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Atmospheric layers (10 marks)

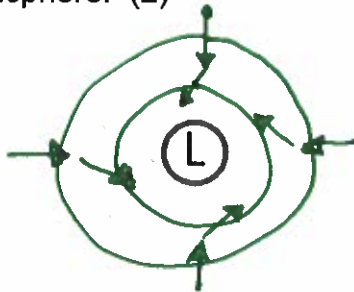
1. Identify the atmospheric layer that corresponds to the description. (3)
 - a. The layer that has the highest atmospheric pressure. troposphere
 - b. The ISS (International Space Station) orbits in this layer. thermosphere
 - c. The layer in which GPS satellites orbit. exosphere
2. Which two layers of the atmosphere exhibit a significant warming? For each layer, explain why it heats up. (4)

Thermosphere because absorbs most of the cosmic rays.

Stratosphere because contains ozone which absorbs UV

Atmospheric pressure

3. The Coriolis Effect deflects air to the (left / right) in the Northern Hemisphere. Use this fact to draw the circulation of air around a cyclone in the Northern Hemisphere. (2)



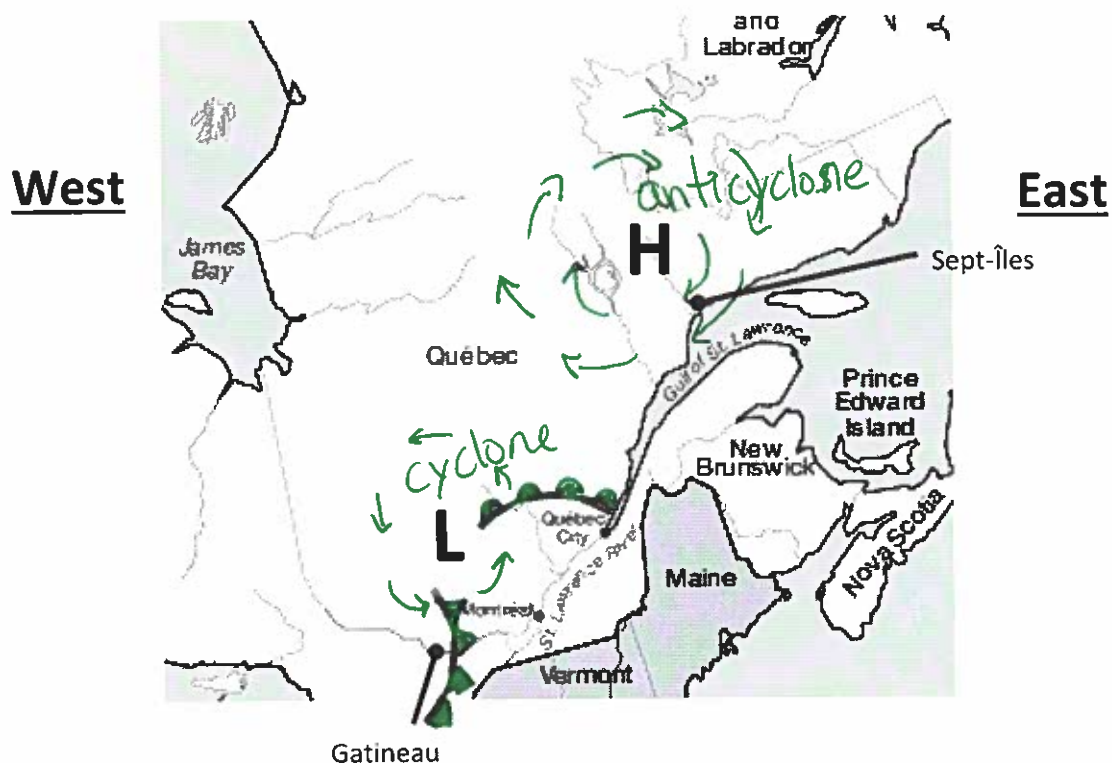
4. The air in a hot air balloon is heated and causes the balloon to rise. Explain this phenomenon. (1)

The air molecules are move faster and bounce further apart.

The less dense air risses.

5. As you climb to the top on a very high mountain, you notice that you need to slow down and breathe deeply. Explain why the air is "thinner" here. (1)

Gravity holds air molecules close to the ground.
Therefore there are less air molecules the higher you climb.



Currently there is a depression hovering moving north of Gatineau while an anticyclone is passing north-west of Sept-Îles. (9 marks)

1. Describe the current weather in Gatineau. (1) cold front. wind + heavy rain
2. Describe the current weather in Québec City. (1) warm front cloudy + showers
3. Describe the current weather in Sept-Îles. (1) H sunny
4. What types of clouds have formed at the warm front? (1) nimbostratus
5. What type of clouds have formed at the cold front? (1) cumulus
6. In this case, in what direction is the wind generally blowing in **Sept-Îles**? (2)
 Circle one pair: Northeast → Southwest or Southwest → Northeast
 Why? anticyclones rotate clockwise
7. In this case, in what direction is the wind generally blowing in **Montreal**? (2)
 Circle one pair: Northeast → Southwest or Southwest → Northeast
 Why? cyclones rotate counter-clockwise