FACULTY OF SCIENCE

GR2AFET
PHYSICAL GEOGRAPHY
SEMESTER TEST 1
13 March 2020

LECTURER **MRS D. GREENBERG**
MODERATOR **DR C. KELSO**
TIME 60 minutes **MARKS 60**

SECTION 1

Section 1 is to be completed in your answer books. Please number each question carefully.

1.1) What produces wind? (1)

Differences in air pressure produce wind.

1.2) What is the 'Thermal equator' (2)

The Thermal equator is an isotherm connecting all points of highest mean temperature (about 27°C). It is not the same as the ITCZ, which is a zone of convergence *at* the thermal equator where the trade winds meet.

1.3) What is the 'Continental effect'? (3)

refers to areas less affected by the sea and therefore having a greater range between maximum and minimum temperatures on both a daily and yearly basis.

1.4) Why do the East and West coasts of South Africa experience different climates? (4)

1.5) Briefly describe how a Mountain-valley breeze forms (4)

Mountain air cools rapidly at night causing a downslope wind from the mountain.
Valley air warms rapidly during the day causing a warmer upslope wind during the day.

1.6) Earths climate is a result of interactions among components. List these components. (5)

- **Insolation**
- **Temperature**
- **Air pressure**
- **Air masses**

- **Precipitation**

1.7) List the six **main categories** of *world climates*. Briefly describe their main characteristics and where they can be found (12)

1. **Tropical** (tropical latitudes: 23.5°N–23.5°S)
2. **Mesothermal** (Temperate) (midlatitudes, mild winter)
3. **Microthermal** (mid and high latitudes, cold winters)
4. **Polar** (high latitudes and polar regions)
5. **Highland** (high elevations at all latitudes; highlands have lower temperatures)
6. **Dry** (Desert)(permanent moisture deficits)

1.8) Under which **South African climatic zone** can Johannesburg be classified? Briefly describe the climatic characteristics of the climate zone (5)

1. Cold Interior

the high plateau in the centre, north and west of the country

winters are usually dry with cold nights - frost

Mild summer characterised by hot days followed by afternoon thundershowers and cool evenings

Summer rainfall 713mm

example **Johannesburg**

Winter - dry, sunny days followed by cold nights.

Temperatures in Johannesburg are usually fairly mild due to the city's high elevation, with an average maximum daytime temperature in January of 25.6 °C dropping to an average maximum of around 16 °C in June and minimum average of 4.1 °C

The temperature occasionally drops to below freezing at night, causing frost.

The lowest night time minimum temperature ever recorded in Johannesburg is −8.2 °C

SUB TOTAL SECTION 1 [36]

SECTION 2

Section 2 is to be completed on the attached diagram. Please detach and complete the diagram as per the instructions. Please put the page inside your answer booklet.

Surname: _____ Initials: _____ Student number: _____