UNIVERSITY OF JOHANNESBURG

DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL MANAGEMENT & ENERGY STUDIES

MODULE:	**GR1BFET Geography for Education Introduction to Geography**
CAMPUS:	**APK**
ASSESSMENT:	**SEMESTER TEST OCTOBER 2021**

DATE: 14 OCTOBER 2021 **SESSION: 8:00 – 09:30**

ASSESSOR: **Ms D Greenberg**

MODERATORS: **Prof. C. Kelso**

DURATION: 90 MINUTES **MARKS: 60**
PAGES INCLUDING COVER: 8

SURNAME _____ INITIALS _____

STUDENT NUMBER _____

Please read the following instructions carefully:

1. Answer ALL questions
2. Question 1 and Question 2 are to be answered directly on this test paper
3. Question 3, 4 and 5 must be answered in your test booklet.
4. Please number your answers clearly

QUESTION 1

FILL IN THE MISSING WORDS IN THE SPACES PROVIDED

1.1) In the southern hemisphere, the **Summer solstice** occurs on or around the 21 December. At this time, the Subsolar point is over the **Tropic of Capricorn** **(2)**

1.2) In the southern hemisphere, the **Autumn equinox** occurs on or around the 21 March. At this time, the Subsolar point is over the **Equator** **(2)**

1.3) In the southern hemisphere, the **Winter solstice** occurs on or around the 21 June. At this time, the Subsolar point is over the **Tropic of Cancer** **(2)**

1.4) Subsolar point is the location where insolation is perpendicular to the surface. (1)

1.5) Influent conditions occur when the water table is lower than the stream channel. (1)

1.6) Other than ice sheets and glaciers, the largest repository of fresh water is located in **groundwate**r. (1)

1.7) Capillary water is water held in the micropores of the soil due to surface tension properties (cohesion and adhesion are stronger than the force of gravity. (1)

1.8) The upper limit of the water that collects in the saturation zone is the **water table.** **(1)**

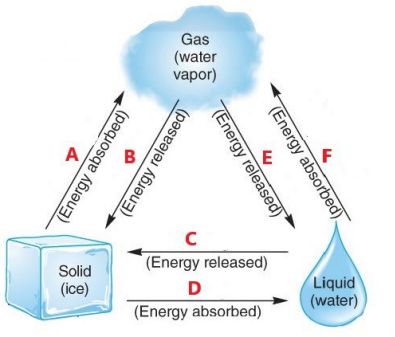
1.9) A/an **aquifer** is a rock layer that is permeable to groundwater flow in usable amounts.(1)

1.10) Dew-point temperature is the temperature at which a given mass of air becomes saturated and net condensation begins to form water droplets. (1)

[13]

QUESTION 2

The figure below shows the phase changes of water. Label the letters A to F. (6)



[6]

QUESTION 3 - DEFINE THE FOLLOWING TERMS (answer these questions in your answer booklet. Please number your answers carefully)

3.1) Aphelion (1)
It is at aphelion (its farthest position from the Sun) during the Northern Hemisphere summer (July 4).

3.2) Kinetic energy (1)
is the energy of motion

3.3) Refraction (2)
Change in speed and direction of light as light passes from one medium to another

3.4) Humidity (3)
Humidity refers to water vapor in the air. Humidity is primarily a function of the air temperature and the water vapor temperature.

3.5) Transpiration (1)
Plants release water to the atmosphere through small openings called stomata in their leaves

3.6) Wetland (2)
is an area that is permanently or seasonally saturated with water and characterized by vegetation adapted to hydric soils (anaerobic or without O).

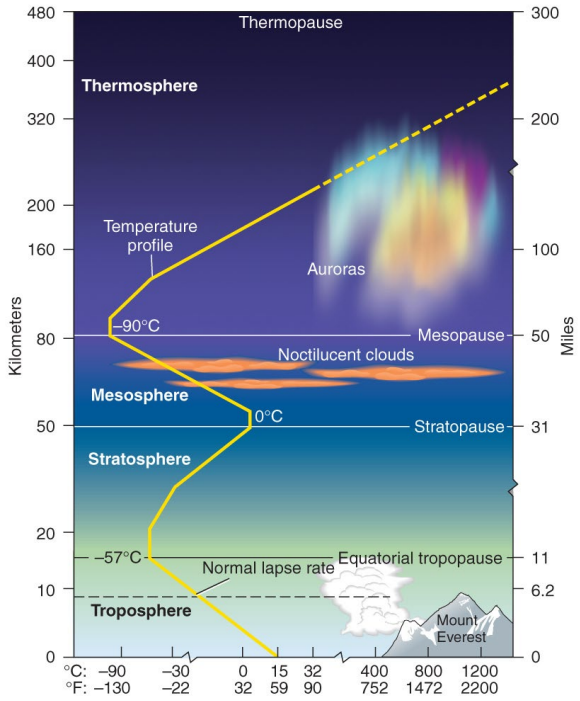
3.7) Insolation (1)
or incoming solar radiation

3.8) Temperature inversion (1)
- a thin layer of the atmosphere where the normal decrease in temperature with height switches to the temperature increasing with height.

[12]

QUESTION 4

DIAGRAM - The atmosphere is comprised of layers based on temperature. Draw and label a detailed diagram showing the atmospheric temperature profile and how the temperature changes. (12)



(a) Temperature profile plots temperature changes with altitude.

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QUESTION 5

Answer the following questions in your answer booklet. Number your answers carefully)

5.1) List the following wavelengths from shortest (high energy) to longest (low energy). (7)
Gamma rays, x-rays, UV rays, Visible light, Infrared, Microwaves, Radio waves

5.2) List the five (5) physical factors responsible for the variations in the seasons. (5)

1. Earth's **revolution** around the sun
2. Earth's **rotation** around it's axis
3. Tilt of the earth's **axis**
4. Axial **parallelism**
5. **Sphericity**

5.3) Name any two sources of natural pollutants (2)

5.4) Name any two sources of anthropogenic pollution (2)

- Carbon monoxide
- Photochemical smog
- Industrial smog and sulfur oxides
- Particulates

2.7) Which type of fog moves across large areas and can last for several days? (1)

- Advection fog