

SECTION A: THE ATMOSPHERE

QUESTION 1

- 1.1.1 A process whereby areas become more arid and drier like a desert, is ...
- A drought.
 - B desertification.
 - C climate change.
 - D ozone depletion.
- 1.1.2 The transfer of heat by vertical movement is ...
- A convection.
 - B conduction.
 - C coriolis force.
 - D latent heat.
- 1.1.3 Gases in the atmosphere that absorb long-wave radiation and contribute to global warming are known as the ...
- A radiation gases.
 - B thermosphere.
 - C greenhouse effect.
 - D greenhouse gases.
- 1.1.4 The layer of atmosphere closest to the earth's surface is the ...
- A mesosphere.
 - B tropopause.
 - C stratosphere.
 - D troposphere.
- 1.1.5 Chemicals used in some aerosol sprays, refrigerants, air conditioners and industrial cleaning materials are known as ...
- A oxygen atoms.
 - B chlorine carbons.
 - C pollutants.
 - D chlorofluorocarbons.
- 1.1.6 Moisture which falls from the atmosphere onto the earth's surface is ...
- A thunderstorm.
 - B fog.
 - C precipitation.
 - D rainfall.

1.1.7 Ice which collects on plants and the ground surface is ...

- A frost.
- B dew.
- C cirrus.
- D stratus.

1.1.8 A map showing a summary of the weather conditions of a place is ...

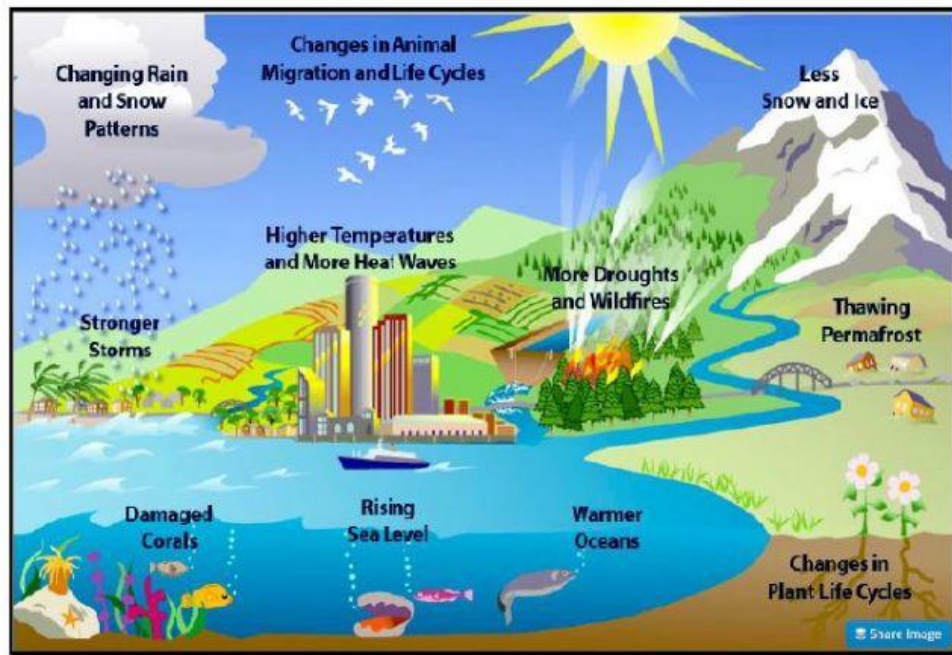
- A meteorology.
- B weather forecast.
- C a synoptic weather map.
- D climatology.

(8 x 1) (8)

COLUMN A		COLUMN B	
1.2.1	Large, dense, towering clouds that cause thunderstorms	A	insolation
1.2.2	The permanent gas that makes up 21% of the atmosphere and is necessary for respiration	B	terrestrial radiation
1.2.3	A molecule of three oxygen atoms which absorb ultraviolet rays	C	tropopause
1.2.4	Incoming solar radiation	D	cumulonimbus clouds
1.2.5	The heat energy that the earth radiates	E	scattering
1.2.6	The upper layer of the troposphere	F	ozone
1.2.7	Radiation bounces off particles of dust in the atmosphere	G	reflection
		H	oxygen

(7 x 1) (7)

FIGURE 1.3: EFFECTS OF GLOBAL WARMING



[Source: Google image]

1.3 Refer to FIGURE 1.3 showing the effects of global warming.

1.3.1 Define the term *global warming*. (1 x 1) (1)

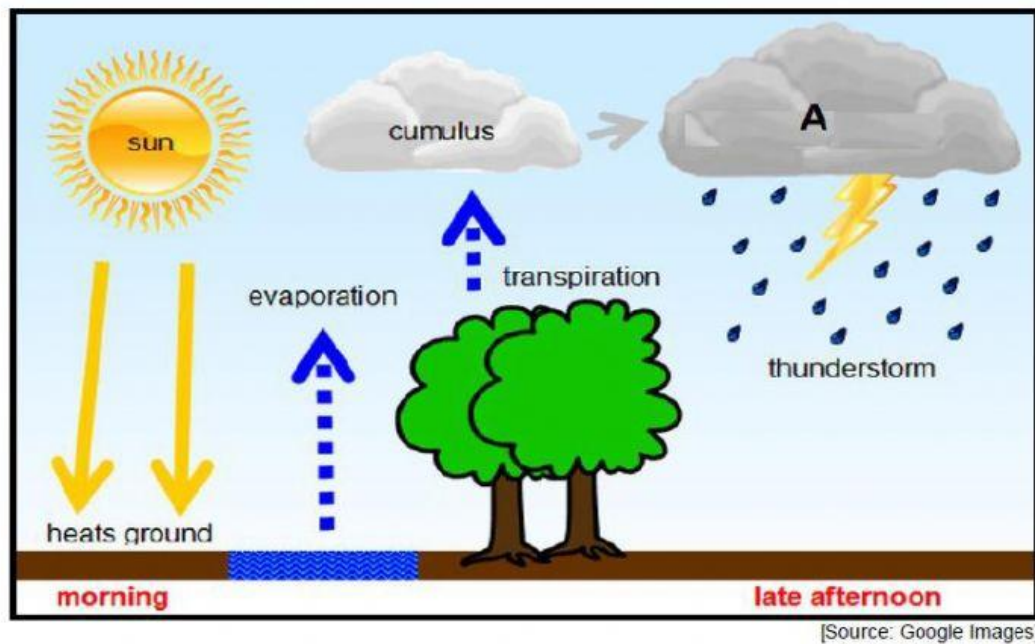
1.3.2 Identify TWO effects of global warming in FIGURE 1.3. (2 x 1) (2)

1.3.3 List any TWO gases that contribute to global warming (2 x 1) (2)

1.3.4 Explain TWO factors that caused the effects identified in QUESTION 1.3.2. (2 x 2) (4)

1.3.5 Discuss THREE sustainable strategies (ways) to reduce global warming. (3 x 2) (6)

FIGURE 1.4: CONVECTIONAL RAINFALL



1.4 Refer to FIGURE 1.4 showing convectional rainfall and answer the following questions.

1.4.1 Convectional rainfall is common in (summer/winter). (1 x 1) (1)

1.4.2 This type of rainfall is common in the (Western Cape/ Gauteng) province of South Africa. (1 x 1) (1)

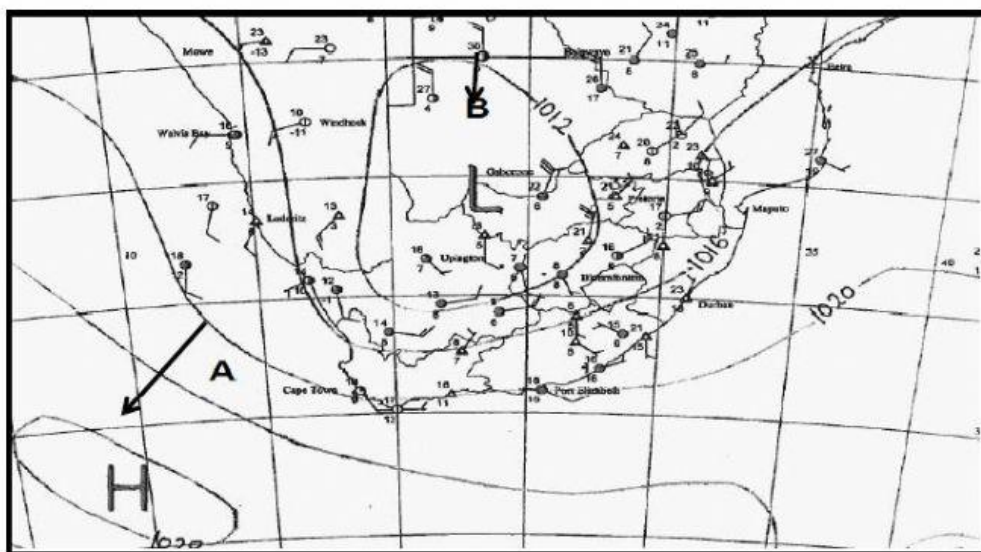
1.4.3 (a) Name the type of cloud labelled A. (1 x 1) (1)

(b) Describe TWO weather conditions associated with the type of cloud mentioned in QUESTION 1.4.3 (a). (2 x 1) (2)

1.4.4 Mention TWO benefits of convectional rainfall to livestock farmers. (2 x 1) (2)

- 1.4.5 In a paragraph of approximately EIGHT lines, discuss the negative impacts of thunderstorms on people and the environment. (4 x 2) (8)

FIGURE 1.5: SYNOPTIC WEATHER MAP



- 1.5 Refer to FIGURE 1.5 showing a synoptic weather map and answer the questions that follow.

- 1.5.1 Lines drawn on synoptic weather maps showing places of equal pressure are (isobars/isohyets). (1 x 1) (1)

- 1.5.2 Identify the following types of pressure at:

(a) **A** (1 x 1) (1)

(b) **B** (1 x 1) (1)

1.5.3 What is the pressure reading in Cape Town? (1 x 2) (2)

1.5.4 (a) Is this weather map representative of summer or winter? (1 x 1) (1)

(b) Give a reason for your answer in QUESTION 1.5.4 (a). (1 x 2) (2)

1.5.5 Describe the weather of Port Elizabeth by copying and completing the table below:

Air temperature	
Wind direction	
Wind speed	
Precipitation	
Cloud cover	

(5 x 1) (5)