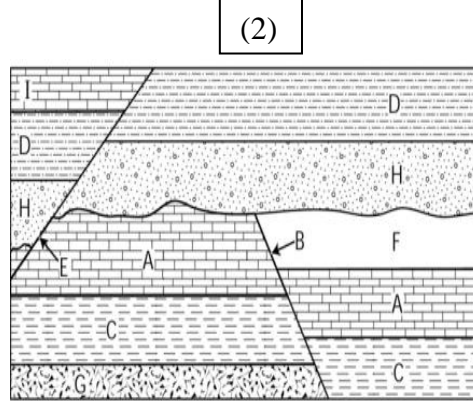
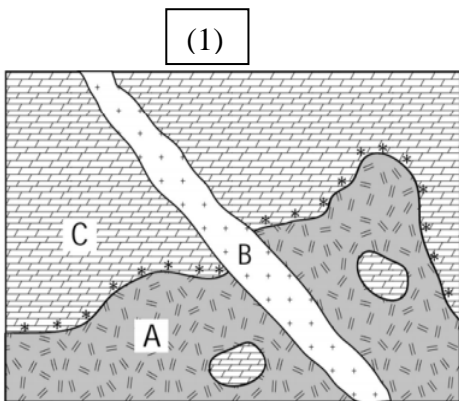


In this map, the lower boundary of limestone bed is exposed out at elevation 1150m. The solid line represents the contact between lower boundary of siltstone bed (with thickness of 250 m) and upper boundary of marlstone bed (with thickness of 150 m). Point A (36° 37' 17.5" N, 44° 29' 6.5" E) represents the contact between lower boundary of Shale bed, which is covered by the marlstone bed, and upper boundary of sandstone bed, which is covered the remained area on the map. The beds are horizontal.

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- Q1/ Complete the map by drawing the outcrops of the beds.
  - Q2/ On the grid, construct the geologic cross-section along line X-Y.
  - Q3/ Write the elevation of point B.
  - Q4/ Bold the location of the main river and draw the main valley that flow into the main river.
  - Q5/ Determine the Maximum relief on the map.
  - Q6/ Calculate the distance between A-B in km.
  - Q7/what type of scale used? Convert to another one
  - Q8/ discuss the topographic feature of the map
  - Q9/ plot the river on the map
  - Q10/ fill the legend by suitable lithologic symbols of the beds with writing the name of them.
  - Q11/ construct the geologic column of the beds.
  - Q12/ what is the topographic feature around point (S)?
  - Q13/ what is the maximum relief on the map?
  - Q14/ what is the minimum relief between point S and B
  - Q15/ write the contour interval of the map.

**Q16/** by using the laws of superposition, inclusions and cross-cutting relationships, determine the relative ages of the following cross-sections from the **Oldest** to **Youngest**.




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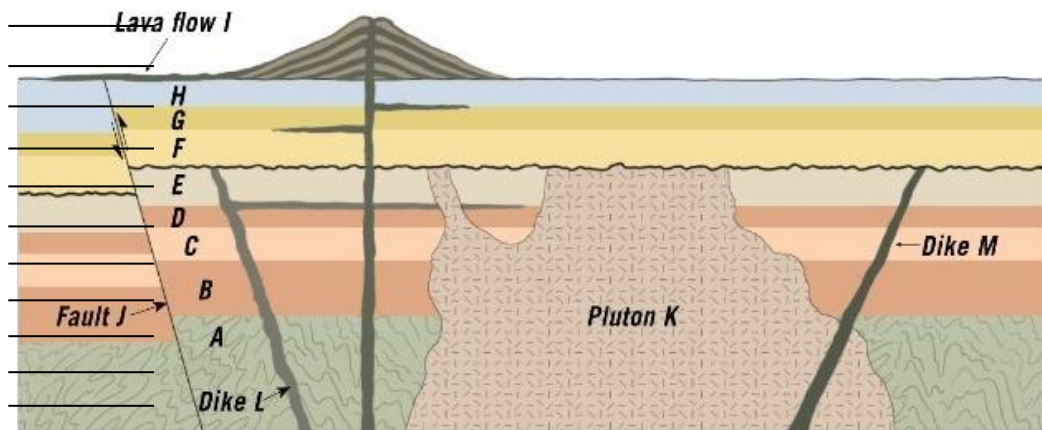
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(3)




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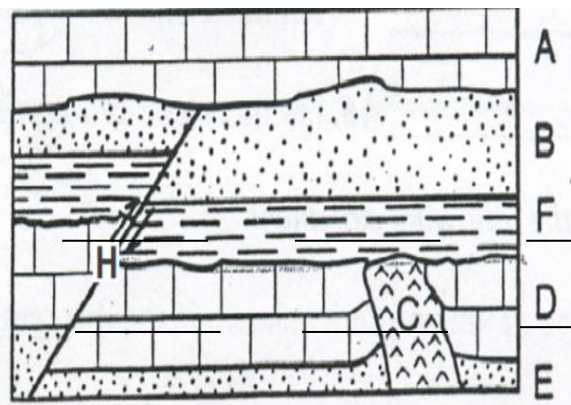
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**Exercise:**

Q17/ What happened first in this picture (the igneous pluton **C** or the fault line **H**)? Why?

Q18/ Which rock layer was formed last (A, B, F, D or E)? Why?

Q19/ Number the rock layers and events according to their relative ages. Label the oldest one by #1.



Q19/  
A.B.

C.

D.

E.

F.

H.

- Q20/ Determine the attitude of the beds.
- Q21/ Determine the apparent thickness of the beds
- Q23/ Determine the true thickness of each bed.
- Q24/ On the grid, construct the geological cross section along (X-Y)
- Q24/ draw the geological column by using true thickness.
- Q25/ Discuss the map

