Nepal Earthquake, 25 April 2015, Magnitude 7.8

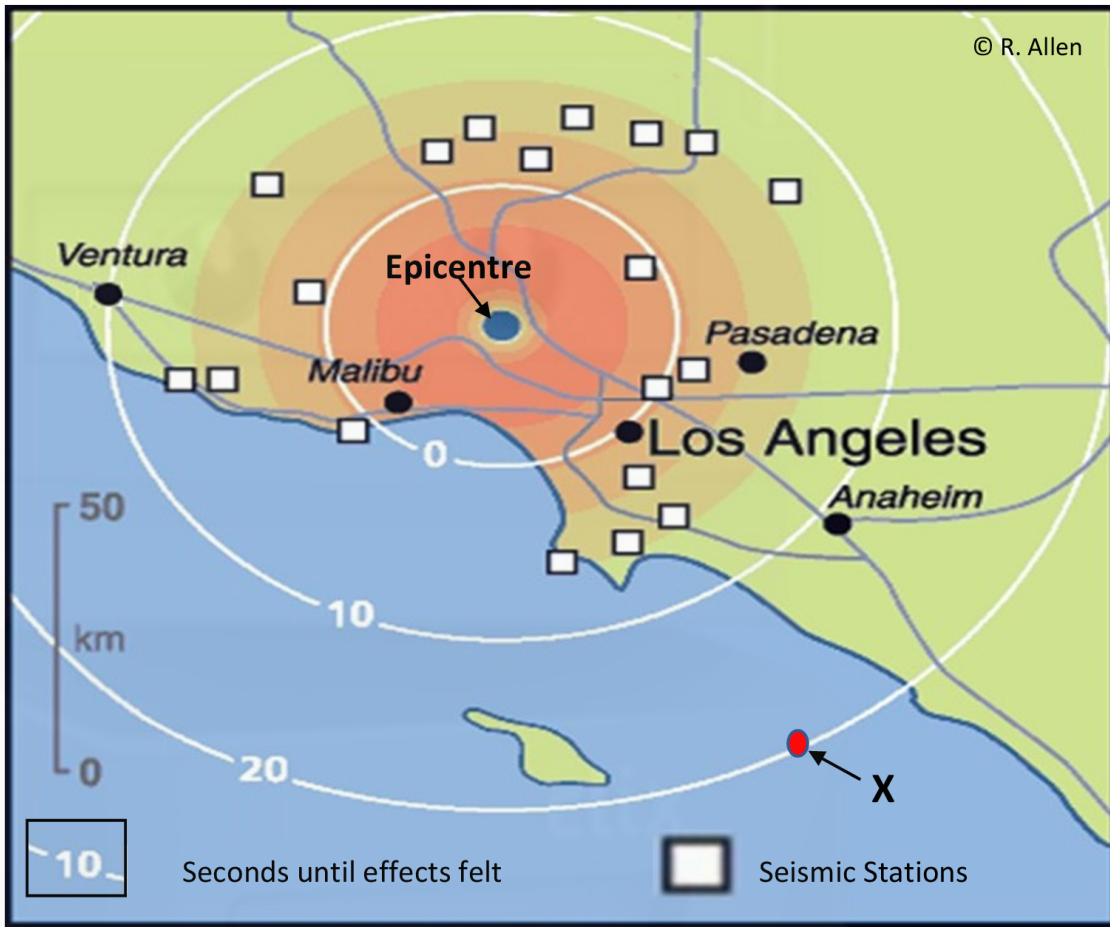


Examine the diagram above and answer each of the following questions.

- (i) What was the magnitude of the earthquake in Nepal in 2015?
- (ii) The movement of which **two** plates resulted in the earthquake in Nepal?
- (iii) What type of plate boundary is shown above?
- (iv) Name **two** other types of plate boundaries.
- (v) Explain briefly what is meant by the term *epicentre*.
- (vi) Explain briefly **one** way of reducing the impact of earthquakes.

[20m]

## 2A. Earthquakes



On January 17, 1994, the Northridge Earthquake, magnitude 6.7, rocked the Los Angeles area causing billions of dollars in damage, thousands of injuries and 60 fatalities. Roads crumbled, gas mains burst and caught fire and thousands of buildings were either destroyed or declared unsafe and later demolished.

Amended from [www.theatlantic.com](http://www.theatlantic.com)

Examine the information above and answer each of the following questions.

- (i) What was the magnitude of the Northridge earthquake in 1994?
- (ii) Which of the named Los Angeles urban areas was closest to the earthquake's epicentre?
- (iii) How long did it take (in seconds) for the effects of the earthquake to be felt in Ventura?
- (iv) How many kilometres did the seismic waves travel from the epicentre to point X?
- (v) State **one** negative impact of the earthquake, referred to in the text above.
- (vi) Explain briefly **one** function of a seismic station.
- (vii) Explain briefly **one** way of making infrastructure earthquake proof.

[20m]



**C. The Tectonic Cycle**

Examine how the tectonic cycle helps to explain the global distribution of **one** of the following:

- Volcanoes
- Earthquakes
- Fold Mountains.

**[30m]****C. Seismic Activity**

Explain how the occurrence of seismic activity can be predicted and its effects reduced.

**[30m]****C. Earthquakes**

Explain, with reference to examples that you have studied, how the theory of plate tectonics helps to explain the distribution of earthquakes around the world.

**[30m]**

Explain how the study of plate tectonics has helped us to understand the global distribution of volcanoes.

**[30m]**

Examine, with reference to actual examples, the measurement and effects of earthquakes.

**[30m]**

