

TEST No. 7

TOPIC: ATMOSPHERE

SUBJECT: PHYSICAL GEOGRAPHY

Explanation:

Question 1

Answer: C

Explanation: The height of tropopause is 17 km over equator and 9-10 km over poles. There is also seasonal variation in height of tropopause. Its height is 17 km during January and July over the equator and temperature at this height is -700C. The height of tropopause during July and January over 45° N is 15km (temperature - 600C) and 12.5 km(temperature -580C) respectively. It is apparent that temperature at the top of tropopause is lowest over the equator(-700C) and it is relatively high over the poles. Since temperature decreases upwards at the rate of 6.50C per 1000m and hence it is natural that temperature at the height of 17 km over the equator become much lower than at the height of 9-10 km over the poles.

Question 2

Answer: B

Explanation: The auroras are produced by the charged particles from the sun captured by earth's magnetic field at heights of about 100 km. it is a luminous phenomenon seen in the sky at night in high latitudes. It may be visible as arcs of lights or as coloured curtains, streamers of rays. Auroras occur most frequently during the intense periods of the 11 year sunspot cycle. In the Northern Hemisphere, they are called **aurora borealis** and in the Southern Hemisphere as **aurora australis**

Question 3

Answer: A

Explanation: Height of troposphere increases during summer

Question 4

Answer: b

Explanation: there is no relation between height of mesosphere with pole and equator.

Question 5

Answer: a

Explanation: E layer: Also known as Kennelly – Heaviside layer, is confined in the height between 99km -130km.

Question 6

Answer: c

Explanation: all are true

Question 7

Answer: b

Explanation: the part of atmosphere beyond mesopause is known as thermosphere where temperature increases rapidly with increasing height. It is estimated that temperature at its upper limit (height undecided) becomes 1700 C. it may be pointed out that this temperature can not be measured by ordinary thermometer because gases become extremely light due to extremely low density that is why one does not feel warm when stretched arm in the air.

Question 8

Answer: b

Explanation: Auroras are the result of disturbances in the magnetosphere caused by solar wind. These disturbances alter the trajectories of charged particles in the magnetospheric plasma. These particles, mainly electrons and protons, precipitate into the upper atmosphere (thermosphere/exosphere). The resulting ionization and excitation of atmospheric constituents emit light of varying colour and complexity

Question 9

Answer: d

Explanation: The temperature decrease with increasing height from the earth' surface at an average rate of 6.5°C per kilometer because of the following reasons. (i) major source of atmospheric heat is the earth's surface from where heat is transferred to the atmosphere through the processes of conduction, radiation and convection. Thus, the portion of the atmosphere coming in direct contact with the earth's surface gets more heat from the ground surface than the portion lying above because as we ascends higher in the atmosphere the amount of heat to be transported above decrease and hence temperature decreases aloft. (ii) The layers of air are denser near the earth's surface and became lighter with

increasing altitudes, the lower layer of air contains more water vapour and dust particles than the layers above, and hence it absorbs large amount of heat radiated from the earth's surface than the upper.

Question 10

Answer: d

Explanation: **Exosphere is layer of thermosphere not opposite**