

2. THE EARTH AND THE SOLAR SYSTEM

1. a i) i) Tropic of cancer

ii) $66\frac{1}{2}^{\circ}$

- b i) - Causes day and night
- Causes high and low tides
- Causes deflection of winds and ocean currents
- Causes time difference between longitudes
- Causes pressure difference on the earth's surface

ii) Time difference = 1400 hrs – 1030hrs

= 0330 hrs

= $3\frac{1}{2}$ hrs

∴ Difference in longitude is

$$7\frac{1}{2} \times 7 = 52.5$$

$$52.5 - 45$$

Longitude is 7.5W

- (c) - Sea breeze
- Land breeze
- Anabatic
- Katabatic

2. a i) - $28^{\circ}\text{C} - 24^{\circ}\text{C} = 4^{\circ}\text{C}$

ii) - 1803mm

b) - the town experiences high temperature throughout the year ($24^{\circ}\text{C} - 28^{\circ}\text{C}$)

- the annual range of temperature is small
- rain fall throughout the year/there is no marked dry season
- the rainfall pattern has double maxima
- the wettest month is June/the driest month are December and January
- the rainfall is high i.e. 1803mm

3. a) Solstice is when the sun's overhead position is over the tropic of cancer and Capricorn

b) - Causes seasons i.e. spring, summer, autumn & winter

- Varying lengths of day and night at different times of the year
- Changes in the position of the midday sun at different times of the year
- Changes in the position of the midday sun at different times of the year

4. a i) - Passing star theory

- Nubular cloud theory

ii) Centrifugal force

b) - Layers of the overlying rocks exerts pressure hence the interior is

hot

- After formation of the earth the interior cooled slowly compared to the exterior, thus the interior still retains much of its original temperature
- Radioactivity – mineral elements with the interior react with each other thus exploding to produce heat

5. a) - Passing star/ the big bang theory

- Nebula cloud theory

b)- The solar system is the group of heavenly bodies comprising the sun and the eight known planets which orbit the sun

6 .a) - Mercury

- Venus

b) (i) A time zone is a group of neighbouring countries that use the same standard time

ii) - On crossing this line from east to West,, a day is gained / the clock has to be

adjusted backwards by 24hours

- On crossing this line from West to East a day is lose/the clock has to be adjusted

forward by 24hours.

c) - They are circular.

- They decrease in length Northwards and Southwards

- They are measured North and South of the equator

- Their values increase Northwards and Southwards

- They are parallel to each other

7. a) - It is the sun and the planets orbiting around it.

b) - The radio activity process taking place in the interior leads to a lot of energy

production.

- This keeps the temperature in the interior very hot.

- The overlying materials exert a lot of pressure to the interior resulting to higher

temperature.

- When the earth was being formed the mantle and the core cooled at a slower rate than

the crust.

- As a result the temperature in the interior are still hot.

8. a i) -Solar/eclipse of the sun

. ii) - Q-moon

- T-umbra
 - b) -it cause days and night
 - it causes high and low tides
 - it causes the deflection of winds and oceans currents
 - it causes time difference between longitudes
9. a) - Cooled at a slower rate than the outer exposed part
- Due to the process of radio- activity where atoms break releasing heat
 - Weight of the overlying material that exerts pressure on the core
- b) - Causes seasons
- Varying lengths of day and night
10. a i) It is the date when the sun is overhead at the equator at mid day
- ii) 21st march✓
- 23rd September✓
- iii) - causes four seasons i.e. winter, summer, autumn and spring✓
- causes varying lengths of day and night at different times of the year✓
 - causes changes or altitude of the mid-day sun at different times of the year✓
11. a) - U-mohorovicic discontinuity
- V-the mantle/asthenosphere
 - X-Gutenberg discontinuity
- . b i) - it is made up of solid rocks
- composed of two layers /sial and sima/continental crust and oceanic crust
 - sial is rich in silica and a aluminum
 - sima is rich in silica and magnesium
 - sima rocks are like plastic/more flexible
 - the top layer of the sima is made of sediments and volcanic lava
 - the bottom layer of sima is made up of basalt/igneous rocks
 - the sima is made up of the basaltic/igneous rocks
 - sima is made up of dense rocks /2.8-3.0 gm/cc
 - the sial is made up of granites/sedimentary/metamorphic rocks
 - the sial rocks are rigid/brittle
- ii) - the core is composed of two parts i.e. inner core and outer core
- the main mineral of the outer core are iron and nickel

- the main mineral of the inner core is iron
- the inner core has a high density i.e. 16-17gm/cc than the outer core i.e. 10.5gm/cc
- the inner core is made up of a solid rock mass
- the outer core is molten