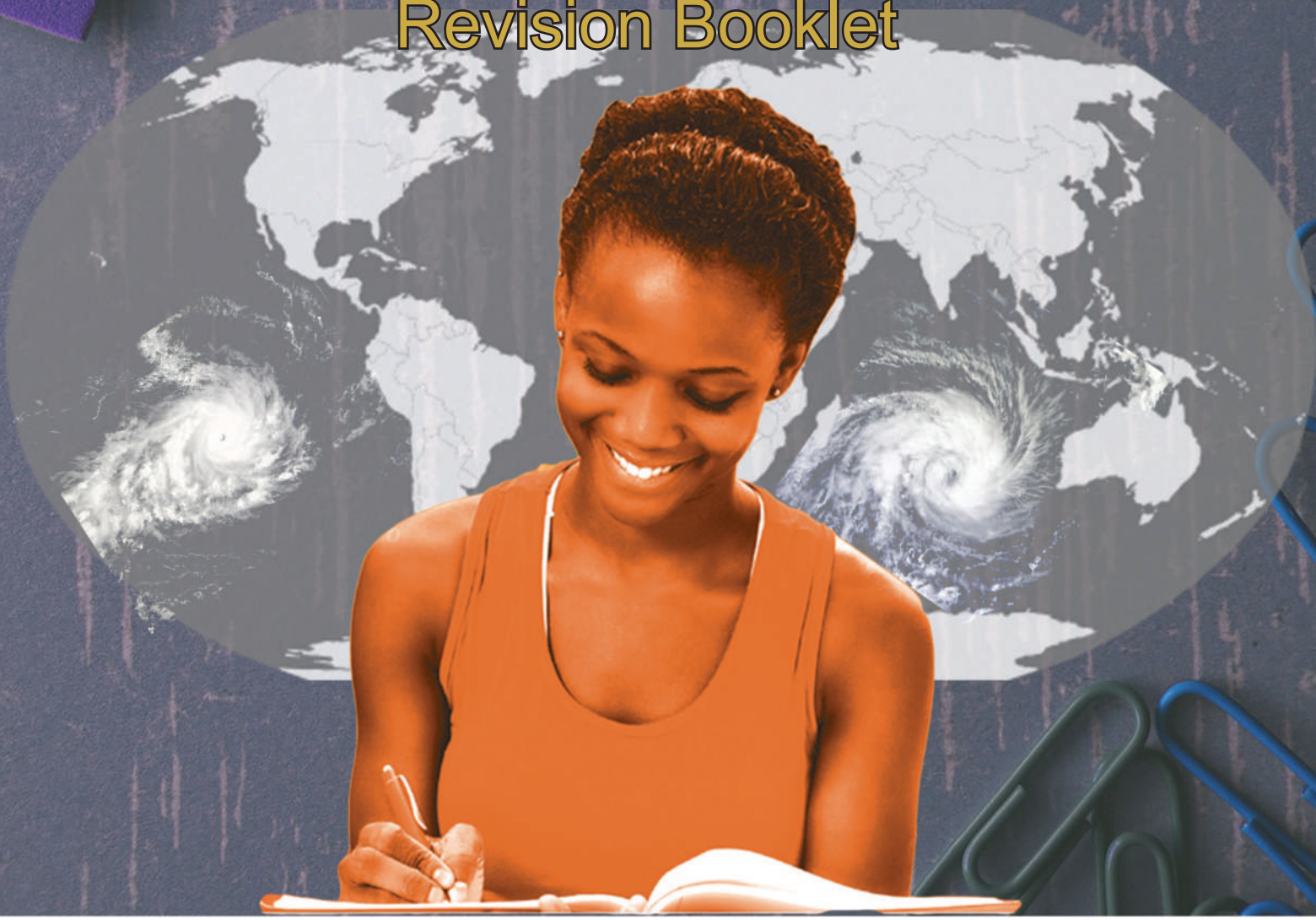
Futher Education and Training:
Grade 12 (FET)

BRIGHT IDEAS

GEOGRAPHY

Revision Booklet



basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

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Matric Support Programme

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GEOGRAPHY

Grade 12

REVISION BOOKLET

TABLE OF CONTENTS PAGE

1. **Forword**

Message from the Minister of Basic Education

Message to Grade 12 learners from the Minister of Basic Education

"Matric" (Grade12) is perhaps the most important examination you will prepare for. It is the gateway to your future; it is the means to enter tertiary institutions; it is your opportunity to create the career of your dreams.

It is not easy to accomplish but it can be done with hard work and dedication; with prioritising your time and effort to ensure that you cover as much content as possible in order to be well prepared for the examinations.

I cannot stress the importance and value of revision in preparing for the examinations. Once you have covered all the content and topics, you should start working through the past examination papers; thereafter check your answers with the memoranda. If your answers are not correct, go back to the Mind the Gap Series and work through the content again. Retest yourself. Continue with this process until you get all the answers right.

The Bright Idea….getting exam ready Booklet will allow you to do this in a systemic way. It has been developed to assist you to achieve a minimum of 40% in the examinations, if you work hard and follow the advice and guidance provided in the book. I also urge you to continue with the next section that deals with an additional 20%, which will ensure you have covered the basics to achieve 60%.

Use this valuable resource which has been developed especially for YOU, work hard, persevere, work every day, read and write every day to ensure that you are successful.

I have faith that you can do this. Remember "SUCCESS" depends on the second letter, "U".

Best Wishes

MRS AM MOTSHEKGA, MP

MINISTER OF BASIC EDUCATION

DATE: 24/02/2017

GEOGRAPHY - FIRST PAPER			
	30% (30-mark question)	**60% (45-mark question)**	**70% (53-mark question)**
CLIMATE	**MIDILATITUDE CYCLONES** • General characteristics • Cold front weather changes • Identify stages and reasons **TROPICAL CYCLONES** • General characteristics • Identify stages and reasons **SUBTROPICAL ANTICYCLONES** • 3 high pressure cells (location) • Formation: line thunderstorms • South African berg winds **VALLEY CLIMATES** • Aspect (which slope is warmer) • Anabatic/katabatic winds • Inversions **URBAN CLIMATES** • Why are cities warmer? • Definitions: heat island and pollution domes	**ADD THE FOLLOWING** **MIDILATITUDE CYCLONES** • Areas where formed • Weather associated with cold and warm fronts **TROPICAL CYCLONES** • Areas where formed • Conditions for formation **SUB-TROPICAL ANTI-CYCLONES** • Influence-high pressure cells **VALLEY CLIMATES** • Frost pockets radiation fog • Influence on farming and settlements **URBAN CLIMATES** • Strategies to reduce heat islands	**ADD THE FOLLOWING** **MIDILATITUDE CYCLONES** • Conditions for formation • Weather associated with cold, warm and occluded fronts • Cross sections: cold, warm and occluded fronts **TROPICAL CYCLONES** • Associated weather patterns **SUB-TROPICAL ANTI-CYCLONES** • Coastal low pressures
GEOMORPH	**DRAINAGE SYSTEMS** • ALL concepts • Drainage patterns (all) • Laminar and turbulent flow **FLUVIAL PROCESSES** • Longitudinal profiles (3 stages: upper, middle and lower course) • Cross profiles (in 3 stages) • Fluvial landforms • River capture (how; land forms) • Rejuvenation (how; features)	**ADD THE FOLLOWING** **DRAINAGE SYSTEMS** • Types of rivers • Drainage density (high/low) • Laminar and turbulent flow **FLUVIAL PROCESSES** • River grading **CATCHMENT/RIVER MANAGE** • Importance	**ADD THE FOLLOWING** **FLUVIAL PROCESSES** • River grading • Superimposed and antecedent **CATCHMENT/RIVER MANAGE** • ImportanceImpact of people
SETTLEMENT	**RURAL SETTLEMENTS** • Pattern: nucleated/dispersed • Shape of rural settlements **RURAL SETTLEMENT ISSUES** • Causes and consequences of rural depopulation **URBAN SETTLEMENTS** • Site and situation • Classification: central place, trade and transport, specialised **URBAN STRUCTURE** • Land use zones: CBD, industrial, residential, zone of decay, commercial, rural-urban, fringe • Street patterns • Urban profiles **URBAN SETTLEMENT ISSUES** • Traffic • Informal settlements and issues	**ADD THE FOLLOWING** **RURAL SETTLEMENTS** • Site and situation • Rural and urban settlements **RURAL SETTLEMENT ISSUES** • Social justice issues **URBAN HIERARCHIES** • Concepts • Lower and higher order functions **URBAN STRUCTURE** • Models of urban structure **URBAN SETTLEMENT ISSUES** • Traffic and other issues • Informal settlements and issues	**ADD THE FOLLOWING** **RURAL SETTLEMENTS** • Classification: function **RURAL SETTLEMENT ISSUES** • Social justice issues **URBAN SETTLEMENTS** • Origin of urban settlements **URBAN HIERARCHIES** • Lower and higher order centres **URBAN STRUCTURE** • Changing urban patterns **URBAN SETTLEMENT ISSUES** • All issues

E C O N O M I C	**ECONOMIC SECTORS** • Primary, secondary, tertiary **AGRICULTURE** • Small and large scale farmers • Favourable/unfavourable factors **MINING** • Favourable/unfavourable factors **SECONDARY SECTOR** • Factors industrial development • Industrial zones **INFORMAL SECTOR** • Concept • Challenges	**<u>ADD THE FOLLOWING</u>** **ECONOMIC SECTORS** • Quaternary • Contribution to SA economy **AGRICULTURE** • Contribution to SA economy • Food security **MINING** • Contribution to SA economy **STRATEGIES FOR INDUSTRIAL DEVELOPMENT** • IDZs and SDIs	**<u>ADD THE FOLLOWING</u>** **AGRICULTURE** • Products **MINING** • Products **SECONDARY SECTOR** • Types of industries **STRATEGIES FOR INDUSTRIAL DEVELOPMENT** • IDZs and SDIs •Issues: centralisation and decentralisation

EXAM TIPS

QUESTION PAPER 1

- You are given **four** questions of 75 marks each. **DO ONLY THREE.**
- Carefully read through all the questions and make your choice.

TYPES OF QUESTIONS

The structure of each question in Paper 1 is as follows:

- Short questions 15 marks
- Data response questions 44 marks
- Paragraph-type questions 16 marks

TOTAL 75 marks

1 Multiple-choice/short questions

- Know what each multiple-choice question is asking.
- Evaluate each answer to the multiple-choice question.
- Eliminate each answer that is clearly wrong.
- Do not leave any question unanswered.

2 Data response questions

- With a data response question, you are required to interpret diagrams, maps, photos, tables, statistics, cartoons, etc.
- Data response questions require knowledge, application analysis and evaluation.
- Marks for data response questions range from 2-8 marks.

3 Paragraph-type questions

- **READ** the question **THOROUGHLY**.
- **UNDERLINE** keywords.
- Identify **HOW MANY PARTS there are to question**.
- **MARK ALLOCATION:** Write at least ONE answer for each part.
- Check the information in the diagram/map/article/photo that you can use in the paragraph.
- Write in paragraph form – not point form or bullet lists.

QUESTION PAPER 2

The structure of each question in Paper 2 is as follows:

- Question 1 Multiple choice questions 15 marks
- Question 2 Calculations and map skills 20 marks
- Question 3 Map interpretation 25 marks
- Question 4 GIS 15 marks

TOTAL **75 marks**

1 Multiple-choice questions

- Know what each multiple-choice question is asking.
- Evaluate each answer to the multiple-choice question.
- Eliminate each answer that is clearly wrong.
- Do not leave any question unanswered.

2 Calculations and map skills

You must be in a position to do the following calculations. Make sure that you follow all the steps, as marks are awarded for these steps:

- Distance
- Area All these involve knowledge of how to calculate DISTANCE. You
- Gradient must also know how to convert km to m.
- Vertical exaggeration
- Magnetic declination
- Magnetic bearing

The following map skills are important:

- Direction and bearing
- How height is indicated on topographic maps and orthophoto maps.
- Map reference (3318 DB PAARL)
- Coordinates (33°21'30" S 18°26'48" E)
- Drawing of cross sections
- Inter-visibility
- Direction in which rivers flow

Remember to bring the following instruments with you: ruler, protractor, non-programmable calculator, eraser and pencil.

3 Map interpretation

Interpretation of a map using your theory knowledge. Study the map carefully, especially the blocks mentioned in the questions (e.g. G5) for clues that could help you to answer the questions. Consider the following when answering questions. This will assist you to look at specific features on the map to get to a possible answer:

- Relief (brown)
- Drainage (blue)
- Infrastructure (black and red)
- Settlements (grey and black)
- Economic activities (green and black)

Also be aware that map interpretation also covers theory, for example:

- Climate (e.g. which slope on the map is warmer)
- Geomorphology (e.g. in what stage is the river on the map)
- Settlement geography (e.g. characteristics, advantages and disadvantages of street patterns on a topographic map or orthophoto map).
- Economic geography (e.g. factors influencing the location of industries on the map).

4 GIS

Carefully study the map, including the reference key, to answer the questions in this section. Ensure that you have a sound knowledge of the following:

- What is a GIS?
- Components of a GIS.
- All key concepts.
- Developing a paper GIS.
- How to use GIS in a given scenario on the map, e.g. locating shops and crime, disaster management, etc.

CLIMATE AND WEATHER

WHAT YOU NEED TO KNOW

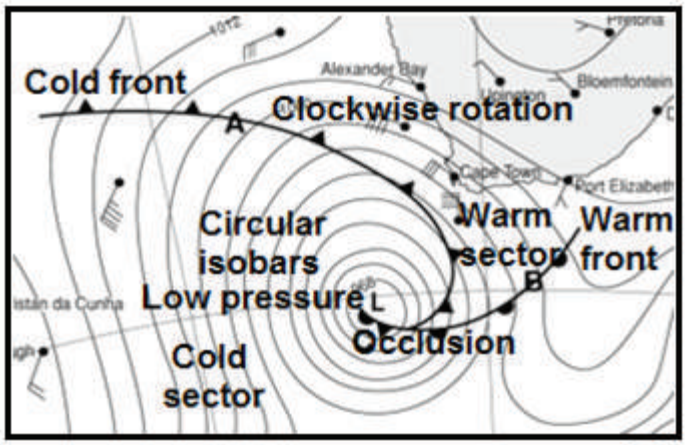
MID-LATITUDE CYCLONES (MLC) (temperate cyclone, extra-tropical, frontal depression)

General characteristics

- ***Name the general characteristics of a mid-latitude cyclone.***

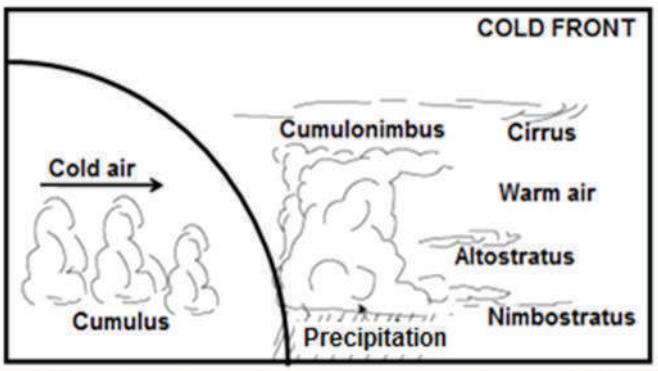
NB: The following:

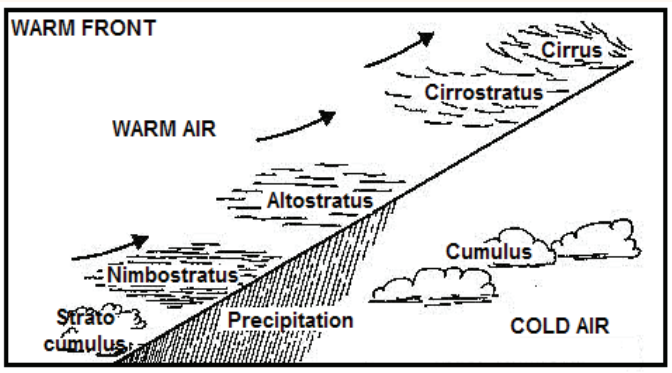
- cold front (air behind front cold)
- warm front (air behind front warm)
- circular isobars
- warm sector
- cold sector
- clockwise movement of air
- low pressure in centre
- value of isobars decrease towards centre
- moves from west to east



You must be able to identify these characteristics on weather maps and diagrams.

Distinguish between a warm and a cold front





Warm air is forced over cold air.

Cold air undercuts a body of warm air.

Weather changes

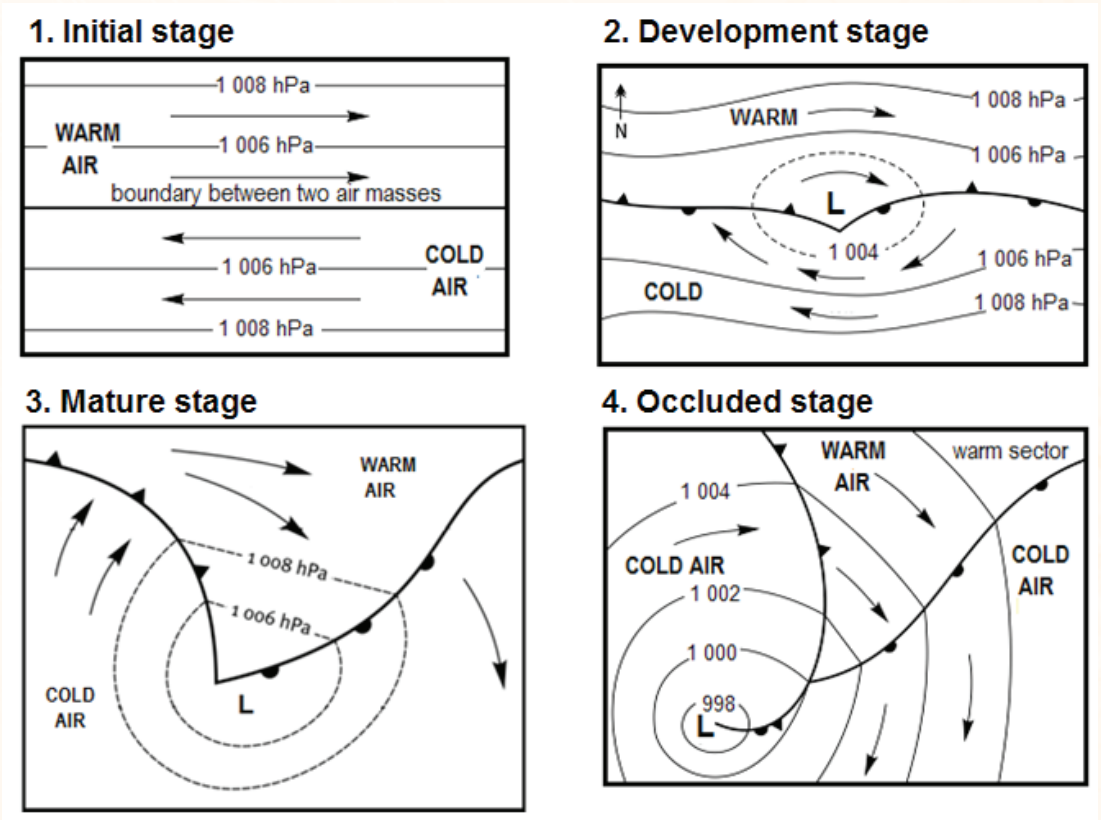
What weather changes occur when a cold front moves over an area?

You must be able to apply this content on synoptic weather map as well.

- sudden decrease in temperature;air pressure increases;wind direction changes from northwest to southwest;wind speed very strong to gale force;cloud cover very thick; cumulonimbus and cumulus clouds;
- rainfall; heavy showers;
- humidity starts to decrease.

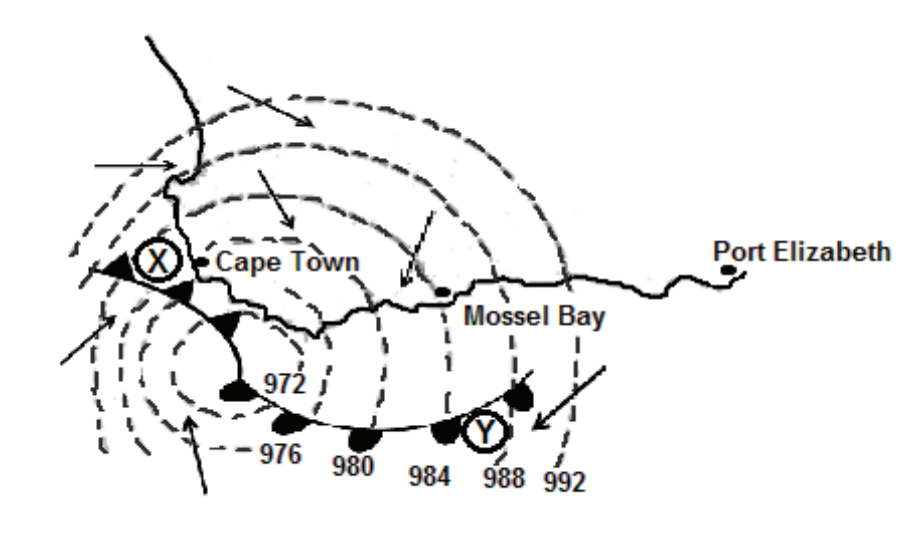
Stages of Development

Identify the stages of development of a MLC on the weather map. Give a reason for your answers.



ACTIVITY 1.1

FIGURE 1.1: MID-LATITUDE CYCLONE



[Adapted from *Geography of Africa* by WJ Minns]

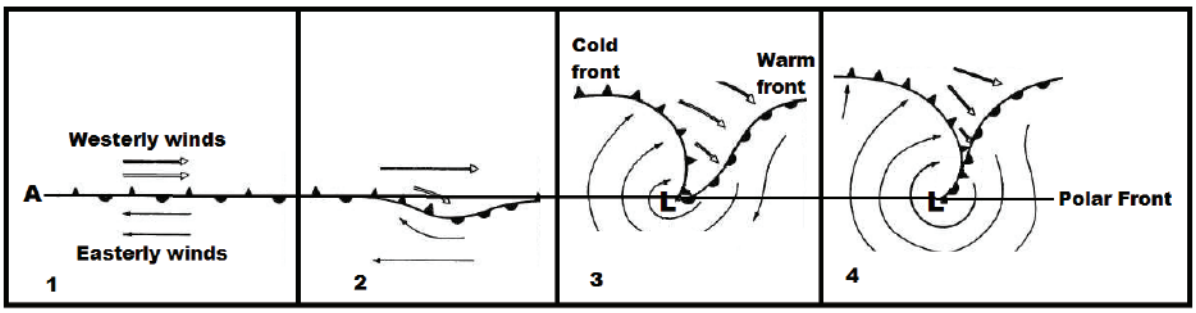
1.1.1 What evidence in the diagram shows that Cape Town is experiencing winter? (1 x 1) (1)

1.1.2 Does front X or front Y have a greater effect on the weather in Cape Town? (1 x 1) (1)

1.1.3 The weather service forecasts severe weather conditions for Cape Town. State TWO of these expected Weather conditions. (2 x 2) (4)

ACTIVITY 1.2

FIGURE 1.2: STAGES IN THE DEVELOPMENT OF A MID-LATITUDE CYCLONE



[Source: Examiner's own sketch]

1.2.1 Which line of latitude - 20°S, 60°S or 80°S - is represented by line A?

1.2.2 Is a mid-latitude cyclone a high-pressure system or a low-pressure system?

1.2.3 Describe the circulation of the air, as shown in stage 2 of the development cycle.

1.2.4 Name the zone of separation between the westerly and easterly winds.

1.2.5 Name the stage of development during which fronts form.

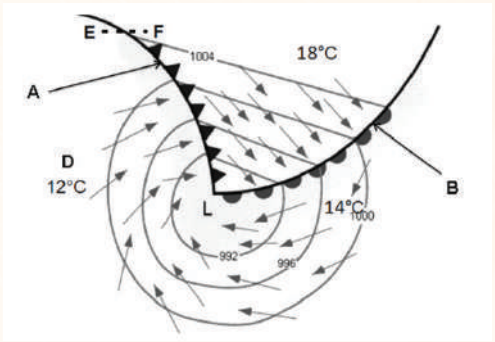
1.2.6 Define the term cold front, as seen in stage 3.

1.2.7 Which stage (1, 2, 3 or 4) shows the mid-latitude cyclone in the occlusion stage?

1.2.8 Give ONE point of evidence in the diagram that indicates that this cyclone occurs in the Southern Hemisphere. (8 x 1) (8)

ACTIVITY 1.3

FIGURE 1.3 STAGES OF A MID-LATITUDE CYCLONE



http://2.bp.blogspot.com/_LJZ5ArmANJQ/TTKJznLzb8I/AAAAAAAABfk/01Qxc62l6mQ/s1600/shem]

1.3.1 Give another name for this weather system. (1 x 1) (1)

1.3.2 Give TWO reasons for the low air temperature at **D**. (2 x 1) (2)

1.3.3 Draw a cross section of front **A** from point **E** to point **F**. Clearly indicate the main cloud type and air movements. (4 x 1) (4)

1.3.4 Give the latitudes - in degrees - between which mid-latitude cyclones develop. (1 x 2) (2)

1.3.5 Give evidence to support the statement that this mid-latitude cyclone is in the mature (warm sector) stage of development. (1 x 2) (2)

TROPICAL CYCLONES (TC)

WHAT YOU NEED TO KNOW

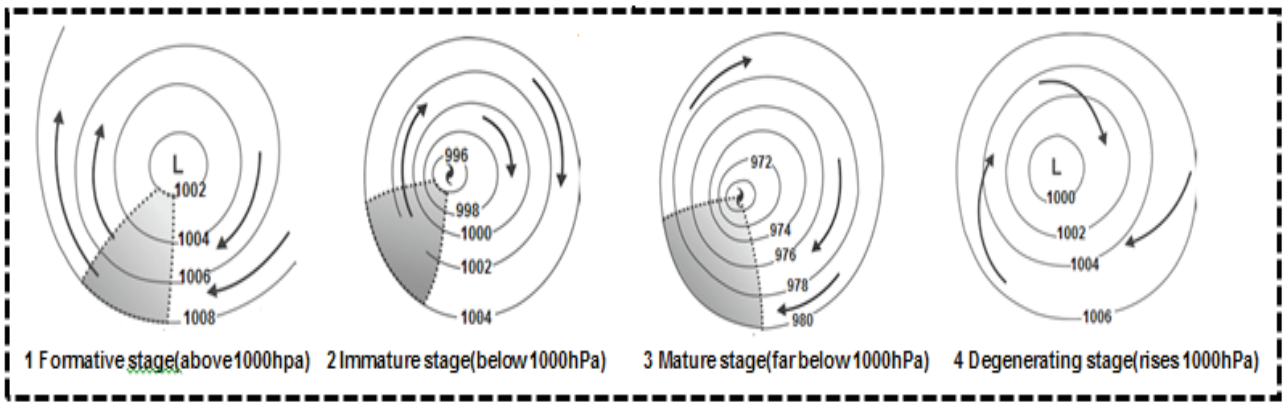
General characteristics

You must know ALL the general characteristics of tropical cyclones and be able to identify them on synoptic weather maps and diagrams.

- intense low pressure;named in alphabetical order;form during late summer or autumn;move: from EAST to WEST; AWAY from the equator; turns EAST at 30°;cause destruction because of hurricane force winds, storm surges and heavy rainfall.

Stages of development

Identify the stages of tropical cyclones. Give reasons for your answers.



Impact of tropical cyclones

Environmental	Economic	Social
• damage to infrastructuredamage to vegetation, crops and livestock • levées and floodwalls are broken	• cost of repair and construction expensiveunemployment • price increases	• humans injured or killedhumans left homeless • lack of sanitation and clean drinking water causes disease to spread

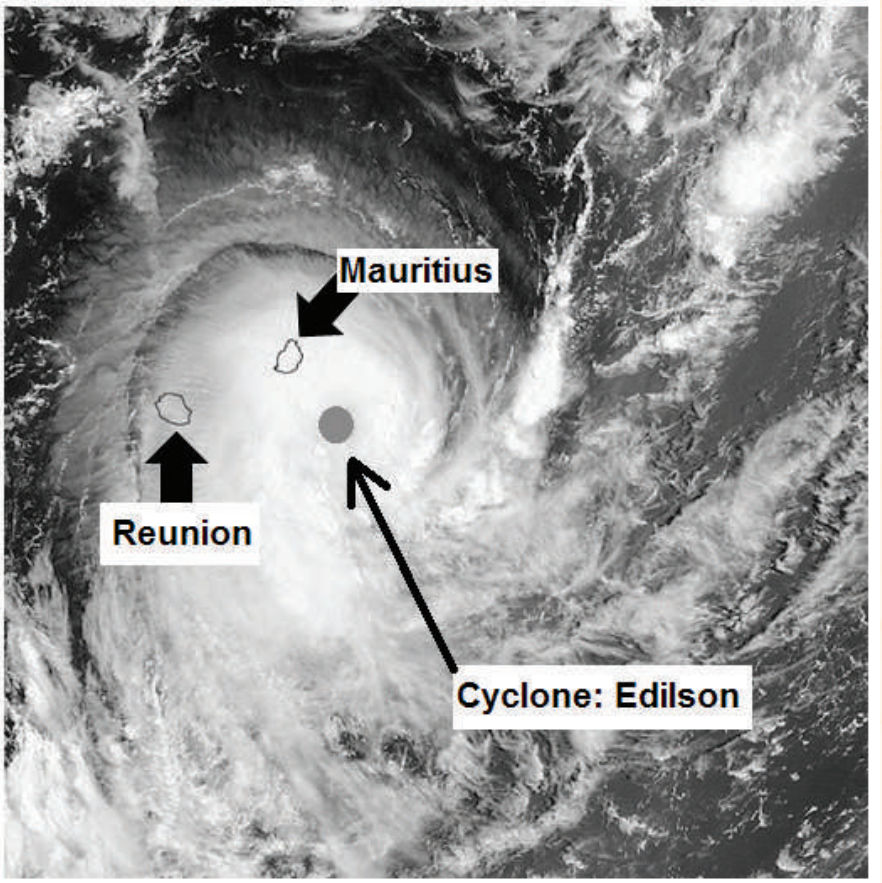
Management of tropical cyclones

Write a paragraph in which you explain how tropical cyclones can be managed.

- good weather forecasts;keep the public informed by tracking storms;
- early warning system;medical and rescue services on alert;build houses with strong materials;evacuation routes and procedures;
- avoid crossing rivers that are flowing strongly.

ACTIVITY 2.1

FIGURE 2.1: SATELLITE IMAGE OF A TROPICAL STORM



Adapted from http://www.weatherphotos.co.za]

2.1.1 Identify the type of cyclone represented in the satellite image.

2.1.2 Is this a high-pressure system or a low-pressure system?

2.1.3 In which season does this weather system occur?

2.1.4 Name the prevailing winds that drive this cyclone.

2.1.5 Name the global air circulation cell in which this system occurs.

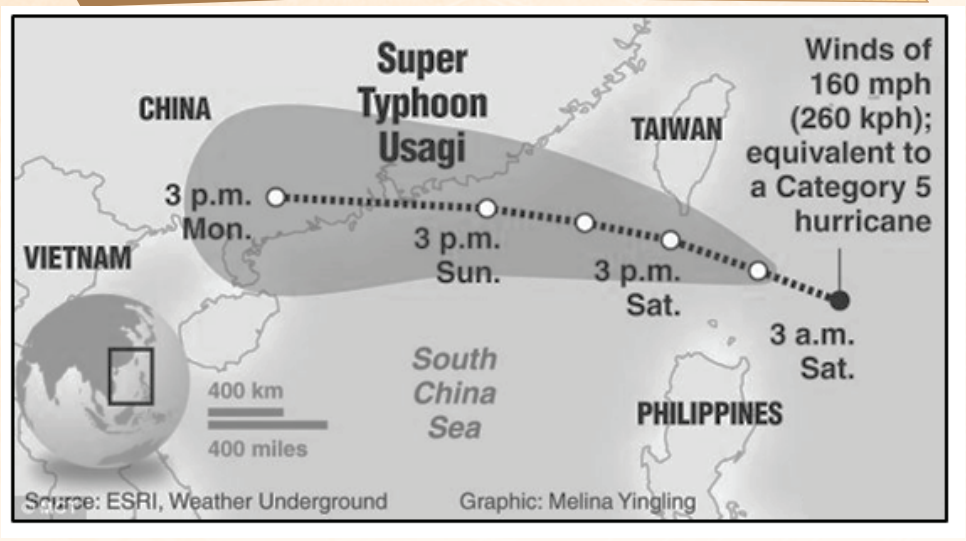
2.1.6 Which island - Reunion or Mauritius - will experience less severe weather?

2.1.7 What does the name Edilson reveal about the number of cyclones experienced in this season?

2.1.8 Name the cloud that is found around the eye of this cyclone. (8 x 1)

ACTIVITY 2.2

FIGURE 2.2 THE PASSAGE OF A TYPHOON



[Source: http://i.dailymail.co.uk/i/pix/2013/09/24/article-0-181DB13C00000578-229_634x341.jpg]

2.2.1 (a) In which area/region of the world does Typhoon Usagi occur? (1 x 1)

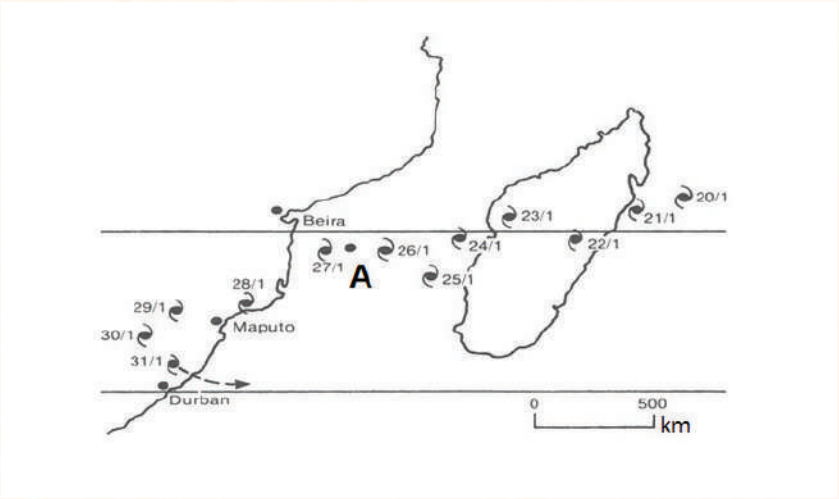
(b) State ONE visible characteristic in the diagram that confirms that Typhoon Usagi is in the mature stage. (1 x 1)

2.2.2 (a) Give a reason for the direction of movement of the typhoon. (1 x 1)

(b) How many typhoons have been experienced before Typhoon Usagi in this region during this season? (1 x 2)

2.2.3 State ONE condition that could have led to Typhoon Usagi developing into a super typhoon? (1 x 2)

ACTIVITY 2.3 THE PASSAGE OF A TROPICAL CYCLONE



[Adapted from *Master Geography*]

2.3.1 In which general direction do tropical cyclones move? (1 x 1)

2.3.2 The Coriolis force is almost zero between 0° and 5° south and north of the equator.

How will this impact on the point of origin of a tropical cyclone? (1 x 2)

2.3.3 Give the duration - in days - of the tropical cyclone in FIGURE 2.3. (1 x 2)

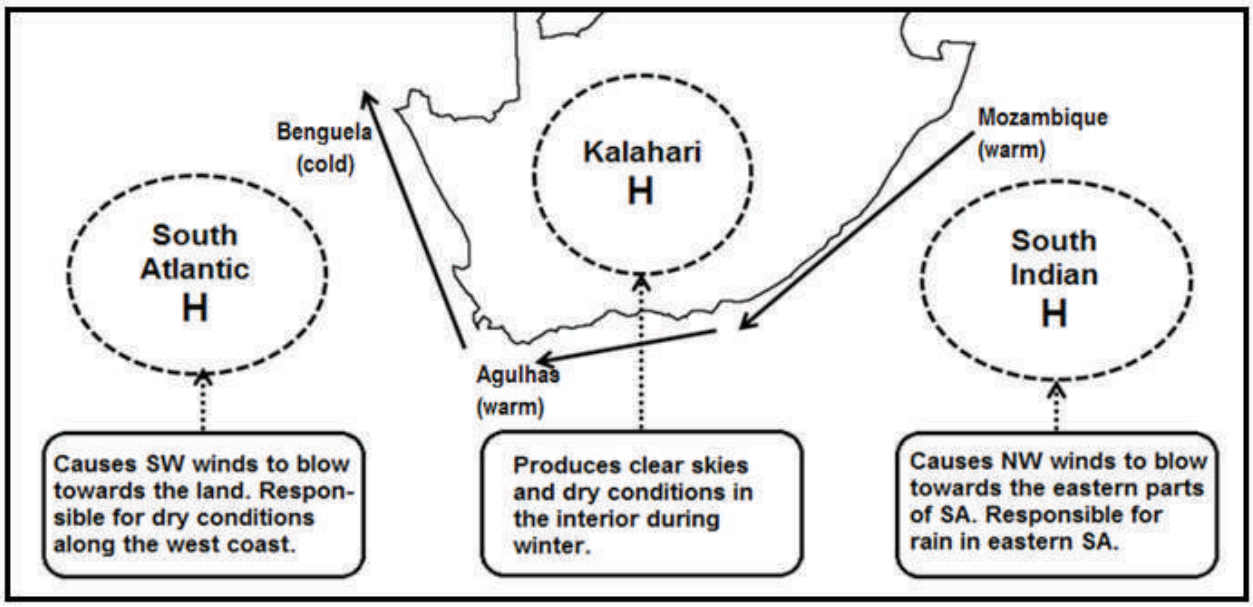
2.3.4 Use the scale provided to determine the approximate distance of the path taken by this cyclone between 20 January and 31 January. (1 x 2)

2.3.5 Why do tropical cyclones follow an erratic path? (2 x 2)

SUB-TROPICAL ANTI-CYCLONES (HIGH PRESSURES

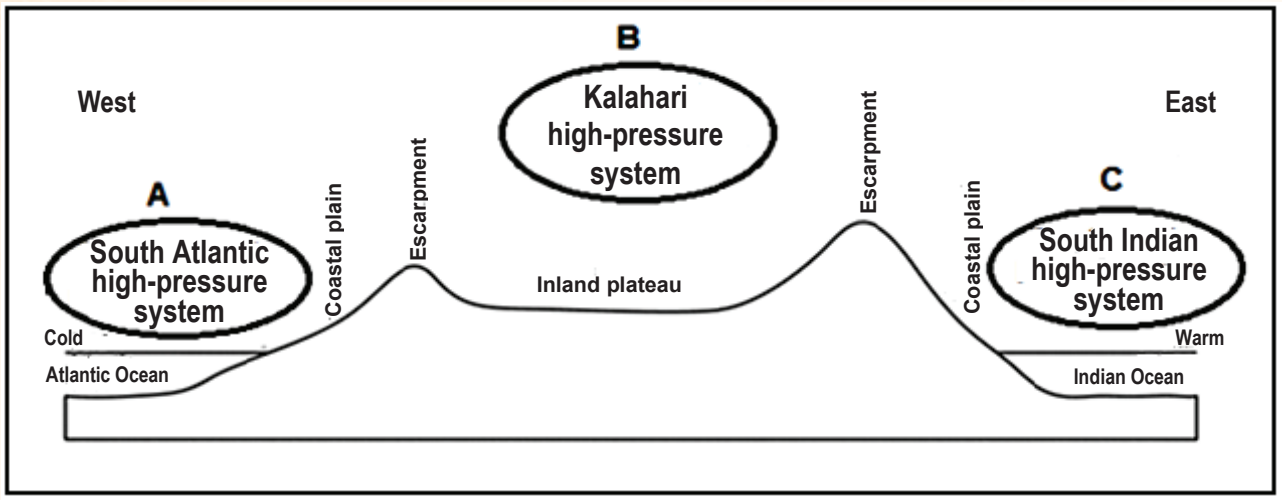
WHAT YOU NEED TO KNOW

Give the names and location of the three high pressures.



ACTIVITY 3.1

FIGURE 3.1: ANTI-CYCLONES OVER SOUTH AFRICA



(TRY TO ANSWER THESE QUESTIONS BEFORE LOOKING AT THE FIGURE ABOVE.)

3.1.1 The subsiding air causes semi-arid conditions on the West Coast of South Africa.

3.1.2 In summer, this pressure cell is found at a higher altitude due to surface heating.

3.1.3 The subsiding air forms an inversion layer in winter that prevents moist air from reaching the interior.

3.1.4 The ridging of this pressure cell results in rainfall over the South-western Cape.

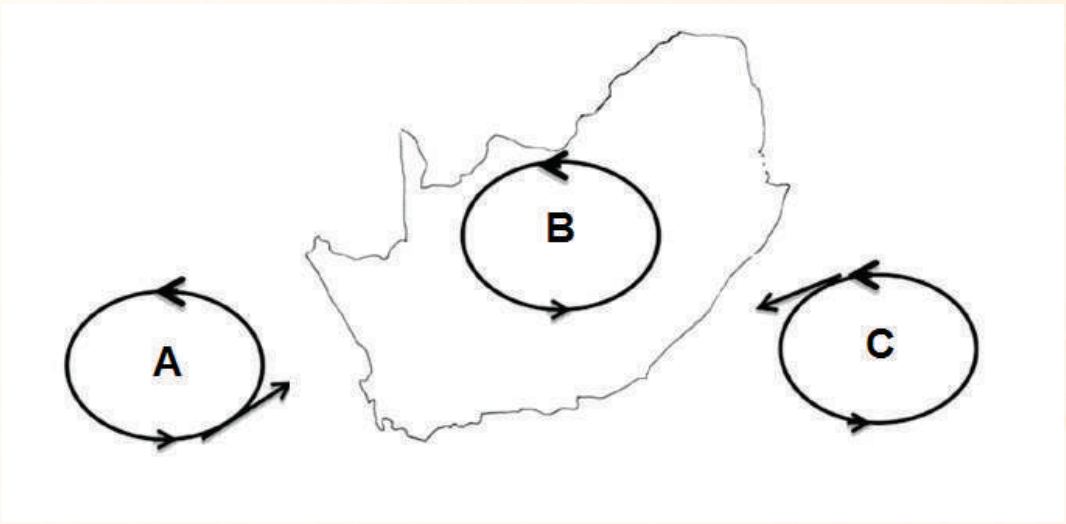
3.1.5 Interaction with a coastal low results in berg wind conditions.

3.1.6 Sometimes this pressure cell is known as a blocking high when it is in the path of a mid- latitude cyclone.

3.1.7 This pressure cell is generally associated with fog and reduced visibility. (7 x 1)

ACTIVITY 3.2

FIGURE 3.2 ANTI-CYCLONES OVER SOUTH AFRICA



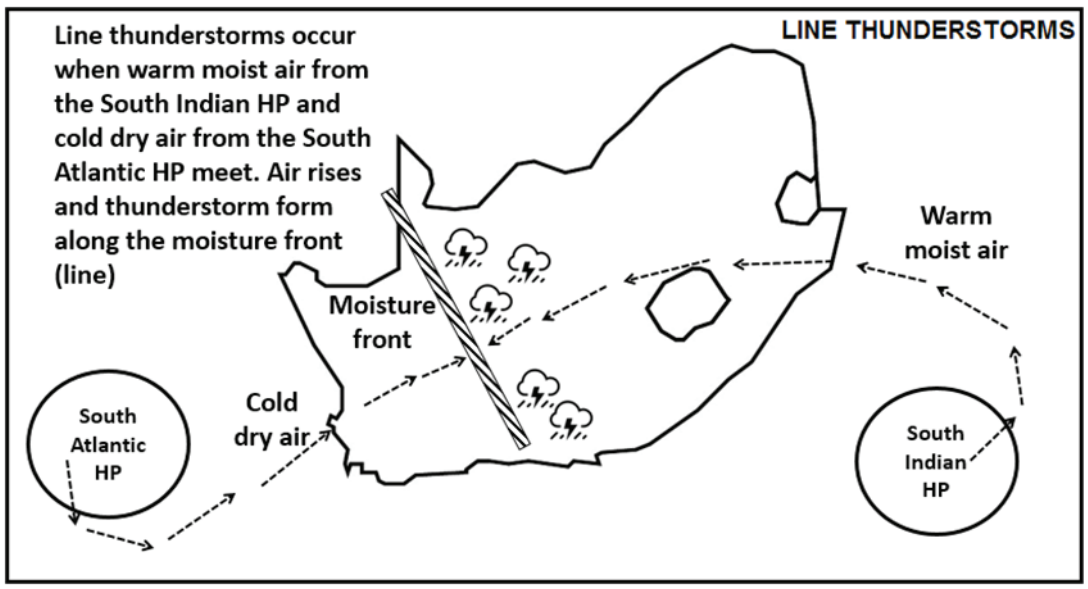
[Source: Examiner's own sketch]

3.2.1 Name each of the anti-cyclones: A, B and C. (3 x 1)

3.2.2 Anti-cyclones are associated with stable weather conditions over the interior of South Africa, particularly during winter. Draw a labelled sketch to illustrate the influence of the interior anti-cyclone on South Africa's weather. (4 x 1)

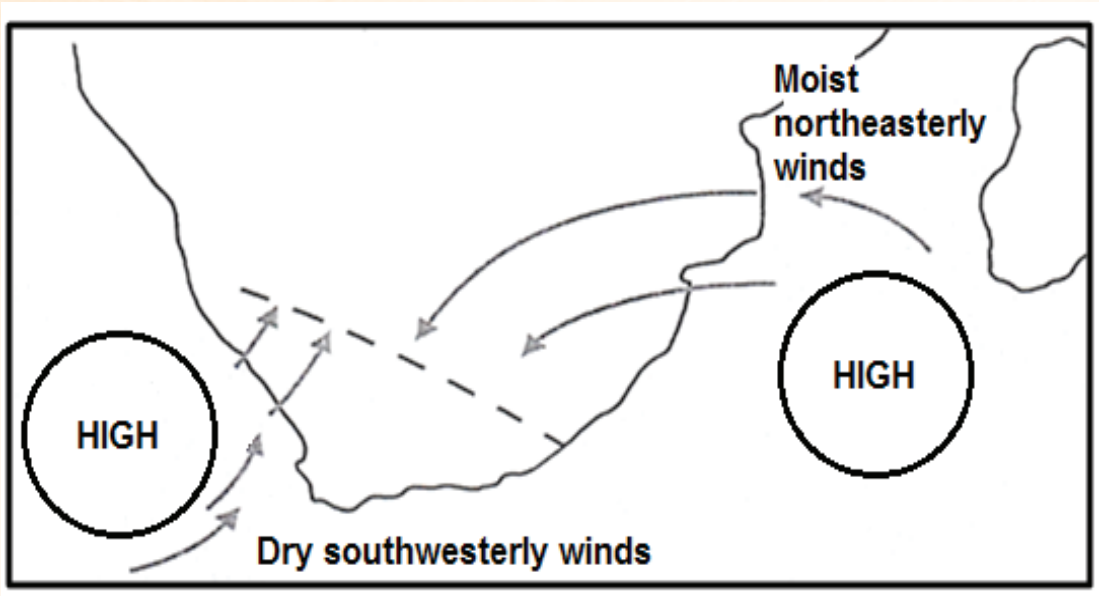
How line thunderstorms are formed.

WHAT YOU NEED TO KNOW



ACTIVITY 3.3

FIGURE 3:3 TRAVELLING DISTURBANCE (LINE THUNDERSTORM)



[Adapted from Geography, the Answer Series]

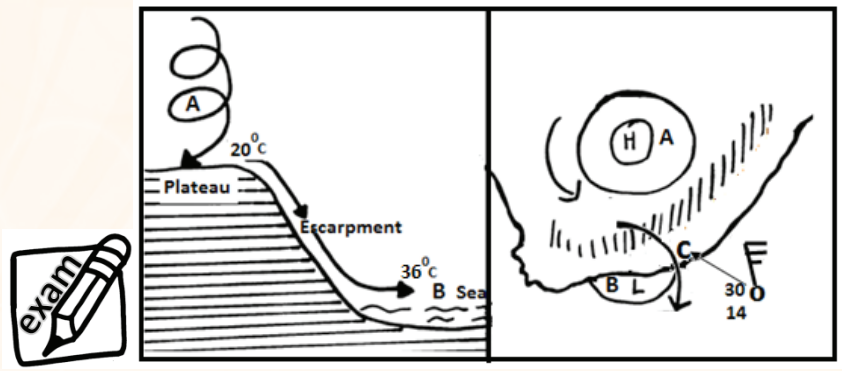
3.3.1 Name the season during which line thunderstorms occur. (1 x 1)

3.3.2 Name the TWO high-pressure systems responsible for the formation of line thunderstorms. (2 x 1)

3.3.3 Name TWO weather conditions associated with line thunderstorms. (2 x 1)

3.3.4 Give a reason for the shifting of the Kalahari High-Pressure Cell during a line thunderstorm. (1 x 2)

South African Berg wind



- Season - Winter
- *How it is formed*: -high pressure in the interior;

  -low pressure at sea;

  -wind blows from interior (HP) to sea (LP);

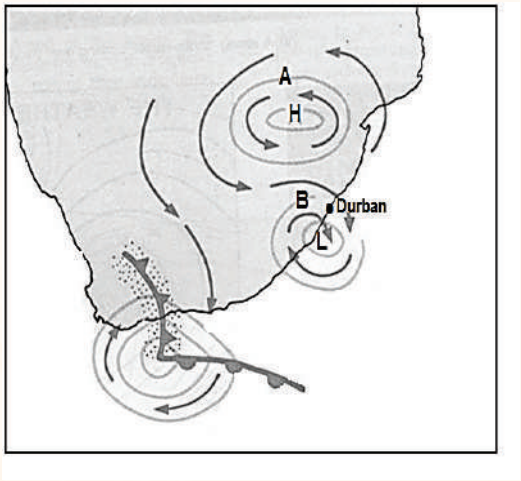
  -wind is warmed as it descends over the plateau;

-reaches the coast as warm dry wind.

- *Why warm and dry?:* Blow from land to sea
- *Danger*: veld fires
- *How wind stops*: Cold front moves over.

ACTIVITY 3.4

FIGURE 3.4: BERG WIND CONDITIONS



[Adapted from millarslocal.co.za]

3.4.1 Berg wind conditions occur during (summer/winter).

3.4.2 Pressure cell **A** is the (Kalahari/South Atlantic) high-pressure cell.

3.4.3 Pressure cell **B** is a (thermal/coastal) low-pressure cell.

3.4.4 The general direction of movement of the frontal depression is eastwards/westwards.

3.4.5 Durban will experience (onshore/offshore) winds.

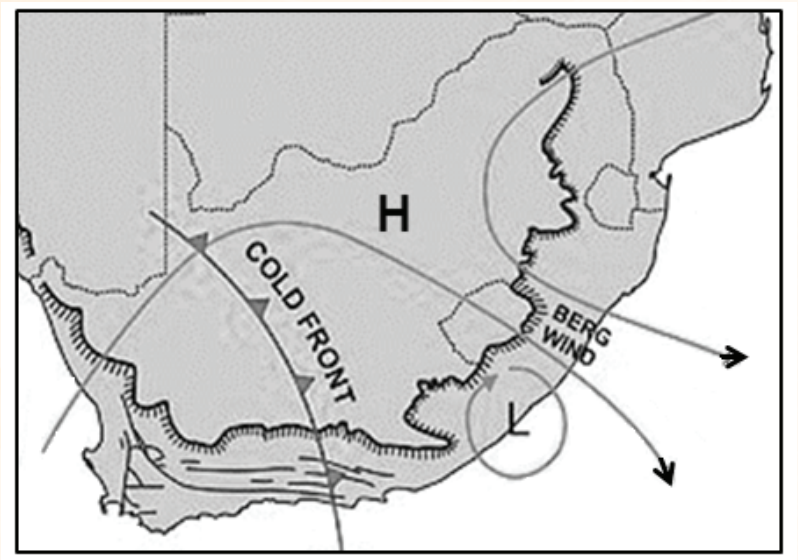
3.4.6 The cloud cover at Durban will be (overcast/clear) due to the winds identified in QUESTION 3.4.5.

3.4.7 (Onshore/offshore) winds are associated with fog and light rain.

3.4.8 The risk of veld fires during berg wind conditions (increases/decreases) in the eastern parts of South Africa.

ACTIVITY 3.5

FIGURE 3.5 BERG WIND CONDITIONS



[Adapted from www.wikipedia.org

3.5.1 Name TWO conditions visible on the sketch map that are necessary for berg winds to form. (2 x 1)

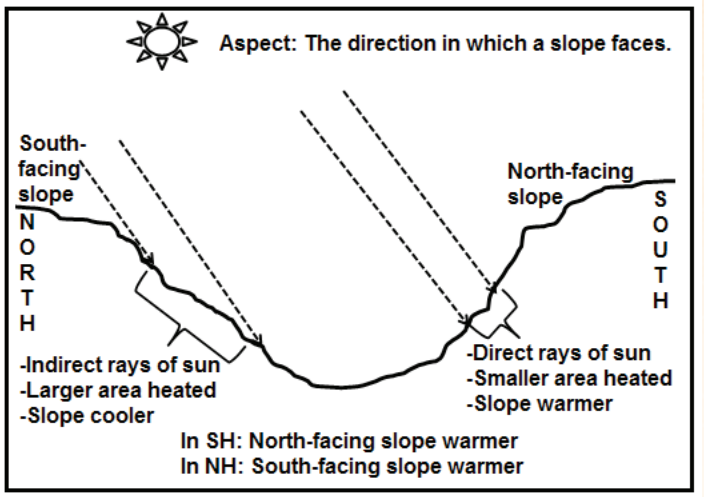
3.5.2 Draw a labelled cross-section diagram to explain the formation of berg winds along the east coast of South Africa. (4 x 1)

1.1.3 Why are berg winds most likely to occur in winter? (1 x 2)

VALLEY CLIMATES

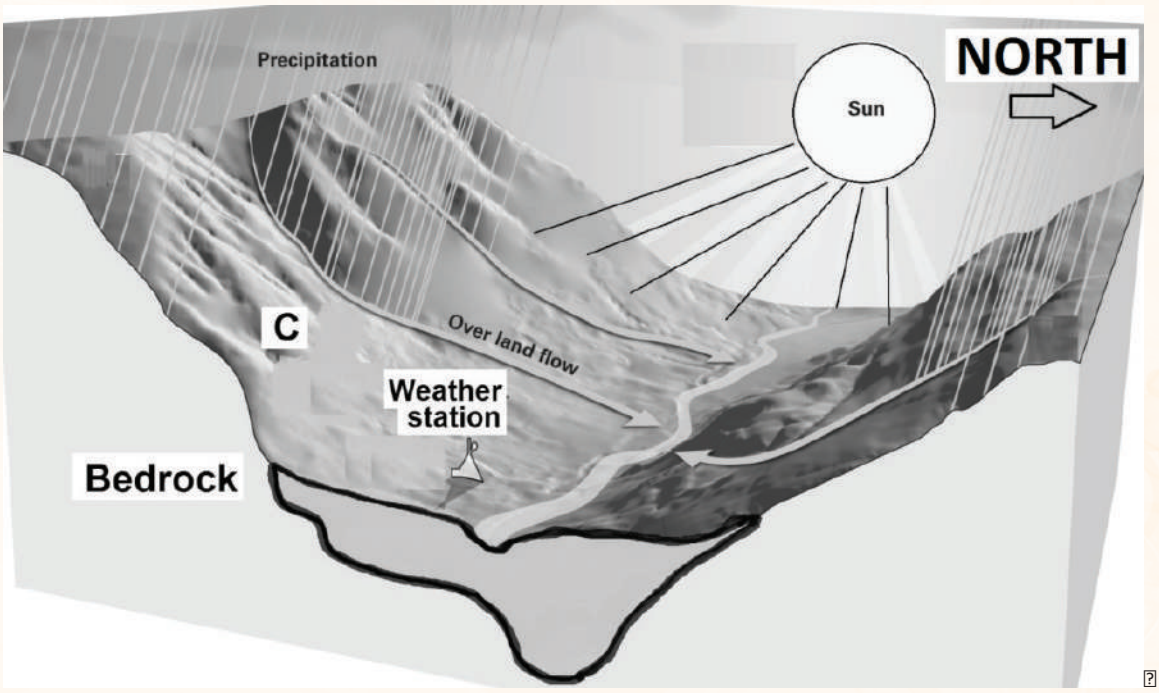
WHAT YOU NEED TO KNOW

Which slope is warmer? Why? (NH and SH)



ACTIVITY 4.1

FIGURE 4.1: VALLEY CLIMATE



[Adapted from www.valleyclimates.com]

4.1.1 Is the influence of aspect on the valley slopes more evident in summer or in winter?

4.1.2 Will slope X or slope Y receive the direct rays of the sun?

4.1.3 Which slope - X or Y- will have the highest groundwater content?

4.1.4 Will slope X or slope Y be more suitable for crop farming?

4.1.5 Which slope - X or Y - is called the shadow zone?

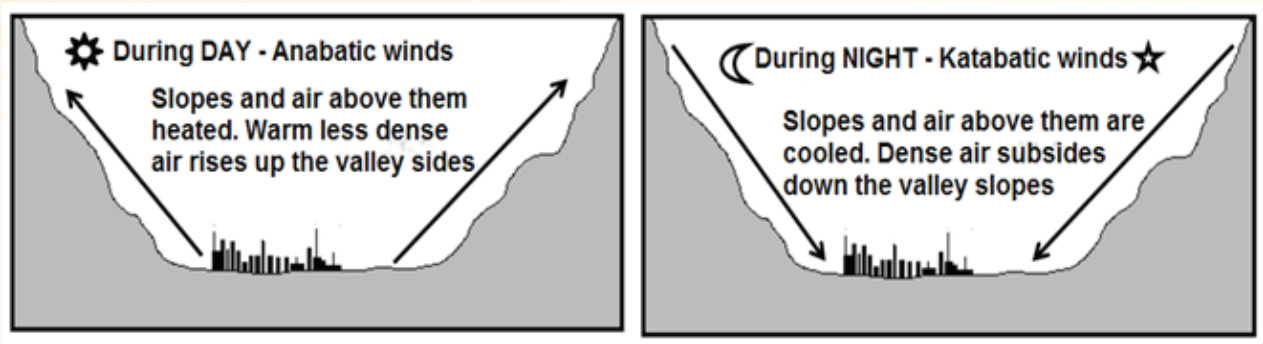
4.1.6 Are settlements more likely to be located at A or B?

4.1.7 Would valley slopes closer to the equator be more or less influenced by aspect?

1.1.8 Are forests more likely to be found on slope X or slope Y? (8 x 1)

Explain how anabatic and katabatic winds are formed.

Discuss the influence on settlements and farming.

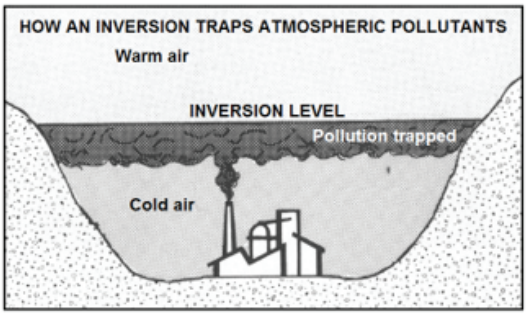


INVERSIONS

WHAT YOU NEED TO KNOW

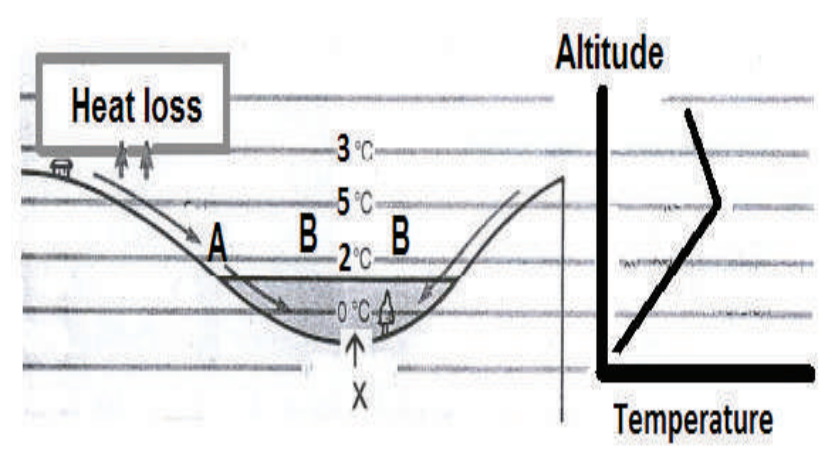
How are inversions formed? What is the influence of inversions on pollution?

- Inversions form when the normal pattern of air temperature is reversed.
- Air closer to the ground is cooler than the air above it.
- Happens on calm cloudless winter nights.
- Upper slopes cool rapidly.
- Cold air sinks down slopes to the valley.
- The colder air is trapped under warmer air
- Temperature increases with altitude in The valley
- Polluted air gets trapped and cannot rise.



ACTIVITY 4.2

FIGURE 4.2 VALLEY CLIMATES



[Source: http//www.educom/climates]

4.2.1 Identify wind A. (1 x 1)

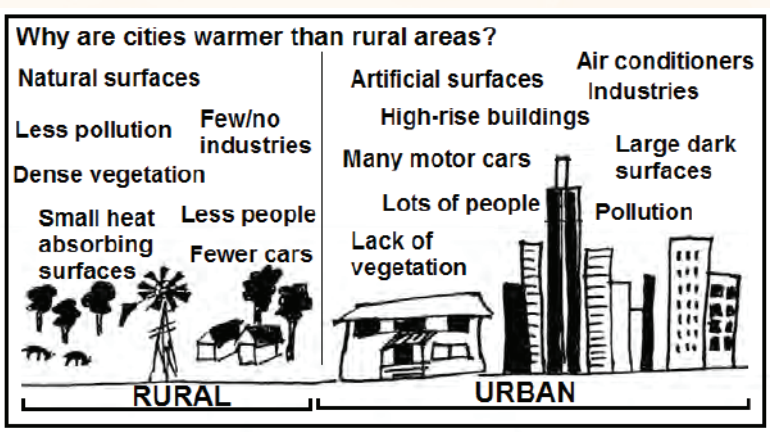
4.2.2 Explain why this wind occurs at night. (2 x 2)

4.2.3 Give ONE reason why the layer of warm air at B is situated halfway up the slope. (1 x 2)

URBAN CLIMATES

WHAT YOU NEED TO KNOW

Why are cities warmer than rural areas?

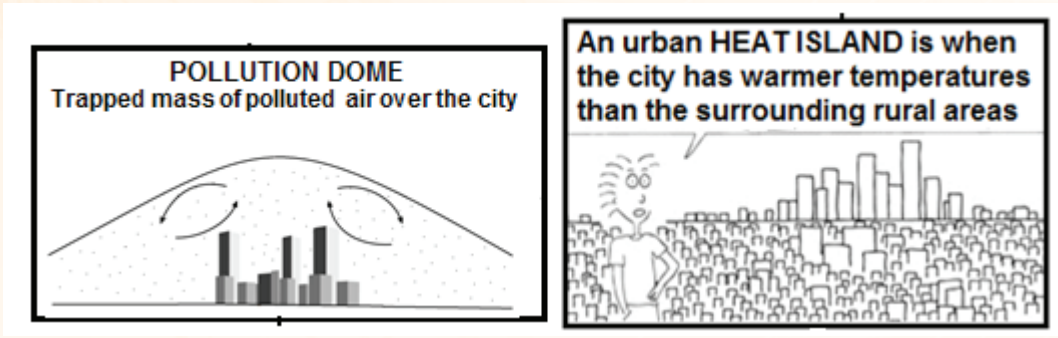


- Building materials: concrete, tar and bricks absorb heat.

- Tall buildings trap heat.
- Air pollution helps to trap heat.
- Burning of fuels.
- Transport.
- Industries release heat.
- Central heating from shops.

Large concentration of people.

-Heat island and pollution domes.

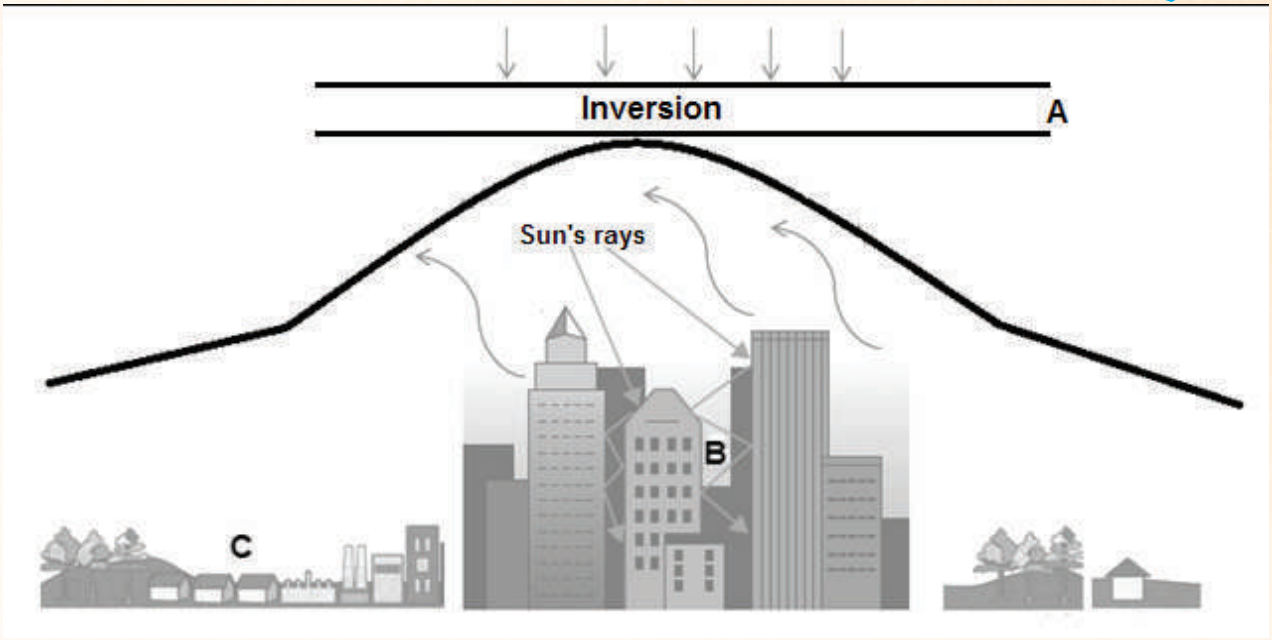


-Ways to reduce the influence of heat islands.

- energy saving strategies;
- green belts;
- roof gardens;
- public transport;
- use lighter-coloured materials.

ACTIVITY 5.1

FIGURE 5.1: CITY CLIMATES



[Source: Examiner's own sketch]

5.1.1 The sketch shows a (day/night) situation.

5.1.2 The inversion layer is found at a (higher/lower) altitude at night.

5.1.3 The inversion layer (increases/decreases) pollution concentration over the city during the night.

5.1.4 The heating of the city at B is the result of (multiple reflections of heat/terrestrial radiation).

5.1.5 The channelling of wind between tall buildings (increases/decreases) the wind speed.

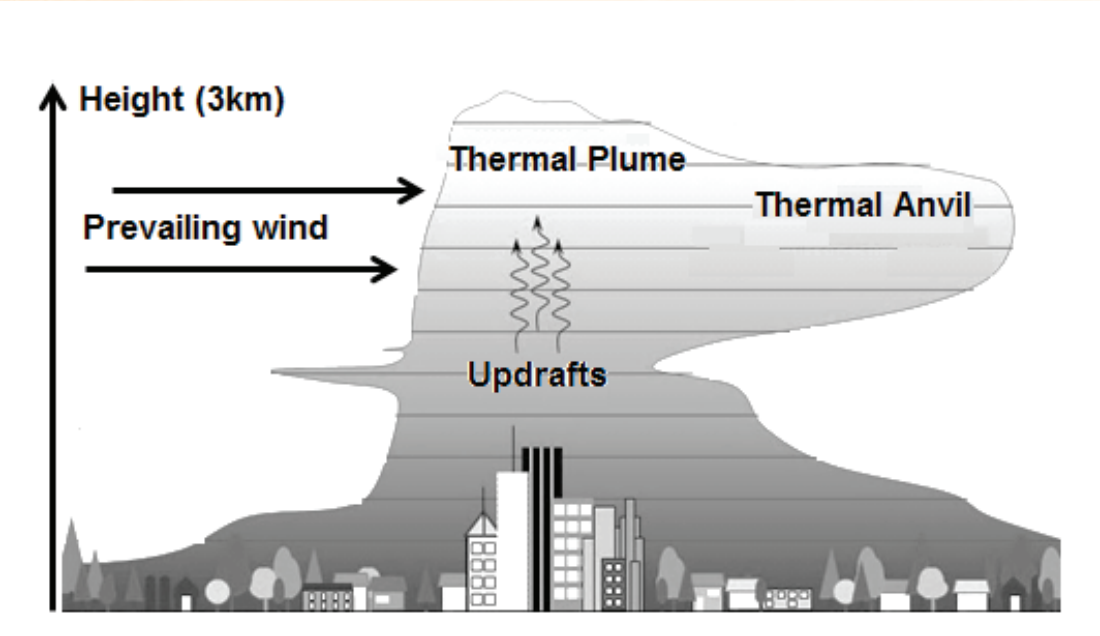
5.1.6 Temperature (increases/decreases) from B to C.

5.1.7 The influence of evapotranspiration on cooling the air will be (less/more) at B compared to C.

5.1.8 Area B is associated with (more/less) cloud coverage compared to area C. (8 x 1)

ACTIVITY 5.2

FIGURE 5.2: DIMENSIONS OF AN URBAN HEAT ISLAND



[Adapted from http://www.asdu.edu.co.za]

5.2.1 Give a possible reason for the asymmetrical (unbalanced) shape of the thermal plume of the urban heat island. (1 x 1)

5.2.2 Give TWO points of evidence that suggest that FIGURE 5.2 represents daytime conditions. (2 x 1)

5.2.3 Draw a labelled diagram to show changes to the shape of the urban heat island at night. (2 x 1)

GEOMORPHOLOGY

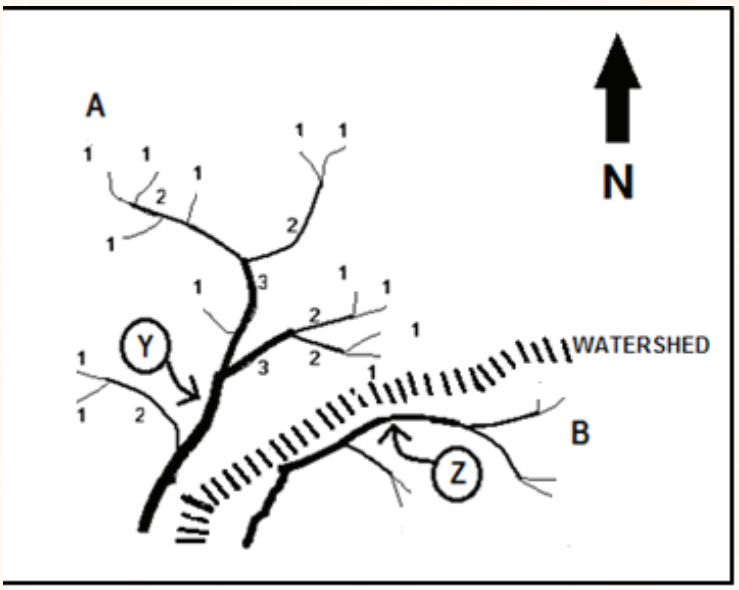
DRAINAGE SYSTEMS

WHAT YOU NEED TO KNOW

Define all concepts.

ACTIVITY 6.1

FIGURE 6.1 **DRAINAGE BASINS**



[Source: Examiner's own sketch]

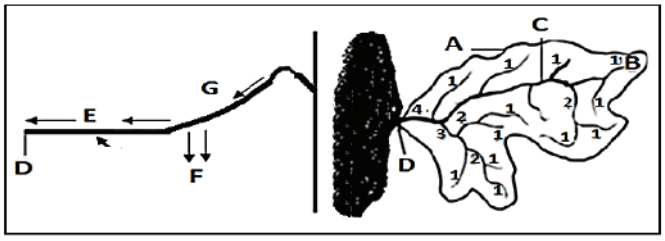
6.1.1 Define the term drainage basin. (1 x 1)

6.1.2 Does drainage basin A (north of the watershed) or drainage basin B (south of the watershed) have a higher drainage density? (1 x 1)

6.1.3 State ONE factor that could have contributed to the high drainage density of the drainage basin identified in QUESTION 6.1.2. (1 x 2)

ACTIVITY 6.2

FIGURE 6.2 **DRAINAGE BASIN AND ITS PROFILE**



[Adapted from Ohio Stream Management Guide 3]

6.2.1 Name ONE source of water for drainage basin A.

6.2.2 Give a term that best describes B.

6.2.3 Name the stream order at point C.

6.2.4 Name a fluvial feature that is likely to form at point D in the river.

6.2.5 Name the process that gave rise to alluvium being found at point E.

6.2.6 Give a term that describes the movement of water at F.

6.2.7 Give the term that describes the high-lying area surrounding drainage basin A.

6.2.8 Give the term that describes the lowest point to which a river erodes. (8 x 1)

ACTIVITY 6.3

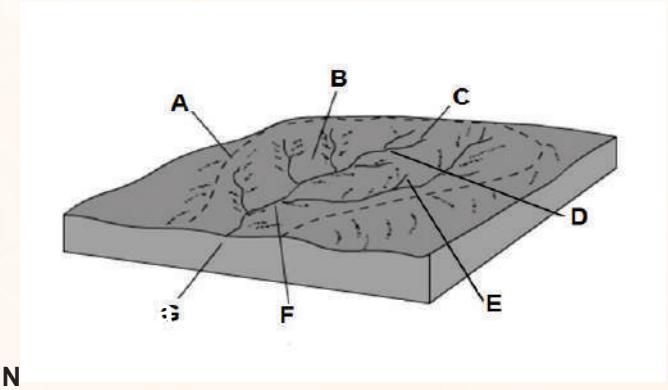


FIGURE 6.3 DRAINAGE BASIN

[Adapted from http://www.earthonlinemedia.com/ebooks/tpe_3e/fluvial_systems/drainage_basin.jpg]

6.3.1 A is a/an …, which is a mountain range that separates one catchment area from another catchment area.

6.3.2 B is a/an …, which is a high-lying area within a catchment area, which separates tributaries.

6.3.3 C is the …, which shows the origin of a river system in mountainous high-lying areas.

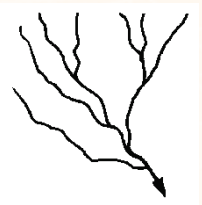
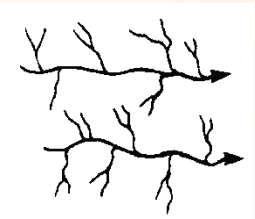
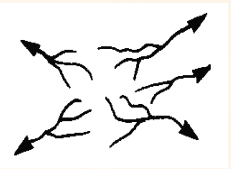
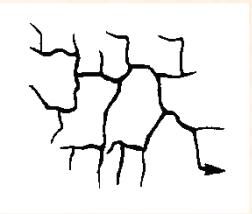
6.3.4 D is the … where two or more streams join.

6.3.5 E is a/an …, which provides water to the main river.

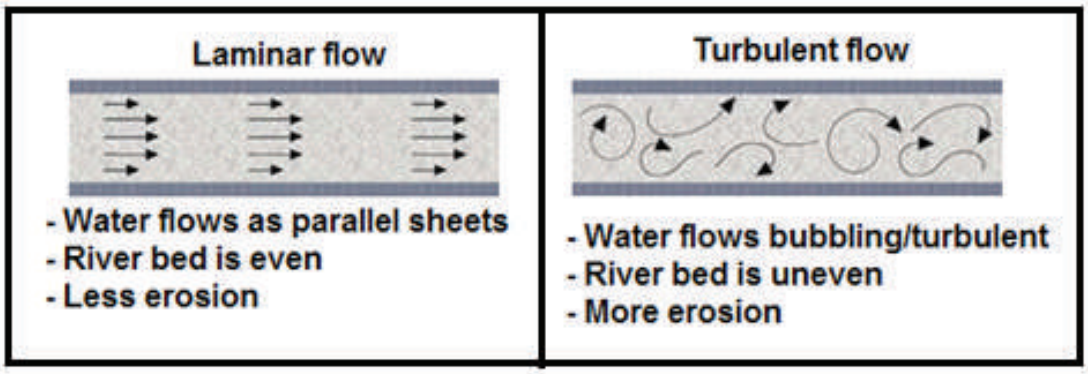
6.3.6 F is the … course of the river.

6.3.7 G is the … where the river flows into the sea. (7 x 1)

Identify and describe ALL drainage patterns.

Pattern	Dendritic	Trellis	Radial	Rectangular
Diagram				
Description	Looks like branches of a tree. Tributaries join at acute angles.	Strong main stream joined by short tributaries at right angles.	Looks like spokes of a wheel when viewed from above.	Tributaries join at right angles and bend at 90°.
Underlying structures	Uniform rocks of similar hardness.	Gently sloping alternating layers of hard and soft rock.	Rivers flow away from a high central point like a butte or mesa.	Areas with hard rock that is well jointed.

Distinguish between laminar and turbulent flow



FLUVIAL PROCESSES

WHAT YOU NEED TO KNOW

Stages (courses) of a river

Key questions

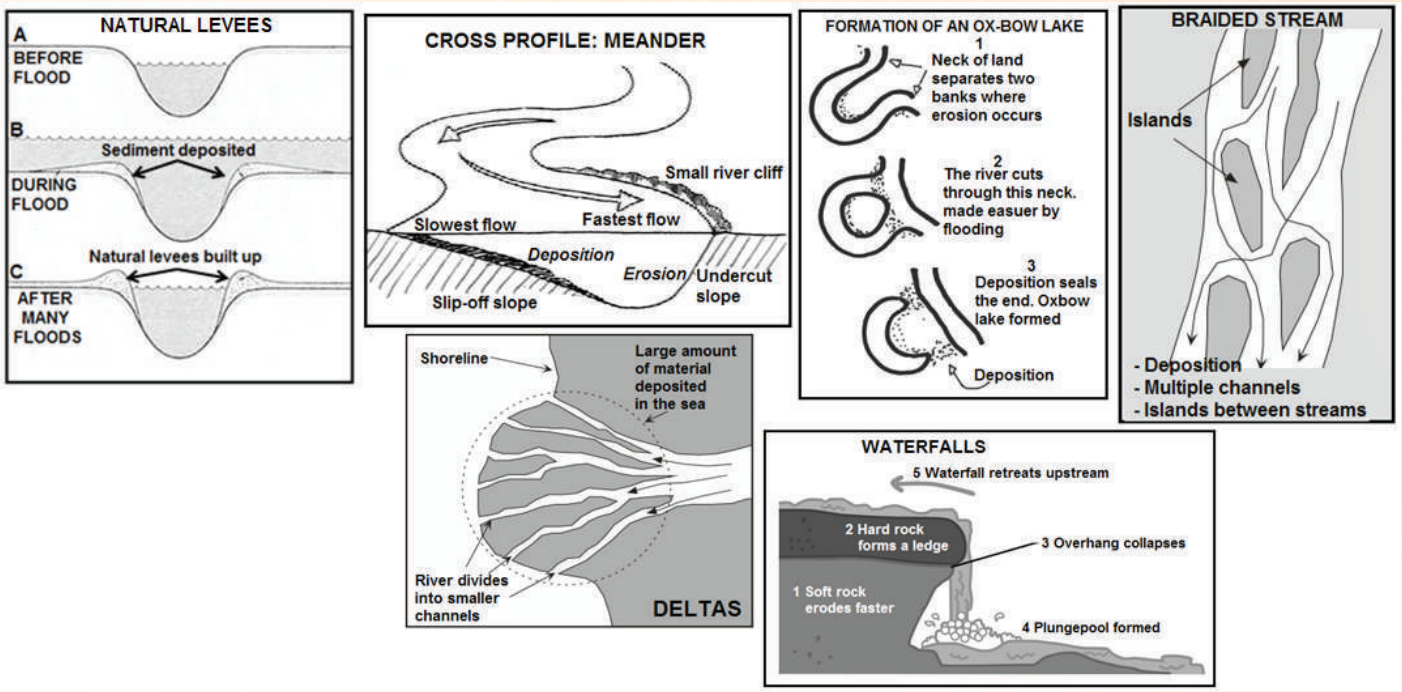
Stages of the river and characteristics of the upper, middle and lower course.

Identify/draw cross profiles of all 3 stages.

Longitudinal profile: The 'side view' of a river from its source to its mouth

Cross profile: The shape of the river valley from one bank to the opposite bank

COURSE/ STAGE	UPPER COURSE (YOUNG STAGE)	MIDDLE COURSE (MATURE STAGE)	LOWER COURSE (OLD STAGE)
CROSS PROFILE			
GRADIENT	Steep	Gradual	Almost flat
SPEED	Flows fast	Flows slower	Flows very slowly
PROCESSES	Downward erosion	Lateral erosion	Deposition
LANDFORMS	- Waterfalls - Rapids - Spurs	- Meanders - Spurs	- Sandbanks - Marshes - Braided stream - Meanders - Oxbow lakes



Identify/describe all fluvial landforms

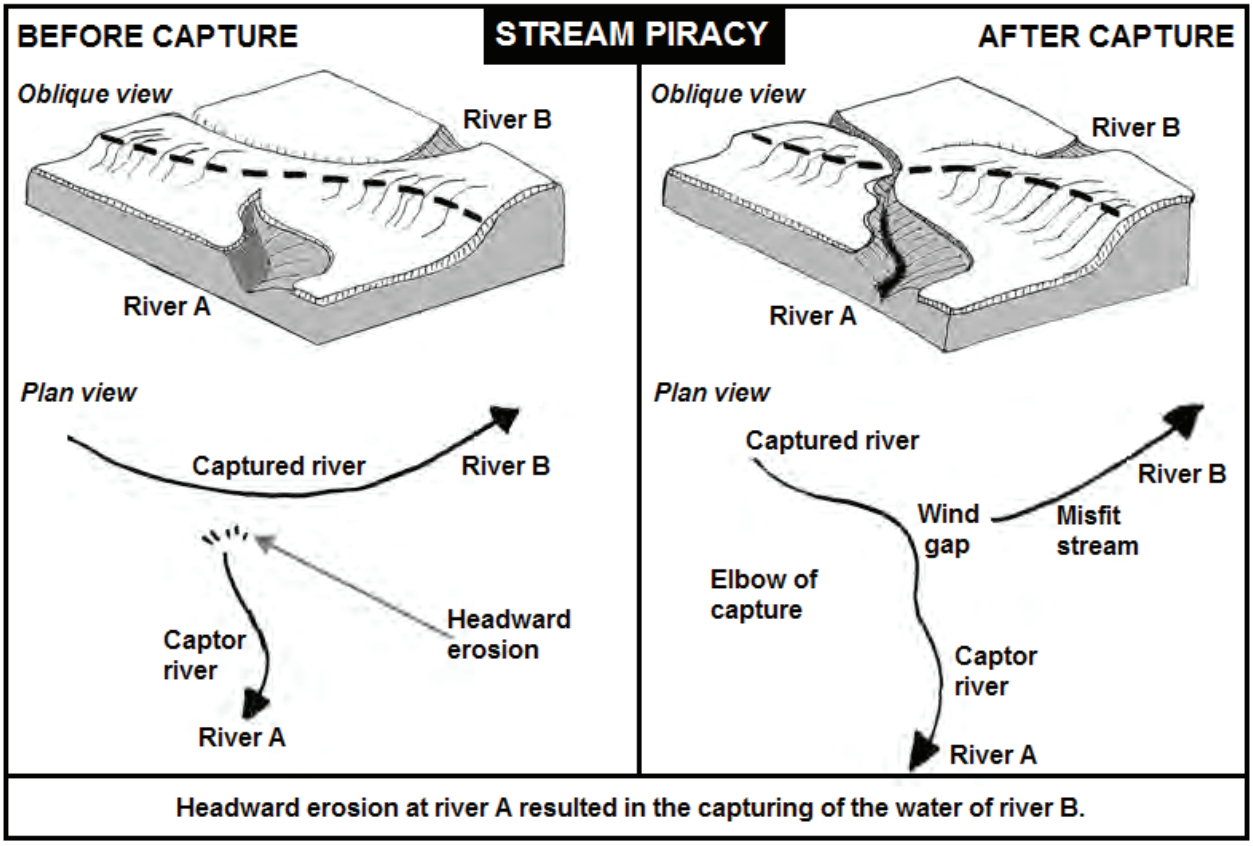
River capture (stream piracy)

WHAT YOU NEED TO KNOW

Key questions:

- *How does river capture (stream piracy) occur?*
- *Name the landform features of stream piracy. (NB must be able to identify on diagrams or draw and add labels)*

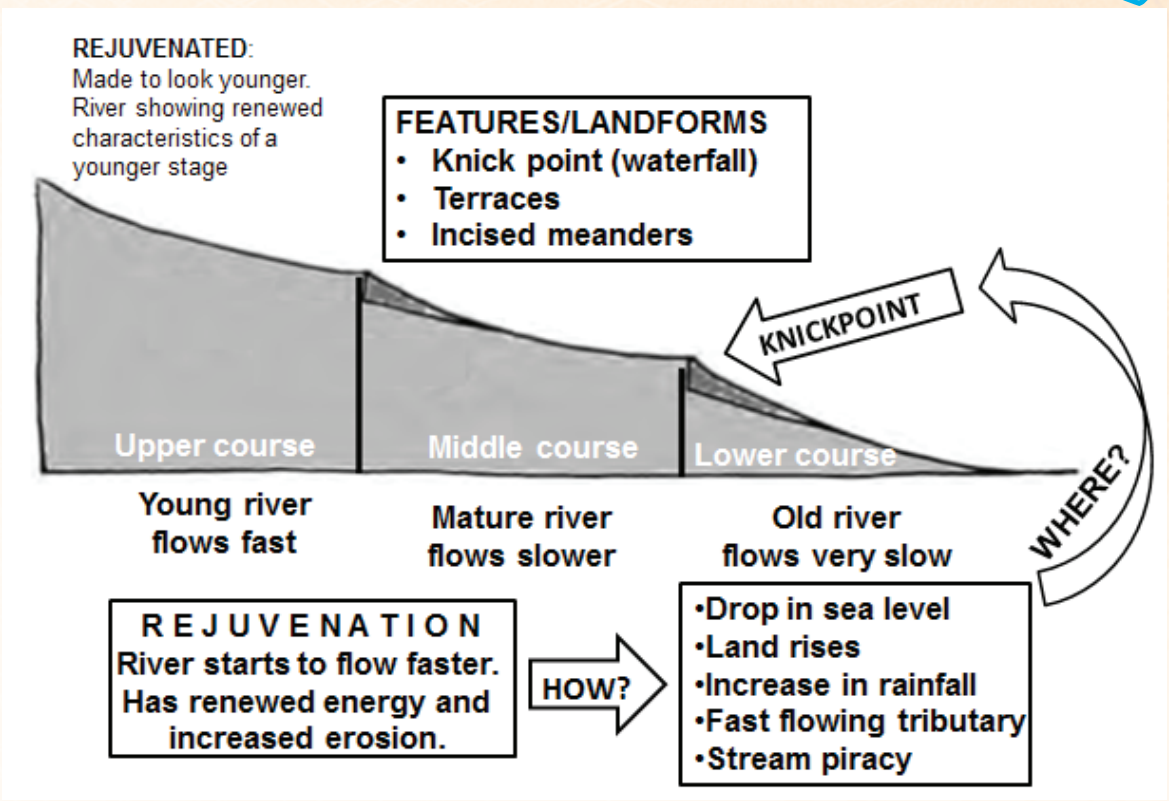
Stream piracy (river capture) takes place when the energetic stream (captor stream) cuts back and intercepts (takes) the water from the other river (captured/beheaded river).



FEATURE	EXPLANATION
Captor river	The energetic stream that intercepts (takes) the water of the other river.
Captured river	The river from which water was intercepted (taken) by the captor river.
Misfit stream	The river that has lost its water. (Also called a beheaded stream.)
Elbow of capture	The place where stream piracy has taken place.
Wind gap	The dry river valley between the elbow of capture and the misfit stream.
Waterfall	May form at the point where the captured river flows into the captor river.

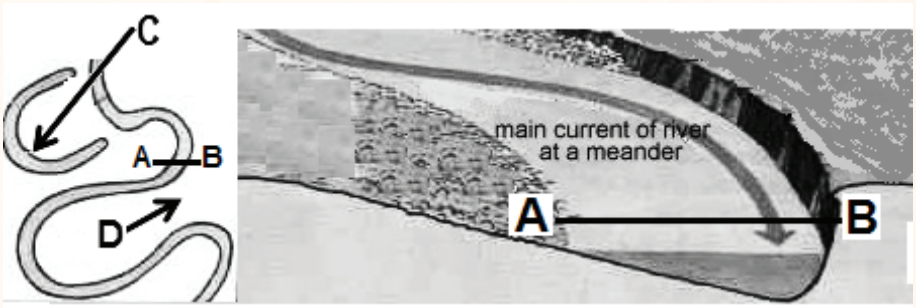
Rejuvenation

-Rejuvenation and its features.



ACTIVITY 7.1

FIGURE 7.1: SECTION OF A RIVER



[Adapted from easymapwork.blogspot.com]

7.1.1 Name the course of the river depicted in FIGURE 7.1.

7.1.2 Name river bank B.

7.1.3 Give a reason for the deposited material at river bank A.

7.1.4 Describe the shape of river bank B.

7.1.5 Name ONE characteristic of a river channel that can be seen in a cross-section between A and B.

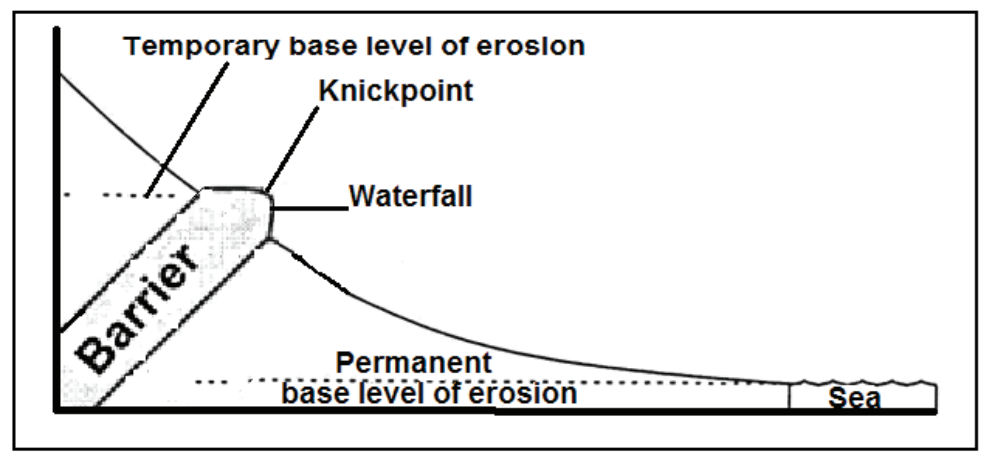
7.1.6 Did river erosion or deposition initially form the oxbow lake (C)?

7.1.7 State ONE difference between an oxbow lake and a meander scar.

7.1.8 What is the narrow area D within the meander loop called? (8 x 1)

ACTIVITY 7.2

FIGURE 7.2: RIVER PROFILE



[Examiner's sketch]

7.2.1 Identify the type of river profile in the diagram.

7.2.2 Does the river profile show a GRADED profile or an UNGRADED profile?

7.2.3 In which course of the river did the waterfall develop?

7.2.4 Will rejuvenation take place UPSTREAM or DOWNSTREAM of the knick point?

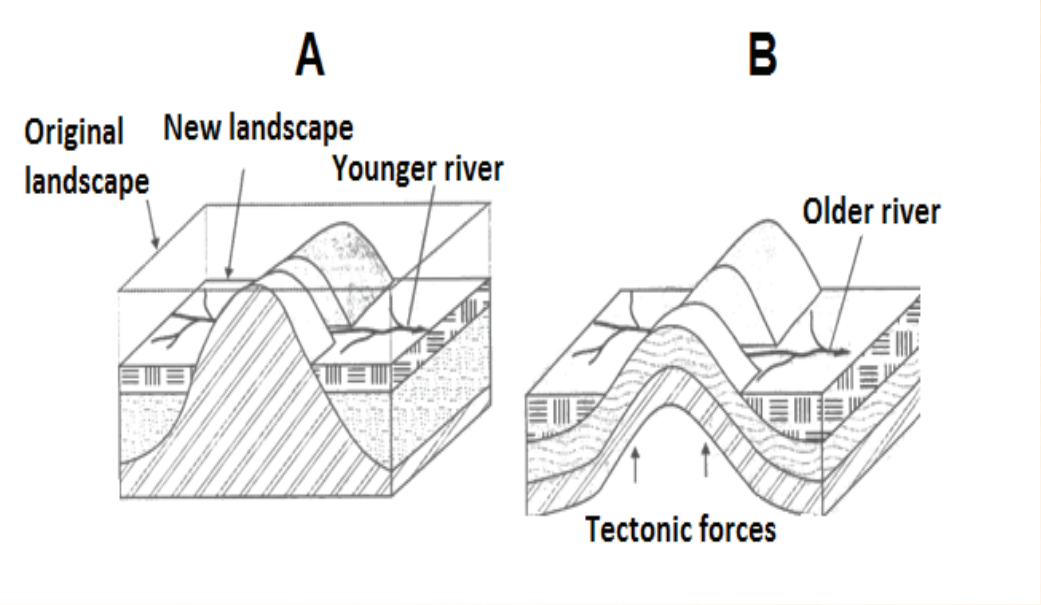
7.2.5 Name the permanent base level of erosion visible in FIGURE 2.2.

7.2.6 Name a temporary base level of erosion visible in FIGURE 2.2.

7.2.7 Will the waterfall move UPSTREAM or DOWNSTREAM? (7 x 1)

ACTIVITY 7.3

FIGURE 7.3 SUPERIMPOSED AND ANTECEDENT DRAINAGE PATTERNS



[Adapted from Exam Fever Series]

7.3.1 Distinguish between superimposed drainage and antecedent drainage. (2 x 1)

7.3.2 Give ONE reason why superimposed drainage does not change its course. (1 x 2)

7.3.3 Name ONE unique feature associated with the flow patterns of superimposed and antecedent drainage. (1 x 2)

7.3.4 Identify the tectonic force associated with the uplift of the surface evident in diagram B. (1 x 2)

ACTIVITY 7.4

FIGURE 7.4 RIVER CAPTURE NEAR PUNGWE GORGE

7.4.1 Match the following features of river capture to letters A, B, C or D:

(a) Misfit/beheaded stream (1 x 1)

(b) Wind gap (1 x 1)

(c) Elbow of capture (1 x 1)

7.4.2 State ONE characteristic of the misfit/beheaded stream. (1 x 1)

7.4.3 Explain how river capture has led to the rejuvenation of the Pungwe River. (2 x 2)

RURAL AND URBAN SETTLEMENT

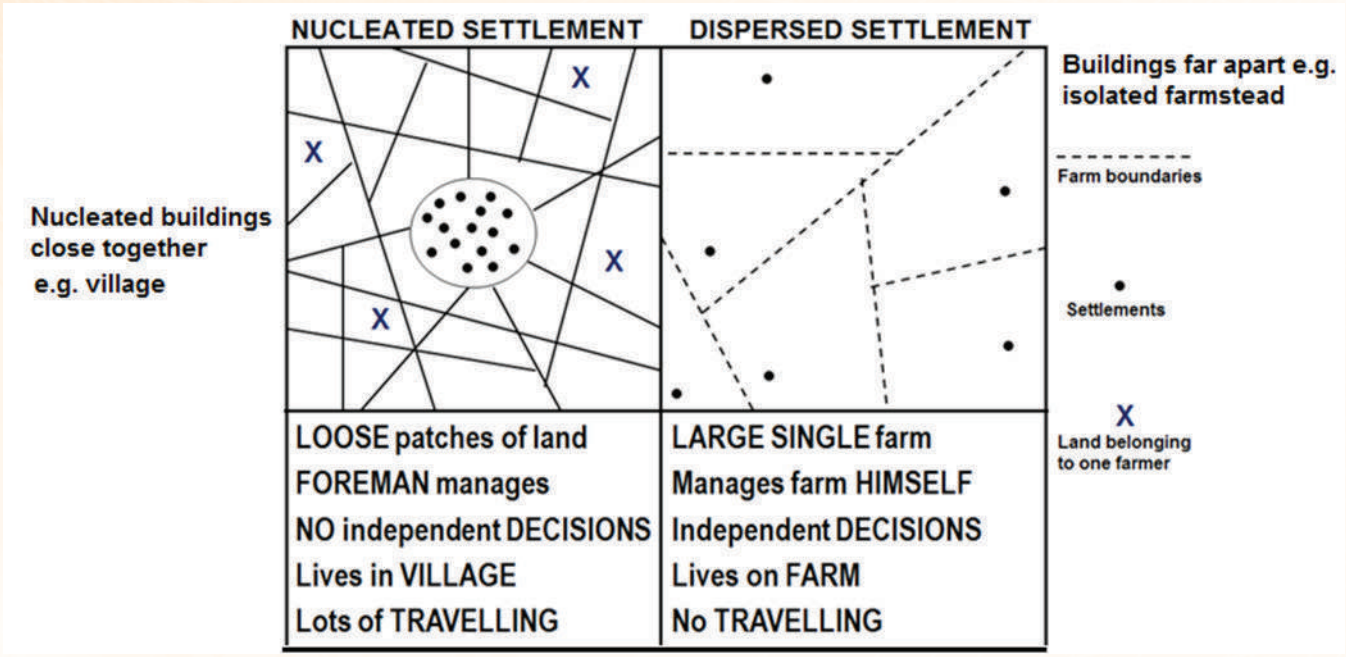
RURAL SETTLEMENTS

WHAT YOU NEED TO KNOW

Nucleated and dispersed patterns

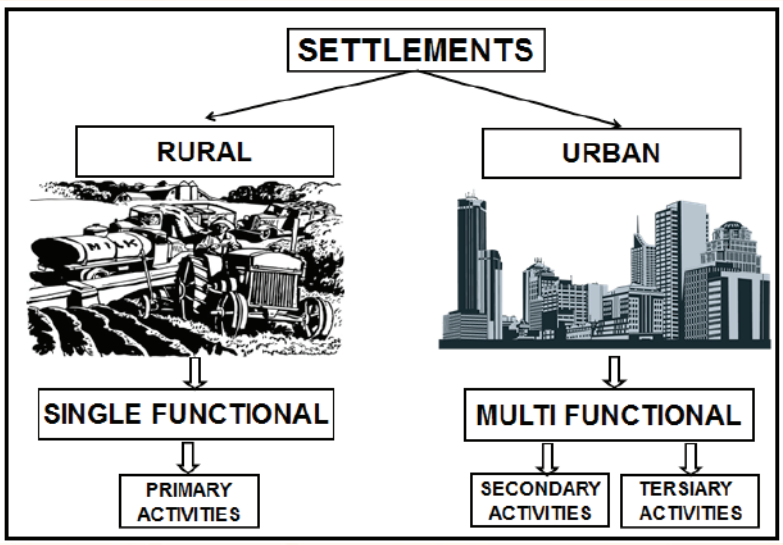
Identify the pattern with a reason.

- *What factors caused the type of pattern?*
- *Name the advantages/disadvantages of nucleated and dispersed patterns.*

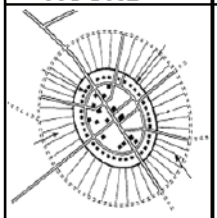


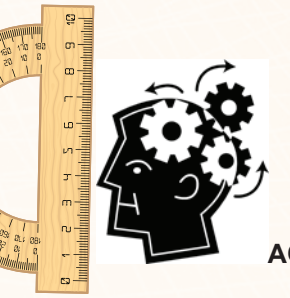
Rural and urban settlements

Distinguish between rural and urban settlements



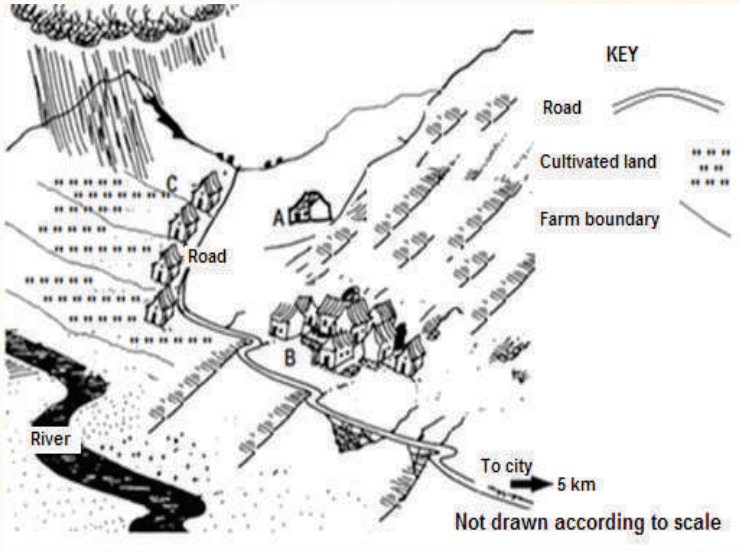
Round, linear and cross-road shapes

ROUND	CROSSROAD	LINEAR
		
Around central point	Where roads cross	Along road or river



ACTIVITY 8.1

FIGURE 8.1: TYPES OF RURAL SETTLEMENTS



[Adapted from Themes in Human Geography]

8.1.1 What evidence suggests that B is a dry-point settlement? (1 x 1)

8.1.2 State TWO social advantages of living in settlement B. (2 x 1)

Refer to settlement C.

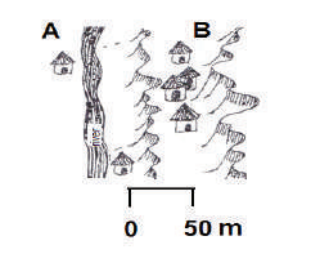
8.1.3 (a) Identify the settlement shape at C. (1 x 1)

(b) Suggest a reason for the elongated (long and narrow) shape of the individual farms in settlement C. (1 x 2)

(c) Explain why the farms at C are likely to experience soil erosion. (2 x 2)

ACTIVITY 8.2

FIGURE 8.2: RURAL SETTLEMENT TYPES



[Adapted from Physical Geography]

8.2.1 This settlement is a dry-point settlement.

8.2.2 Possible flooding is a hazard to this settlement.

8.2.3 This settlement is situated on high-lying ground.

8.2.4 This settlement has a dispersed pattern.

8.2.5 This settlement is situated on a flood plain.

8.2.6 This settlement has a roughly linear pattern.

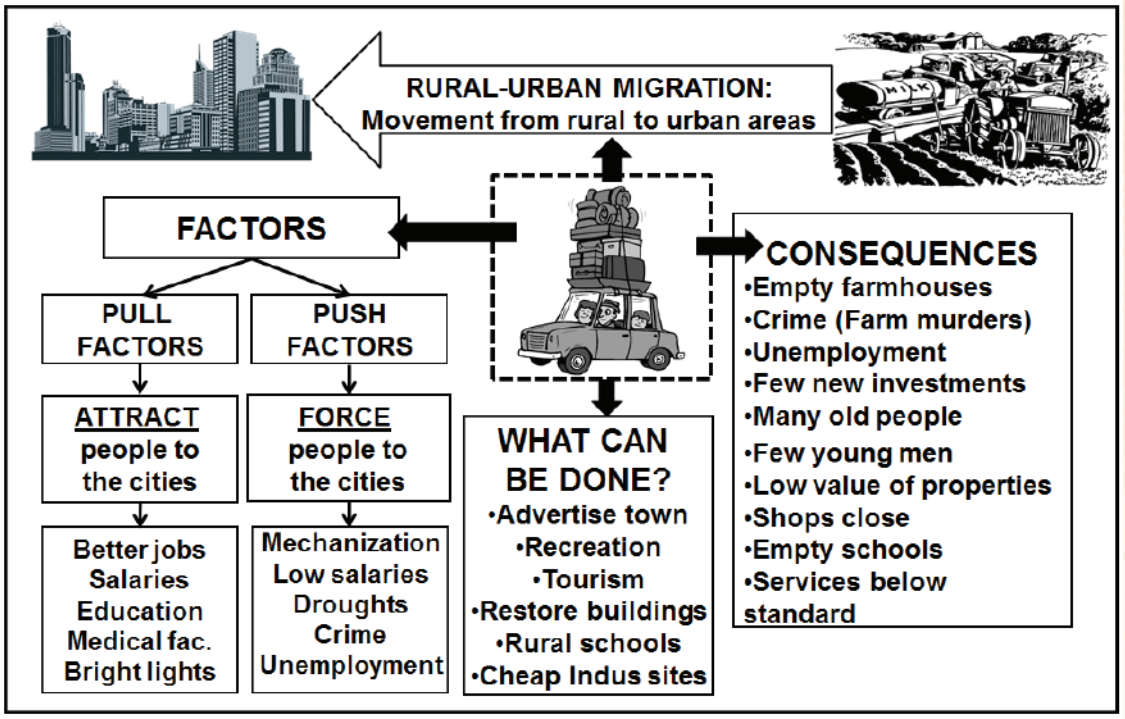
8.2.7 This settlement lends itself to large-scale farming.

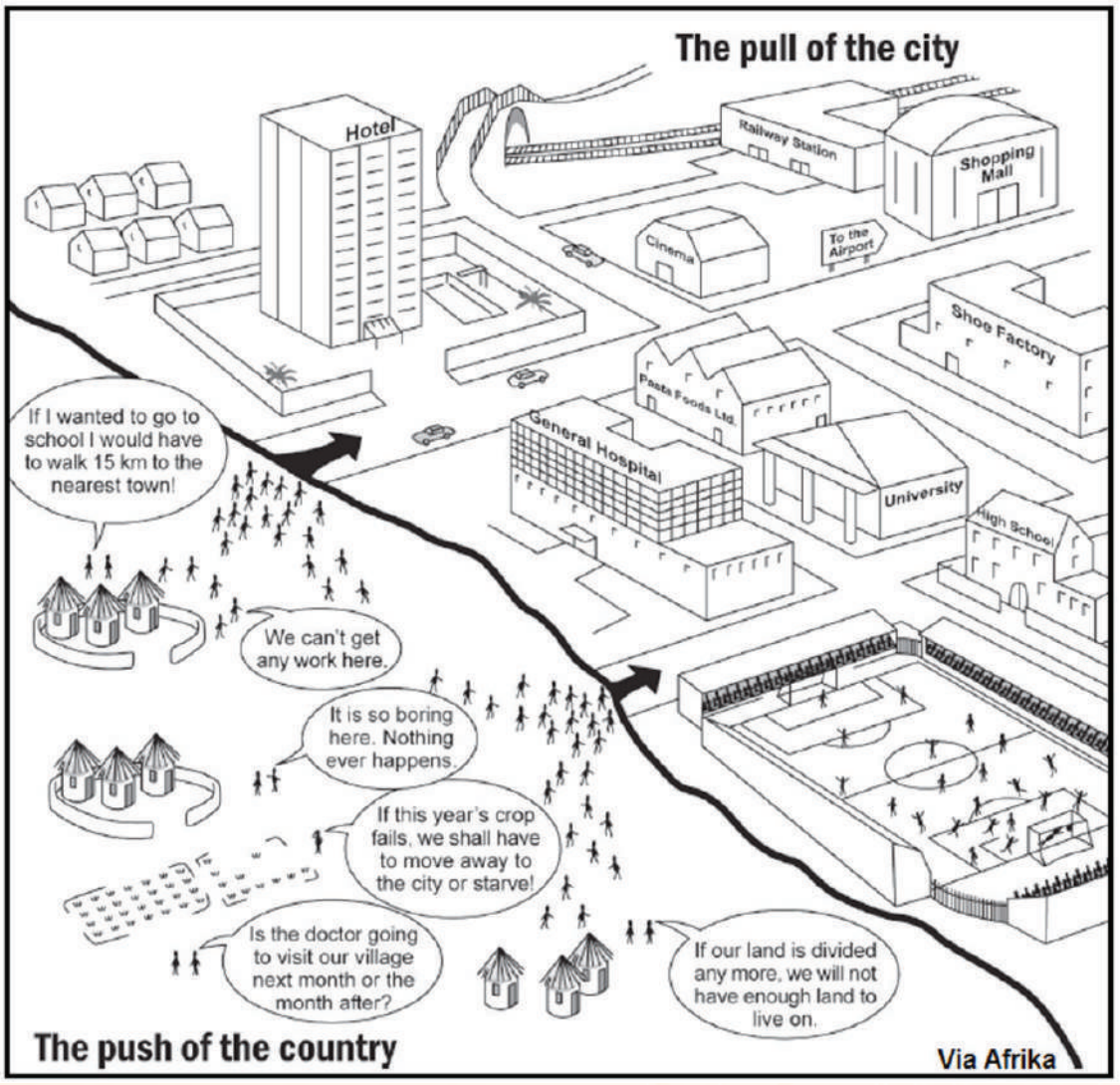
8.2.8 This settlement is a clustered settlement. (8 x 1)

RURAL SETTLEMENT ISSUES

WHAT YOU NEED TO KNOW

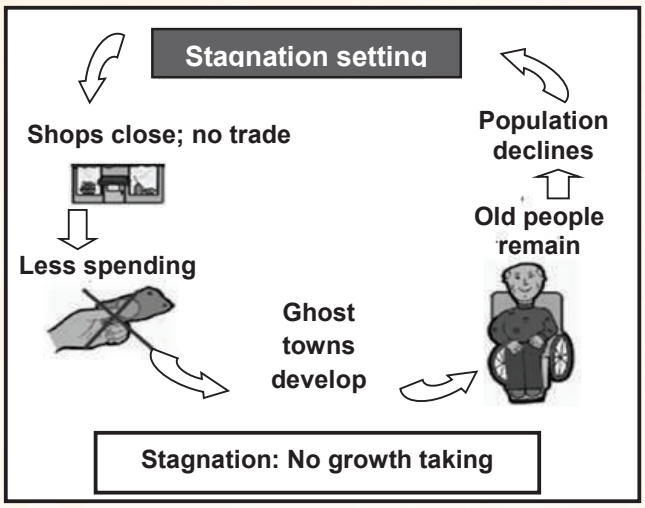
- *Define rural-urban migration.*
- *Discuss the causes of rural-urban migration (pull/push factors).*
- *Discuss the consequences of rural-urban migration.*
- *What can be done to get people to stay in rural areas?*


RURAL-URBAN MIGRATION:
Movement from rural to urban areas
FACTORS
PULL FACTORS
PUSH FACTORS
ATTRACT people to the cities
FORCE people to the cities
Better jobs
Salaries
Education
Medical fac.
Bright lights
Mechanization
Low salaries
Droughts
Crime
Unemployment
WHAT CAN BE DONE?
•Advertise town
•Recreation
•Tourism
•Restore buildings
•Rural schools
•Cheap Indus sites
CONSEQUENCES
•Empty farmhouses
•Crime (Farm murders)
•Unemployment
•Few new investments
•Many old people
•Few young men
•Low value of properties
•Shops close
•Empty schools
•Services below standard


The pull of the city
Hotel
Railway Station
Shopping Mall
Cinema
To the Airport
Shoe Factory
Pasta Foods Ltd.
General Hospital
University
High School
If I wanted to go to school I would have to walk 15 km to the nearest town!
We can't get any work here.
It is so boring here. Nothing ever happens.
If this year's crop fails, we shall have to move away to the city or starve!
Is the doctor going to visit our village next month or the month after?
If our land is divided any more, we will not have enough land to live on.
The push of the country
Via Afrika

ACTIVITY 9.1

FIGURE 9.1 **CHARACTERISTICS OF RURAL DEPOPULATION**



[Source: omega7geog.com]

9.1.1 Define the term rural depopulation. (1 x 1)

9.1.2 Which age group is the first to migrate to cities? (1 x 1)

9.1.3 State ONE characteristic of a ghost town. (1 x 2)

9.1.4 Give TWO reasons why stagnation (no growth) occurs in rural towns. (2 x 2)

URBAN SETTLEMENTS

WHAT YOU NEED TO KNOW

How site and situation affect location of urban settlements

A combination of physical and human factors determine where urban settlements are located.

Physical factors:

Fresh water, underlying rock and structure, relief, drainage aspect, resources.

Social factors:

Transport routes, harbours, defensibility, building materials, food supply.

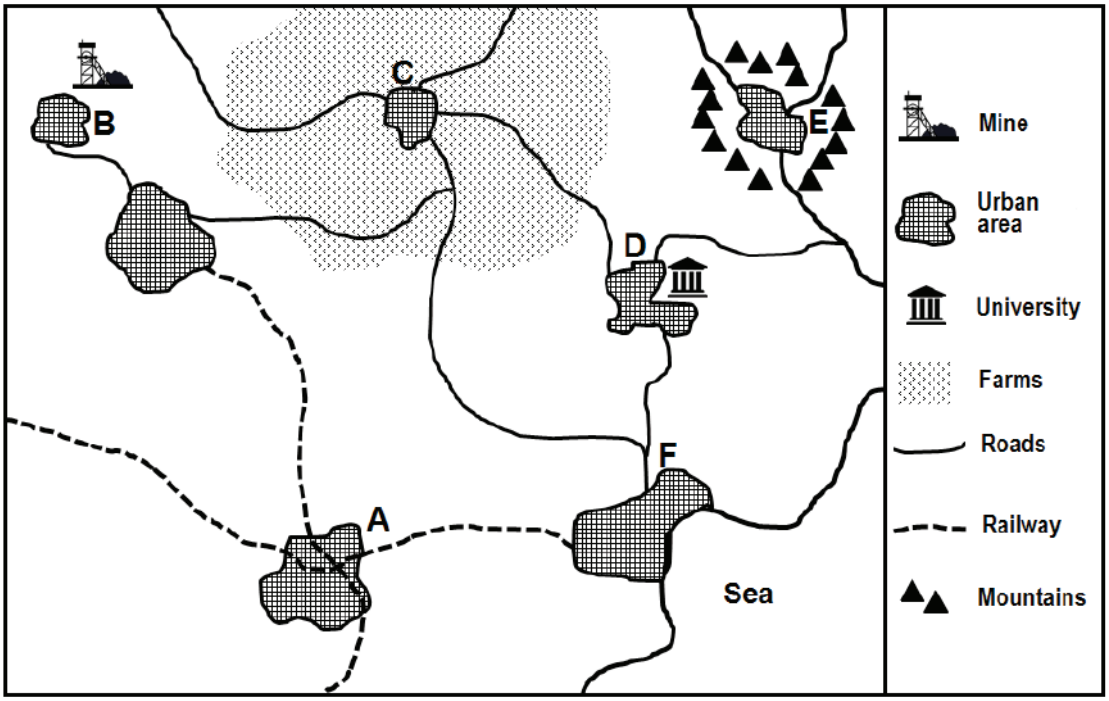
Types of urban settlements

1. CENTRAL PLACES	
Towns supplying urban goods and services to the surrounding rural area	
Low order goods/service • Need often (bread, milk, doctor) • Smaller threshold population • Several shops/services	**High order goods/service** • Don't need or need less often (health spa) • Larger threshold population • Few shops/services

2. TRADE AND TRANSPORT TOWNS/CITIES		
Established due to trade and transportation		
Break of bulk • Transport changes (e.g. from sea to land). • Example: Cape Town	**Junction** • Intersection of two main transport routes. • Example: De Aar	**Gap town** • Point of access at physical barrier. • Example: Worcester

3. SPECIALISED TOWNS/CITIES				
Mining Example: Welkom	Education Example: Stellenbosch	Industrial Example: Secunda	Resort Example: Margate	Commuter Example: Soweto

Identify the type of settlement at A-F in the diagram below. Give a reason for your answer.



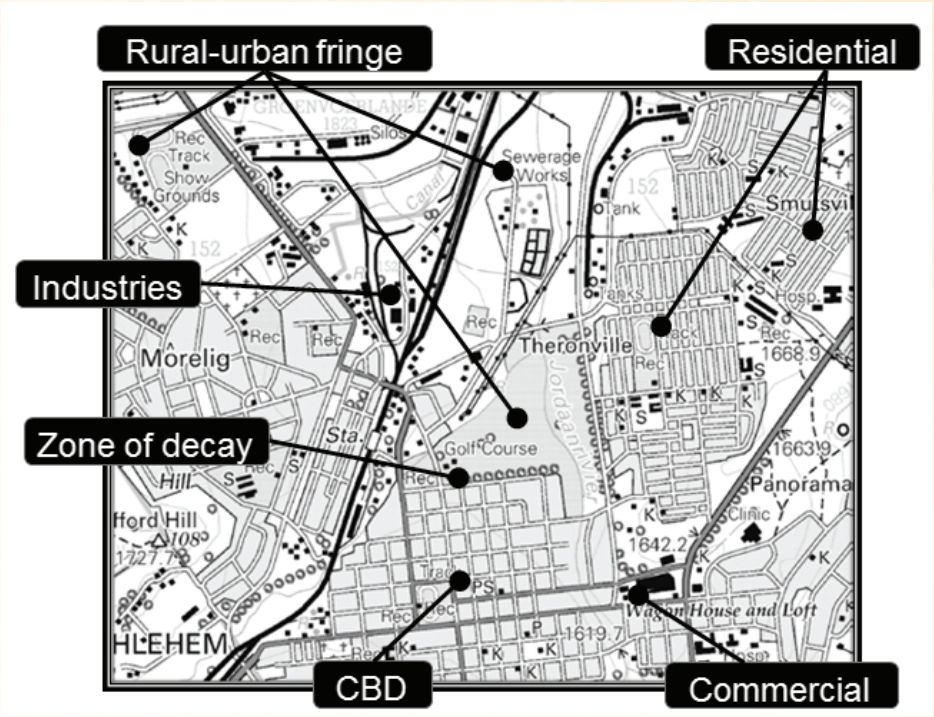
URBAN STRUCTURE

Land use zones

Land use zone	Where?	Characteristics

CBD		• Most accessible • Where transport routes meet • In the city centre 	• Highest land values • Highest building density • Tallest buildings • Concentration of shops and offices • High-order commercial functions
Industries	**(a) Light industry**	• Often near the CBD or residential areas • In planned industrial estates • Near road transport	• Little noise and air pollution • No heavy machinery
	(b) Heavy industry	• On the outskirts of the city on cheap land • Near major road and rail networks • On flat land • Near a water source	• Lots of air and noise pollution  • Dangerous
Residential	**(a) Middle to high income**	• Located away from the CBD • Good view	• Larger properties • Good services • Recreational areas
	(b) Low income	• Closer to the CBD	• Houses close together • Fewer facilities • Poor service provision • Smaller properties
	(c) Informal settlement	• On the outskirts of the city 	• Houses built out of plastic, wood, zinc • Unhealthy conditions • No service delivery • Poverty • Crime
Zone of decay (Transition zone)		• Just outside the CBD	• Mixed functions (residential, commercial, light industry) • Decayed buildings • Renewal • Valuable land
Rural-urban fringe		• On the edge of the urban area 	• urban functions invade the rural area • both urban and rural functions present • large properties because of cheaper land • plots and small-holdings • airports, cemeteries, power stations, golf courses, sewage works
Green belt		• In and around CBD 	• parks and sports fields • no buildings in this area • cleans the air in urban areas • for recreation purposes • very dense housing

- *Identify land use zone*
- *Where found*
- *Describe characteristics*



Street patterns

(1st and 2nd paper)

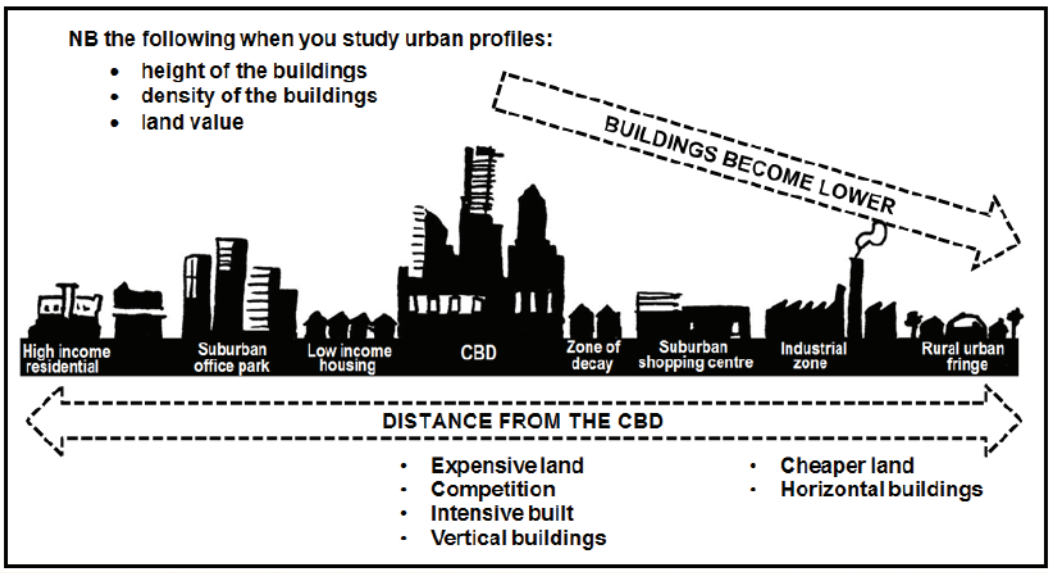
- *Identify the street patterns.*
- *Discuss the advantages of all 3 street patterns.*
- *Discuss the disadvantages of all 3 street patterns.*

Name	Gridiron/Rectangular	Radial	Irregular
			
Characteristics	Roads intersect at right angles.	Roads radiate outwards from a central point like a spider's web.	• No clear structure • Can be planned or unplanned
Advantages	• Easy to plan • Land divided easily • Easy to find your way.	• Easier flow of traffic • All roads lead to a central point	• Improves traffic flow • Fewer intersections • Accommodates topography
Disadvantages	• Traffic congestion • Monotonous • Accidents	• Traffic jams • Traffic is slow • Wasted space	• Difficult to plan • Easy to get lost • Not easy to expand or sub-divide

Urban profile

***Key questions*:**

- *What is meant by the term urban profile?*
- *Describe how the buildings change as you move away from the CBD.*
- *Why does the height and density of the profile change?*



ACTIVITY 10.1

10.1	Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–H) next to the question number.		

COLUMN A		COLUMN B	
10.1.1	An urban settlement that provides goods and services to the surrounding rural population.	A	low-order service
10.1.2	A small settlement with few functions, for example a country town.	B	sphere of influence
10.1.3	The minimum number of people required to support a business.	C	high-order centre
10.1.4	The area from which a business draws its customers (also known as a market area).	D	range of goods
10.1.5	The maximum distance a consumer is willing to travel to purchase goods.	E	threshold population
10.1.6	Services that are required every day and used by people on a regular basis.	F	low-order centre
10.1.7	A large settlement with many functions, for example a city.	G	central place
		H	high-order service

ACTIVITY 10.2

10.2	Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–H) next to the question number.		

COLUMN A		COLUMN B	
10.2.1	A system of ranking urban areas according to size and function.	A	urban morphology
10.2.2	Movement of people from urban to rural areas.	B	urban sprawl
10.2.3	The view of a city from the side.	C	rural-urban fringe
10.2.4	Formless expansion of urban areas into the surrounding rural areas.	D	urban hierarchy
10.2.5	The ageing, decaying and deterioration of buildings in the inner city.	E	urban profile
10.2.6	The external shape of an urban area.	F	counter-urbanisation
10.2.7	The zone on the outskirts of the city where both urban and rural functions are found.	G	urban blight
		H	rural-urban migration

(7 x 1) (7)

URBAN SETTLEMENT ISSUES/PROBLEMS

WHAT YOU NEED TO KNOW

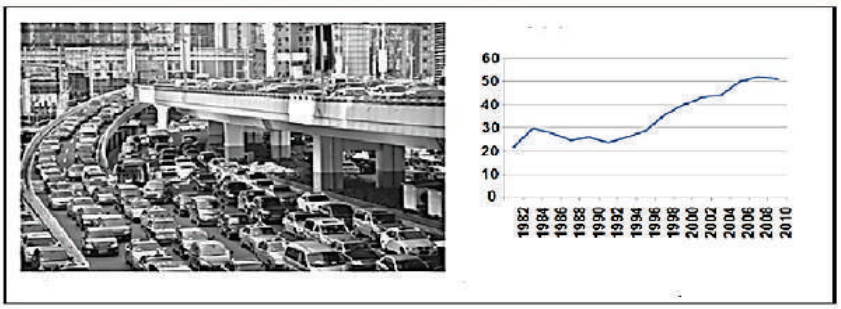
- *List the causes of each issue.*
- *What are the effects of each issue?*
- *How can issues be managed?*

	CONGESTION	URBAN DECAY	CENTRALISATION
CAUSES	• Too many people using their own cars • Not enough public transport • Old street pattern	• Too many people living in the city • Empty buildings	• High demand for land in the city • Too many people living in the city

EFFECTS	• Air pollution • More accidents • Stress, health problems road rage	• Slums develop • Services decline • Increased pollution • Area becomes dirty	• Increased pollution • Health problems • Destruction of environment • Production of too much waste
SOLUTIONS	• Improve public transport • Lift schemes • Decentralisation of businesses • Synchronise traffic lights	• Renovation • Renewal • Reduce housing density • Improve services	• Decentralisation of functions • Green belts • Stricter control of pollution

ACTIVITY 11.1

FIGURE 11.1 **TRAFFIC CONGESTION**



[Source: www.chron.com/the guardian.com]

11.1.1 Define the term traffic congestion. (1 x 1)

11.1.2 State ONE negative effect of traffic congestion on the physical environment. (1 x 1)

11.1.3 What is the trend shown by the graph for 1982 to 2010 with regard to the number of hours of delay per commuter per year? (1 x 2)

11.1.4 Give a possible reason for your answer to QUESTION 3.3.3. (1 x 2)

11.1.5 Describe TWO negative effects that this delay may have on commuters. (2 x 2)

11.1.6 Suggest TWO possible ways in which traffic congestion in urban areas can be reduced. (2 x 2)

ECONOMIC GEOGRAPHY OF SOUTH AFRICA

ECONOMIC SECTORS

WHAT YOU NEED TO KNOW

Key question: *Define primary, secondary and tertiary activities.*

ECONOMIC SECTORS

- **PRIMARY ACTIVITIES**
  Extraction and exploitation of raw materials
- **SECONDARY ACTIVITIES**
  Processing and manufacturing of primary materials
- **TERTIARY ACTIVITIES**
  Provide~~s~~ services to the consumer

ACTIVITY 12.1 ECONOMIC SECTORS

12.1 Various options are provided as possible answers to the following questions. Choose the most correct answer and write down only the letter (A–D).

	12.1.1	Mining is an extractive activity that is an example of the ... economic sector.			
		A	primary		
		B	secondary		
		C	tertiary		
		D	quaternary		
	12.1.2	Which ONE of the following characterises the tertiary sector?			
		A	Forestry		
		B	Manufacturing		
		C	Research		
		D	Transport		
	12.1.3	The overseas market where products are sold outside South Africa is known as the … market.			
		A	home		
		B	import		
		C	export		
		D	regional		

	12.1.4	An example of a value-added product is:			
		A	Maize		
		B	Soya beans		
		C	Bread		
		D	Sunflower seeds		
	12.1.5	The Maputo Development Corridor links the ... industrial region with the harbour in Maputo.			
		A	PWV		
		B	Durban-Pinetown		
		C	Port Elizabeth-Uitenhage		
		D	South-western Cape		
	12.1.6	The major manufacturing industry in the Port Elizabeth-Uitenhage area is:			
		A	iron and steel production.		
		B	motor vehicle assembly.		
		C	canning fish.		
		D	refining sugar.		
	12.1.7	An industry that can be established where the modes of transport change is known as a/an ... industry.			
		A	ubiquitous		
		B	raw material-orientated		
		C	bridge		
		D	footloose		
	12.1.8	… promote industrialisation along major routes.			
		A	Spatial development initiatives		
		B	Industrial development zones		
		C	Growth points		
		D	Deconcentration points (8 x 1)		(8)

ACTIVITY 12.2 ECONOMIC SECTORS

12.2 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question number.

COLUMN A		COLUMN B	
12.2.1	Type of economic activity when a service is rendered.	A	formal employment
12.2.2	Total value of goods and services produced in a country in one year, expressed as a percentage.	B	trade
12.2.3	Type of employment where people find work for themselves and they are not contracted by a business or company.	C	informal employment
12.2.4	Import and export relations between two countries.	D	Good Hope Plan
12.2.5	Type of employment when people are contracted to work for a business or company.	E	quaternary economic activities
12.2.6	Post-apartheid strategy for economic development.	F	tertiary economic activities
12.2.7	Economic activities that are concerned with scientific research and collecting and processing information.	G	SDI (spatial development initiative)
12.2.8	Apartheid strategy for economic development.	H	gross domestic product
		I	secondary economic activities
			(8 x 1)

AGRICULTURE

WHAT YOU NEED TO KNOW

Key questions:

- *Discuss the favourable factors that impact on agriculture in South Africa.*
- *Discuss the unfavourable factors that impact on agriculture in South Africa.*
- *What is food security?*
- *Why do people not have enough food security?*

- *What measures could prevent food insecurity?*

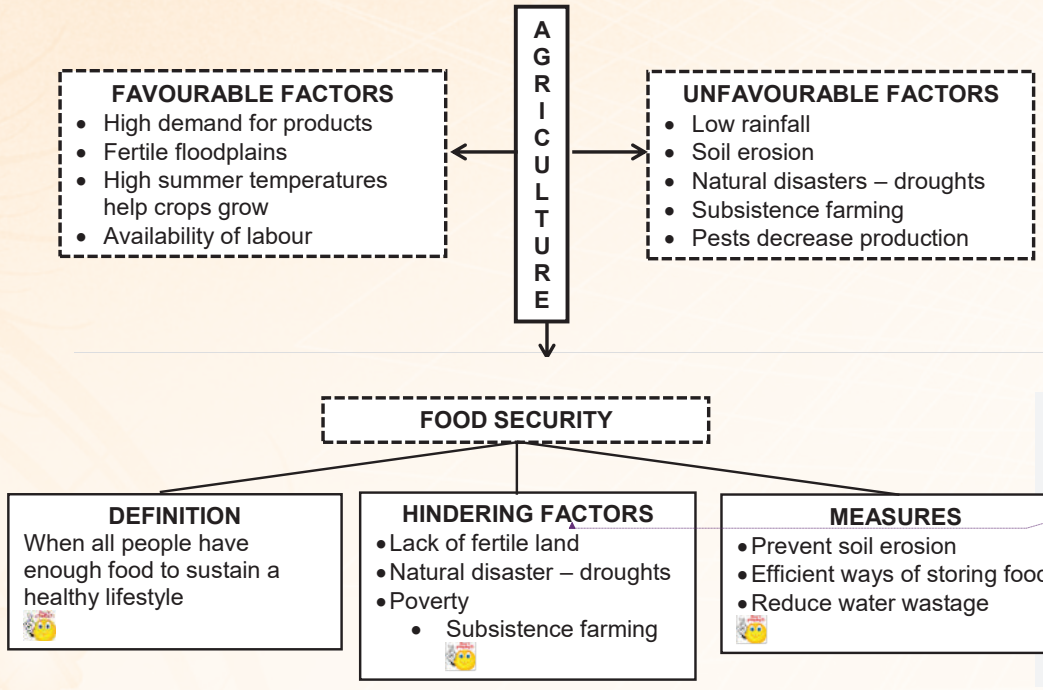


FIGURE 13.1: SUGAR CANE FARMING

Sugar cane is grown along the KwaZulu-Natal coast, due to the ideal climatic conditions in this area. The industry comprises 15 sugar mills, 13 of which are scattered from the southern border of KwaZulu-Natal to its northern border. Most of the sugar cane supplied to these mills (85%) is produced by over 53 000 registered cane growers, the balance being supplied by the mill estates. The production of sugar cane on communally held land has expanded significantly over the past 25 years. Many sugar mills are located alongside a main arterial route.

[Adapted from http:\\www.saf.safsuger.co.za and http://www.tikzn.co.za/open.php?page=Key_Sectors/Agriculture]

13.1.1 In which province is sugar cane mainly grown? (1 x 1)

13.1.2 State TWO climatic conditions that make this area suitable for the cultivation of sugar cane. (2 x 2)

13.1.3 State ONE socio-economic factor that negatively influences sugar cane farming. (1 x 2)

13.1.4 Explain how sugar cane farming has stimulated the economic development of the province in QUESTION 13.5.1. (2 x 2)

13.1.5 Discuss why the sugar mills are ideally located. (2 x 2)

MINING

WHAT YOU NEED TO KNOW

- *Discuss the favourable factors that impact on mining in South Africa.*
- *Discuss the unfavourable factors that impact on mining in South Africa.*

FAVOURABLE FACTORS
- SA has different minerals
- There is plenty of unskilled labour
- Benefits from foreign skilled miners
- Many countries invested in our mines
- Well-developed infrastructure

MINING

UNFAVOURABLE FACTORS
- High underground temperature
- High cost of training of miners
- Mine worker strikes
- Large distances between mines and harbours
- Water shortages
- Mining is a dangerous activity

ACTIVITY 14.1 MINING

FIGURE 14.1: SEASONAL SALES OF MINERALS

MINERALS	JULY TO SEPTEMBER 2014	OCTOBER TO DECEMBER 2014
Gold	R18 402 100	R20 813 500
Iron ore	R16 782 200	R16 443 100
Copper	R1 328 300	R1 267 300
Nickel	R1 216 400	R1 921 500
Coal	R21 794 200	R24 798 700

[Adapted from *Mining Production Sales,* January 2015]

14.1.1 Which mineral shows the lowest seasonal sale value for July to September 2014? (1 x 1)

14.1.2 Which mineral shows the lowest seasonal sale value for October to December 2014? (1 x 1)

14.1.3 More coal was sold in the period October to December 2014 than in July to September 2014. Give TWO possible reasons for this trend. (2 x 2)

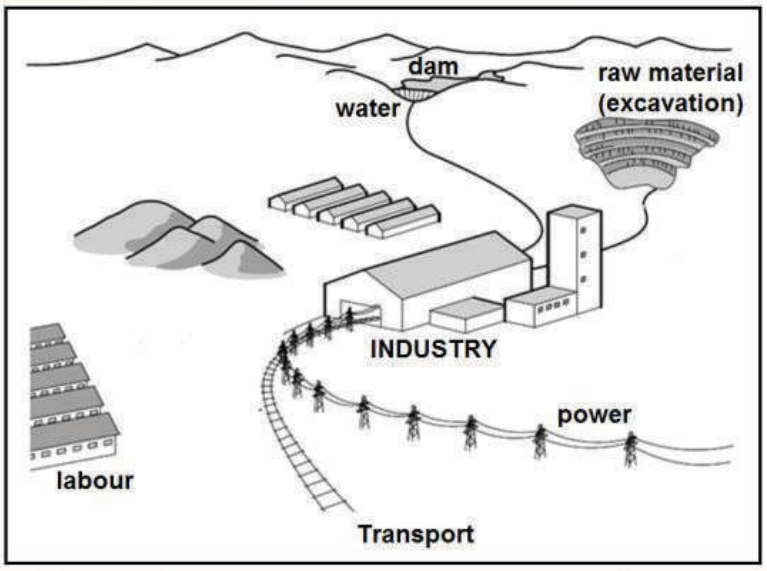
14.1.4 Discuss TWO factors that favour the mining sector in South Africa. (2 x 2)

14.1.5 Discuss the importance of the mining sector to the economic development of South Africa. (2 x 2)

WHAT YOU NEED TO KNOW

Discuss/identify factors industrial development.

Factors affecting the location of an industry



Main industrial regions in South Africa

PWV OR GAUTENG

Factors of location

- Gauteng is the most important industrial region
- Largest industrial region in South Africa
- Large markets
- Plenty of skilled and unskilled labour
- Many different raw materials
- Well-developed transport routes
- Access to money

Kinds of industries

- Chemical
- Iron and steel
- Motor vehicles
- Machinery

Key questions

- *Discuss the unfavourable factors in four industrial regions.*
- *Discuss the favourable factors in four industrial regions.*
- *Name the industries*

DURBAN-PINETOWN

Factors of location

- Durban harbour largest and busiest
- Large labour force
- Many different raw materials
- Well-developed transport routes
- Good water supply

Kinds if industries

- Chemical
- Food processing
- Sugar refining
- Motor manufacturing
- Oil refining

SOUTH-WESTERN CAPE

Factors of location

- Cape Town harbour
- Historical reasons
- Plenty of skilled and unskilled labour
- Availability of farming products

Kinds of industries

- Food canning
- Fish canning and packing
- Wine making
- Textiles, clothing and footwear

PORT ELIZABETH-UITENHAGE

Factors of location

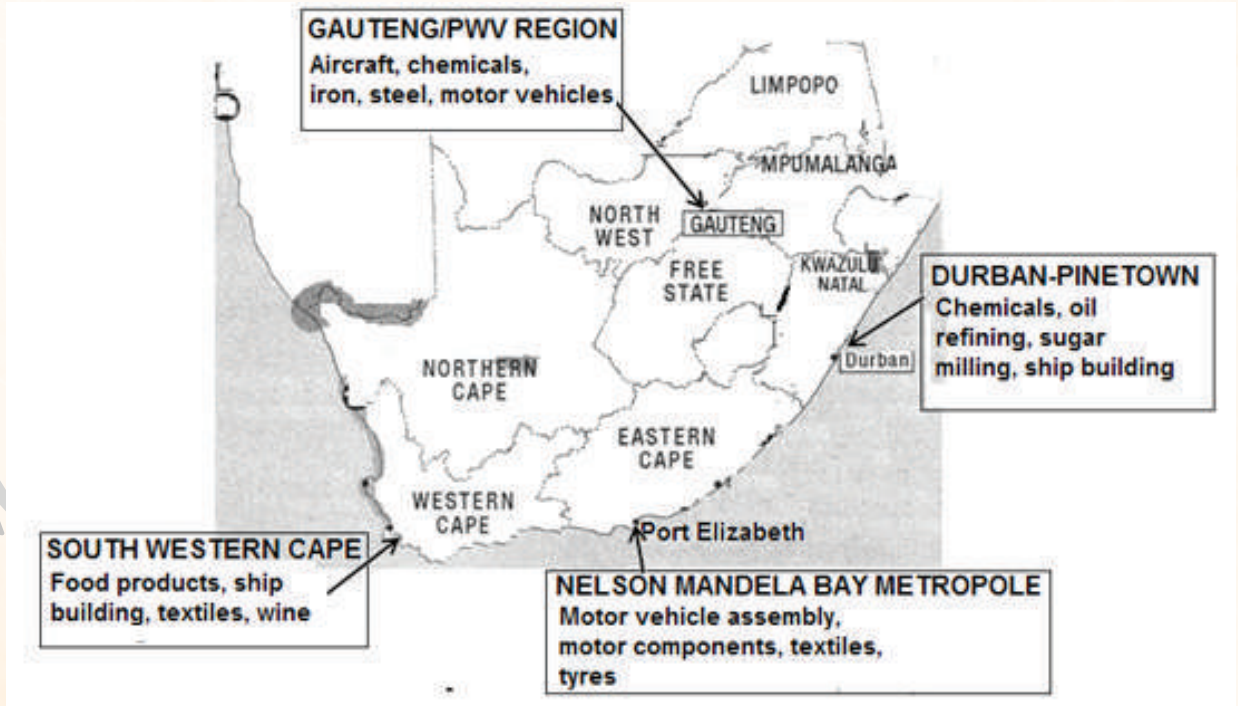
- Access to shipping port
- Historical reasons
- Plenty of skilled and unskilled labour
- Availability of farming products

Kinds of industries

- Motor vehicle factories
- Industries relating to fruit, sheep and cattle
- Leather goods factories

ACTIVITY 15

FIGURE 15.1 CORE INDUSTRIAL REGIONS



[Adapted from http://www.saindustrials.industry.co.za]

15.1.1 State ONE difference between a heavy industry and a light industry. (2 x 1)

15.1.2 (a) Which ONE of the four industrial regions could be considered to be dominated by light industries when compared to the other three industrial regions? (1 x 1)

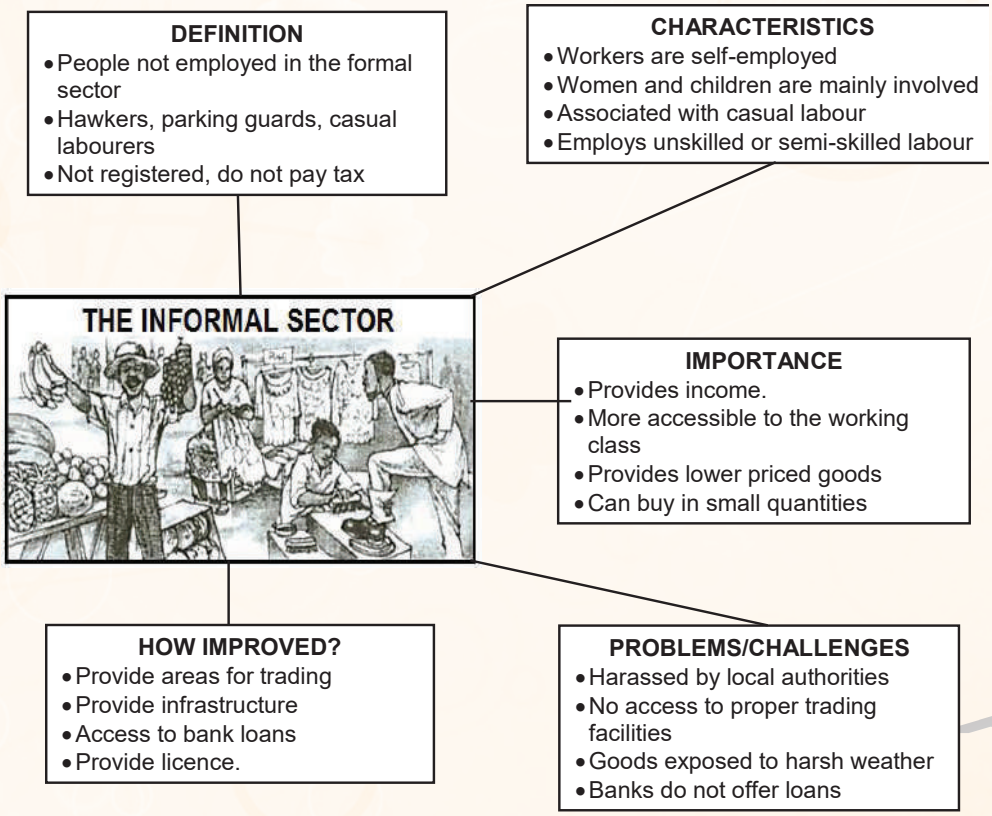
(b) Give a reason for your answer to QUESTION 15.1.2 (a). (1 x 2)

15.1.3 State ONE post-apartheid industrial development strategy that was introduced to alleviate (reduce) over-concentration in the core industrial regions. (1 x 2)

INFORMAL SECTOR

WHAT YOU NEED TO KNOW

- *Define the informal sector.*
- *Describe the characteristics of the informal sector.*
- *Why so many people involved in the informal sector?*
- *Challenges people face in the informal sector.*
- *What can be done to improve the informal sector?*



MARKING GUIDELINE (MEMORANDUM)

TOPIC 1 – MID-LATITUDE CYCLONES

ACTIVITY 1.1

1.1.1 The presence of the cold front close to the land. (1)

The mid-latitude cyclone is close to the land. (1)

[ANY ONE]

1.1.2 X (1)

1.1.3 Heavy rainfall/ thunderstorms (2)

Thunder/lightning (2)

Extremely/very low temperatures (2)

Possible snowfall (2)

Hail (2)

Gale force/strong winds (2)

Cumulonimbus clouds/thick clouds (2)

[ANY TWO]

ACTIVITY 1.2

1.2.1 60°S (1)

1.2.2 Low (1)

1.2.3 Clockwise (1)

1.2.4 Polar front (1)

1.2.5 Warm sector stage/Mature stage (1)

1.2.6 Front section of the cold moving air mass (1)

1.2.7 Stage 4 (1)

1.2.8 Clockwise rotation of air. (1) OR

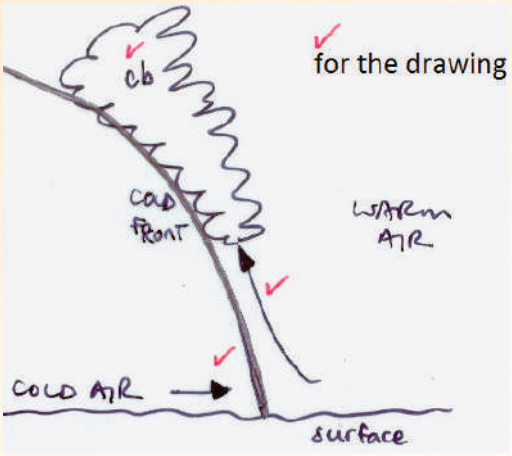
Westerlies lie north of the polar front; easterlies lie south of the polar front. (1)

ACTIVITY 1.3

1.3.1 Extra-tropical cyclone/Frontal depression/Temperate cyclones (1)

1.3.2 The area is a cold sector, (1) which is characterised by cold dense air from the Polar Regions. (1)

1.3.3 Cross-section of the Cold Front:



1.3.4 between 30° and 60° north and south of the equator (2)

1.3.5 The cold and warm fronts are fully developed. (2)

The cold and the warm sectors are also fully developed. (2)

The cold air behind the cold front is moving under the warm air. (2)

The warm air behind the warm front rising above the cooler air ahead of it. (2)

The cold front has not caught up to the warm front. (2)

An occlusion has not begun. (2)

[ANY ONE]

TOPIC 2 – TROPICAL CYCLONES

ACTIVITY 2.1

2.1 Tropical Cyclone (1)

2.2 Low Pressure System (1)

2.3 Late summer / early Autumn (1)

[ACCEPT EITHER]

2.4 Tropical Easterlies (1) OR South East Trade winds (1)

2.5 Hadley Cell (1)

2.6 Reunion (1)

2.7 This is the 5th cyclone occur in that season. (1)

2.8 Cumulonimbus (1)

ACTIVITY 2.2

2.2.1 (a) The Far East/Asia/South China Sea. (1)

(b) Wind speeds of 160 mph/260 km/h were recorded. (1)

2.2.2 (a) The Tropical Easterlies prevail in these latitudes. (1)

(b) 20 (2)

2.2.3 Very high sea surface temperatures of above 27 °C (2)

Very strong upper air divergence (2)

Very high moisture content (2)

Very high evaporation rates (2)

Very rapid upliftment of warm, moist air (2)

Large scale condensation (2)

Very high wind speeds (2)

[ANY ONE]

ACTIVITY 2.3

2.3.1 from east to west (1)

westwards (1)

Westerly (1)

[ANY ONE]

2.3.2 No tropical cyclone can form there; they require a Coriolis force to develop. (2)

2.3.3 11 days (2)

2.3.4 2 250 km (2)

[ACCEPT BETWEEN 2 050 km AND 2 450 km]

2.3.5 Differences in temperature (2)

Moisture content (2)

Friction over land (2)

[ANY TWO]

TOPIC 3 – CYCLONES AND ANTI-CYCLONES

ACTIVITY 3.1

3.1.1 A (South Atlantic High) (1)

3.1.2 B (Kalahari High) (1)

3.1.3 B (Kalahari High) (1)

3.1.4 A (South Atlantic High) (1)

3.1.5 B (Kalahari High) (1)

3.1.6 C (South Indian High) (1)

3.1.7 A (South Atlantic High) (1)

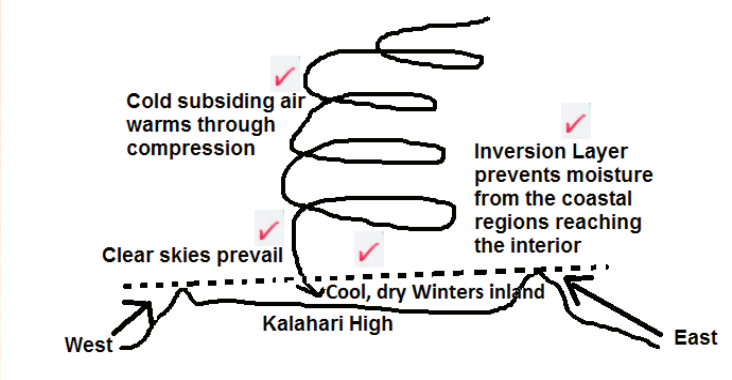
ACTIVITY 3.2

3.2.1 A: South Atlantic Anti-cyclone (1) or St Helena High (1)

B: Kalahari Anti-cyclone (1) or Continental High (1)

C: South Indian Anti-cyclone (1) or Mauritius High (1)

3.2.2



(4 x 1)

ACTIVITY 3.3

3.3.1 Summer (1)

3.3.2 South Atlantic High/South Atlantic Anti-cyclone/St. Helena High (1)

South Indian High/South Indian Anticyclone/Mauritius High (1)

3.3.3 Gale force winds (1)

Forms of precipitation: hail (1)

Heavy rainfall (1)

Lightning (1)

[ANY TWO]

3.3.4 Displaced along with the north-easterly movement of the line thunderstorm. (2)

ACTIVITY 3.4

3.4.1 winter (1)

3.4.2 Kalahari (1)

3.4.3 coastal (1)

3.4.4 eastwards (1)

3.4.5 offshore (1)

3.4.6 clear (1)

3.4.7 onshore (1)

3.4.8 increases (1)

ACTIVITY 3.5

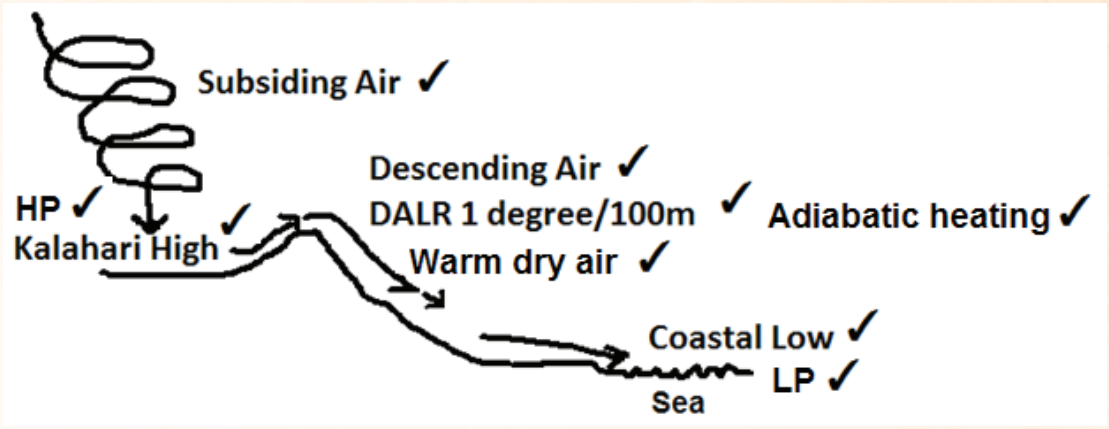
3.5.1 The presence of the high pressure cell (Kalahari/Continental High) over the interior of the land. (1)

The presence of the coastal low pressure along the coast. (1)

The approaching cold front/mid-latitude cyclone. (1)

[ANY TWO]

3.5.2



4 marks for ANY FOUR labels (as seen above)

3.5.3 The Kalahari High is dominant over the land in winter. (2)

A strong pressure gradient exists between inland and coastal regions. (2)

Cold fronts dominate in winter. (2)

The pressure belts move northwards. (2)

[ANY ONE]

TOPIC 4 – VALLEY CLIMATES

ACTIVITY 4.1

4.1.1 Winter (1)

4.1.2 X (1)

4.1.3 Y (1)

4.1.4 X (1)

4.1.5 Y (1)

4.1.6 B (1)

4.1.7 Less (1)

4.1.8 Y (1)

ACTIVITY 4.2

4.2.1 Katabatic/downslope/gravity (1)

4.2.2 Mountain slopes cool at night. (2)

Winds in contact with the slopes cool down. (2)

Lower temperatures increase the density of the air and it is forced to sink to the valley floor. (2)

[ANY TWO]

4.2.3 As cold air sinks into the valley during the night, it displaces the warm air upwards. (2)

ACTIVITY 5.1

5.1.1 day (1)

5.1.2 lower (1)

5.1.3 increases (1)

5.1.4 multiple reflections of heat (1)

5.1.5 increases (1)

5.1.6 decreases (1)

5.1.7 less (1)

5.1.8 more (1)

ACTIVITY 5.2

5.2.1 prevailing winds (1)

5.2.2 thermal plume (1)

thermal anvil (1)

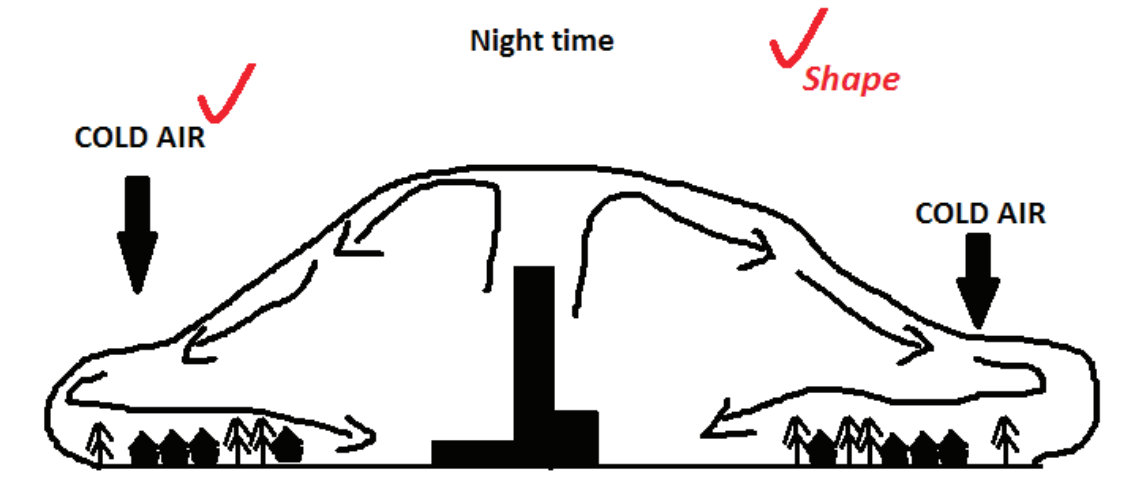
asymmetrical shape (1)

updrafts (1)

great vertical extent (1)

[ANY TWO]

5.2.3



[1 mark for the dome shape; 1 mark for the indication of COLD AIR]

TOPIC 6 – DRAINAGE SYSTEMS

ACTIVITY 6.1

6.1.1 An area drained by a river and its tributaries. (1)

[CONCEPT]

6.1.2 A (1)

6.1.3 more direct run-off (2)

heavy rainfall (2)

steep slopes (2)

sparse vegetation (2)

impermeable underlying rock/non-porous rock (2)

saturated soil (2)

[ANY ONE]

6.1.4 3rd order (2)

ACTIVITY 6.2

6.2.1 rainfall/precipitation (1)

melting snow (1)

groundwater (1)

springs (1)

river/surface run-off (1)

[Any ONE]

6.2.2 catchment/source (1)

6.2.3 Third order (1)

6.2.4 Delta/fluvial island/alluvial island (1)

6.2.5 deposition (1)

6.2.6 infiltration/percolation/seepage (1)

6.2.7 watershed/drainage divide (1)

6.2.8 Permanent base level/ ultimate base level (1)

ACTIVITY 6.3

6.3.1 Watershed (1) OR water-divide (1)

6.3.2 Interfluve (1)

6.3.3 source (1)

6.3.4 confluence (1)

6.3.5 tributary/stream (1)

6.3.6 lower (1)

6.3.7 mouth (1)

TOPIC 7 – FLUVIAL PROCESSES

ACTIVITY 7.1

7.1.1 lower course/old stage/plain stage (1)

7.1.2 undercut slope/outer slope/outer bank/cut bank/cut slope/river cliff (1)

7.1.3 There is slow movement of water. (1)

Carrying capacity decreases. (1)

The shallowness of the bank. (1)

[ANY ONE]

7.1.4 Concave (1)

7.1.5 width (1)

depth (references to deep) (1)

bank shapes (1)

symmetry (1)

[ANY ONE]

7.1.6 Erosion (1)

7.1.7 An oxbow lake has water (1)/a meander scar is dry (1)

[ANY ONE]

7.1.8 The (meander) neck (1)

ACTIVITY 7.2

7.2.1 Longitudinal/long profile (1)

7.2.2 Ungraded (1)

7.2.3 Upper/Youthful (1)

7.2.4 Downstream (1)

7.2.5 Sea (1)

7.2.6 Knick point/waterfall (1)

7.2.7 Upstream (1)

ACTIVITY 7.3

7.3.1 Superimposed drainage

The river now flows on older uncovered rocks that are uncovered by erosion. (1)

[CONCEPT]

7.3.2 Antecedent drainage

The river flows on a young landscape that is altered by tectonic forces. (1)

[CONCEPT]

7.3.3 The river erodes downwards into the original surface to reach the underlying rock layers. (2)

The rate of down-cutting of the river is faster than the rate at which the current rock layer is exposed. (2)

[Any ONE]

7.3.4 Both rivers maintain their original course. (2)

Folding (2)

ACTIVITY 7.4

7.4.1 (a) D (1)

(b) B (1)

(c) A (1)

7.4.2 The valley is too large for the stream flowing in it (1)

Stream volume decreases (1)

Energy is reduced (1)

Deposition increases (1)

[ANY ONE]

7.4.3 The Pungwe River has a higher volume of water. (2)

The Pungwe River flows down a steeper slope. (2)

The Pungwe River will start to erode downwards. (2)

[ANY TWO]

TOPIC 8 – RURAL SETTLEMENTS

ACTIVITY 8.1

8.1.1 Situated on a high-lying area/Higher up the mountain slope (1)

Far from the water source/river. (1)

[ANY ONE]

8.1.2 Live close to one another/Social Interaction (1)

Safety and security (1)

Easy access to help in an emergency (1)

Sharing of ideas/Community involvement (1)

Sharing of equipment (1)

Sharing of workload (1)

[ANY TWO]

8.1.3 (a) Linear settlement (1)

(b) Individual farmers need access to the road (2)

Limited by the availability of flat land (2)

[ANY ONE]

(c) At C, farming is practised on steep slopes (2)

Heavy rain increases surface run-off (2)

Loosely bound soil is easily removed by surface run-off (2)

No trees to trap the run-off (2)

Removal of natural vegetation that leads to soil erosion (2)

Limited contour ploughing due to the long narrow shape of the farmland. (2)

Monoculture will lead to increased soil erosion (2)

Limited space will lead to over-cultivation/over-cropping (2)

[ANY TWO]

ACTIVITY 8.2

8.2.1 B (1)

8.2.2 A (1)

8.2.3 B (1)

8.2.4 A (1)

8.2.5 A (1)

8.2.6 B (1)

8.2.7 A (1)

8.2.8 B (1)

TOPIC 9 – RURAL SETTLEMENT ISSUES

ACTIVITY 9.1

9.1.1 A decrease in the number of people living in rural areas. (1)

[CONCEPT]

9.1.2 Young adults/between 18 and 35 years (range) (1)

9.1.3 Abandoned buildings (2)

Empty or closed shops (2)

Aged population (2)

Reduced/declining population (2)

Unemployed people (2)

Physical blight (2)

Crime (2)

[ANY ONE]

9.1.4 No growth in economic activities due to a lack of skills. (2)

No investment opportunities/withdrawal of investments. (2)

No infrastructure development to attract economic activities. (2)

Lack of services hampers the growth of a rural town. (2)

Young and economically active people leave. (2)

Reduced buying power (2)

[ANY TWO - ACCEPT ANY OTHER REASONABLE ANSWERS] (2 x 2)

TOPIC 10 – URBAN SETTLEMENTS

ACTIVITY 10.1

10.1.1 G (1)

10.1.2 F (1)

10.1.3 E (1)

10.1.4 B (1)

10.1.5 D (1)

10.1.6 A (1)

10.1.7 C (1)

ACTIVITY 10.2

10.2.1 D (1)

10.2.2 F (1)

10.2.3 E (1)

10.2.4 B (1)

10.2.5 G (1)

10.2.6 A (1)

10.2.7 C (1)

TOPIC 11 – URBAN SETTLEMENT ISSUES

ACTIVITY 11.1

11.1.1 Over-concentration (too many) of vehicles on the road. (1)

[CONCEPT]

11.1.2 air pollution (1)

noise pollution (1)

global warming (1)

acid rain (1)

reduced visibility (1)

destruction of roads /damage to roads, e.g. potholes (1)

[ANY ONE]

11.1.3 There was an increase in the number of hours of delay per person. (2)

An increase, then a decrease, then an increase, then constant (2)

[Accept specific trends on the graph for each year.]

1982 – 1984: increase

1984 – 1988: decrease

1988 - 1990: increase

1990 – 1992: decrease

1992 – 2008: increase

2008+: constant

[ANY ONE]

11.1.4 In 2010, there were more private vehicles compared to in 1982. (2)

Rural-urban migration has escalated. (2)

Urban growth. (2)

An increase in the commuter population. (2)

Unreliable public transport. (2)

[ANY ONE]

11.1.5 They arrive late at work (2)

Related impacts, e.g. lose jobs/salary/decrease in productivity/deductions (2)

Time wastage due to being delayed in traffic (2)

High fuel consumption (2)

Anger and frustration/road rage/accidents (2)

Impact on health/stress/exposure to pollution (2)

[ANY TWO - ACCEPT OTHER REASONABLE ANSWERS]

11.1.6 Improve public transport (2)

Park and ride systems (2)

Lift clubs (2)

Impose high parking fees on private cars in the city (2)

Establish cycle lanes (2)

One-way streets to speed up traffic flow (2)

Decentralise offices and shops (commercial decentralisation) (2)

Working flexitime (2)

Synchronised robots (2)

Traffic points man/officers at more intersections (2)

Close certain lanes during peak hours (2)

Build outer ring roads (2)

Traffic circles (2)

Traffic monitoring by radio stations/helicopters (2)

increase the number of lanes (2)

Adjust traffic flow according to traffic density and times (2)

Tolling (2)

[ANY TWO - ACCEPT ANY OTHER REASONABLE ANSWERS]

TOPIC 12 – ECONOMIC SECTORS

ACTIVITY 12.1

12.1.1 A/primary (1)

12.1.2 D/Transport (1)

12.1.3 C/export (1)

12.1.4 C/bread (1)

12.1.5 A/PWV (1)

12.1.6 B/motor vehicle (1)

12.1.7 C/bridge (1)

12.1.8 A/Spatial Development Initiatives (1)

ACTIVITY 12.2

12.2.1 F (1)

12.2.2 H (1)

12.2.3 C (1)

12.2.4 B (1)

12.2.5 A (1)

12.2.6 G (1)

12.2.7 E (1)

12.2.8 D (1)

TOPIC 13 – AGRICULTURE

ACTIVITY 13.1

13.1.1 KwaZulu-Natal (1)

13.1.2 Good rainfall throughout the year to prolong the growing season (2)

Warm temperatures throughout the year are needed for the sugar cane to have a high sugar content. (2)

Frost free areas that do not restrict the growth of sugar cane. (2)

[ANY TWO]

13.1.3 High HIV prevalence impacts on productivity; labourers die at a young age. (2)

Fewer labourers due to rural-urban migration. (2)

Farming on a small scale. (2)

[ANY ONE]

13.1.4 Growth of the secondary industry, (2) e.g. jams, beverages (any product with sugar in it) (2)

Created employment (2)

Development and improvement of infrastructure (2)

Higher income (2)

Better standard of living (2)

Increased Gross Provincial Product (2)

[ANY TWO]

13.1.5 Close to bulky raw materials (2)

Close to water (2)

Access to the main road (2)

Transport links to transport goods to inland markets (2)

Close to the harbour for export (2)

[ANY TWO]

TOPIC 14 - MINING

ACTIVITY 14.1

14.1.1 Nickel (1)

14.1.2 Copper (1)

14.1.3 Less coal is sold in July to September, due to it being summer in the Northern Hemisphere, where our biggest customers are. (2)

Our biggest customers are in the Northern Hemisphere. (2)

Sell more to Northern Hemisphere customers in winter, as demand is higher. (2)

Need to generate more electricity in winter due to cold temperatures. (2)

[ANY TWO - ACCEPT OTHER REASONABLE ANSWERS]

14.1.4 Wide variety of minerals (2)

Large mineral reserves (2)

Local and foreign demand (2)

Good infrastructure/roads/railway lines make mining areas accessible (2)

Raw materials for industries (2)

A skilled and unskilled labour force is available (2)

Production costs are lower where minerals are close to the surface (2)

Lower rock temperatures (geothermal gradient) allow for deeper mining (2)

Capital for mining is available (2)

Many countries have invested in our mines (2)

Infrastructure has been readily available, e.g. railway lines, water, electricity (2)

[ANY TWO - ACCEPT OTHER REASONABLE ANSWERS]

14.1.5 Contribution to GDP (2)

Provision of employment opportunities (2)

Availability of raw materials for industry (2)

Revenue from sales (2)

Development of infrastructure (2)

Up-skilling people (2)

International trade (2)

Industrial development was triggered/started by mining (2)

Earn foreign exchange (2)

Contribution to rapid urbanisation (2)

Contribution to the socio-economic development of the country (2)

[ANY TWO - ACCEPT OTHER REASONABLE ANSWERS]

TOPIC 15 – SECONDARY SECTOR

ACTIVITY 15.1

15.1.1 (Refer to table)

Factor	Light Industry	Heavy Industry
Labour	More skilled (1)	Less skilled (1)
Type of machinery	Small (1)	Large (1)
Quantity of raw materials	Small quantities (1)	Large quantities (1)
Finished product bulk	Small (1)	Large (1)
Type of transport required	Mainly road transport (1)	Mainly rail and sea transport (1)
Proximity to the market	Must be close to markets (1)	Can be further away from markets (1)
Location in the city	Close to the city centre (1)	on the outskirts/ periphery (1)
Pollution	Limited (1)	Large (1)
Contribution to the economy	Smaller contribution (1)	Larger contribution (1)

[ANY ONE FACTOR]

15.1.2 (a) South-Western Cape (1)

(b) The majority of industries are food processing industries (2)

Smaller factories/less machinery required (2)

Not raw mineral based (2)

[ANY ONE]

15.1.3 Industrial Development Zones (IDZs) (2)

Spatial Development Initiatives (SDIs) (2)

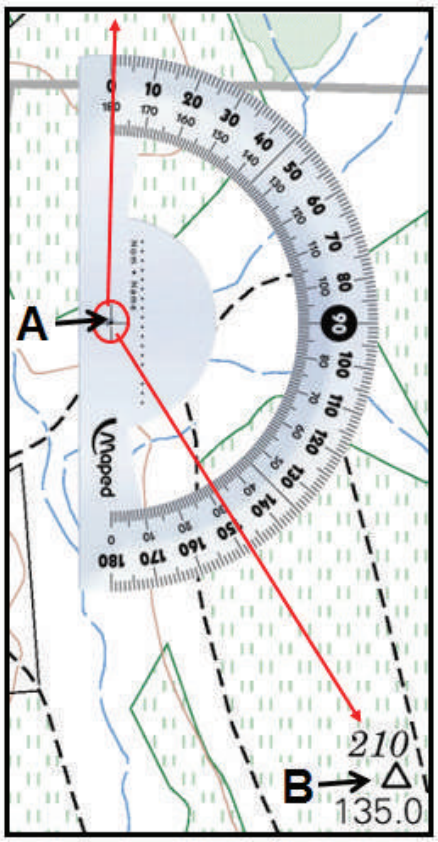
Special Economic Zones (SEZs) (2)

National Development Plan (NDP) (2)

Accelerated and Shared Growth Initiated in South Africa (AsgiSA) (2)

[ANY ONE]

PAPER 2 – MAPSKILLS AND TECHNIQUES



Map skills

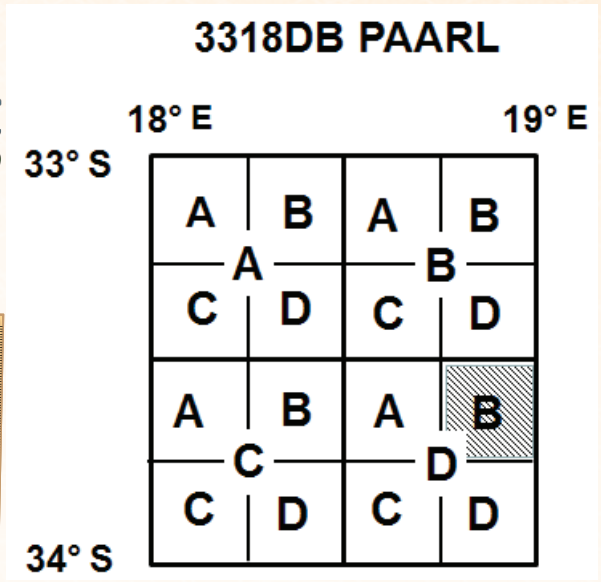
Bearing

Method for measuring the true bearing from A to B

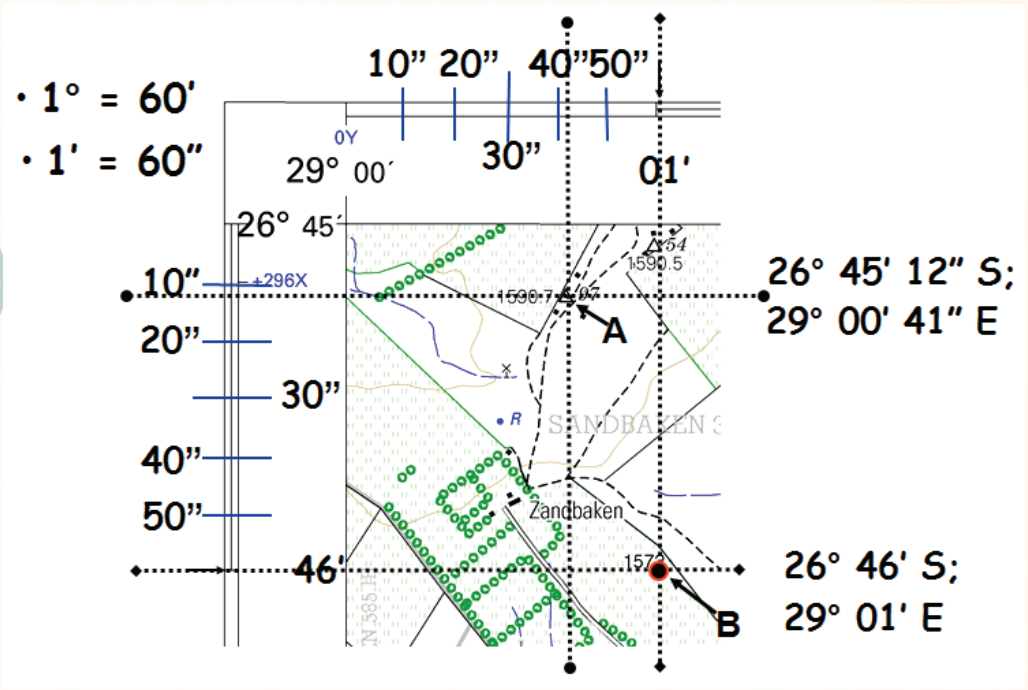
- **STEP 1** – Draw a straight line joining A and B.
- **STEP 2** - Draw a North line through A.
- **STEP 3** - Place the 0° of your protractor at the top of the North line.
- **STEP 4** – Moving in a clockwise direction from 0°, read off where the line joining A and B touches the protractor.

The answer regarding the bearing on the topographic map in the diagram is 148°.

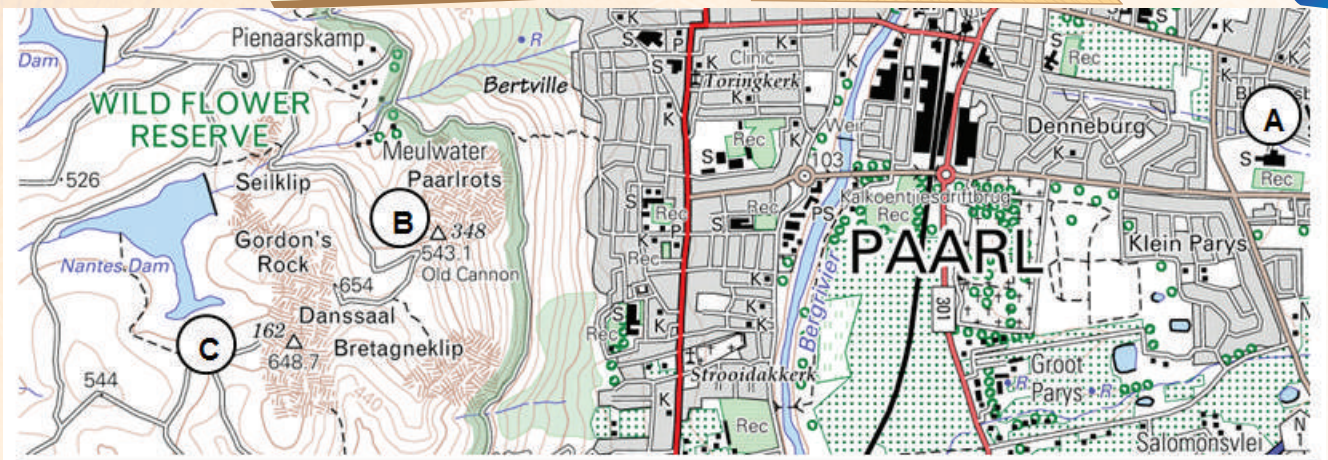
Map reference

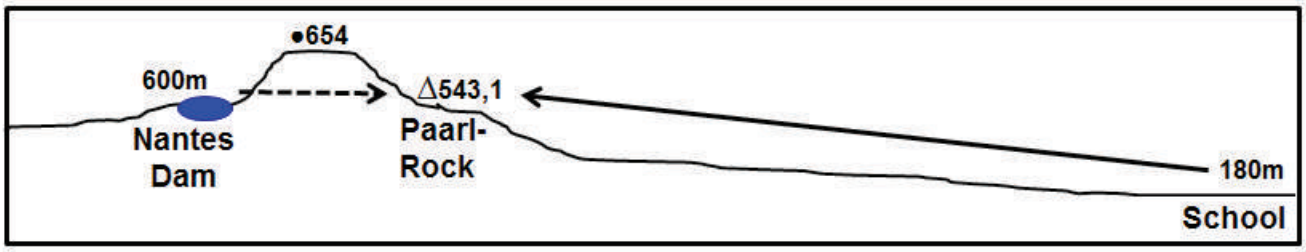


Location in degrees, minutes and seconds (grid reference)



Inter-visibility





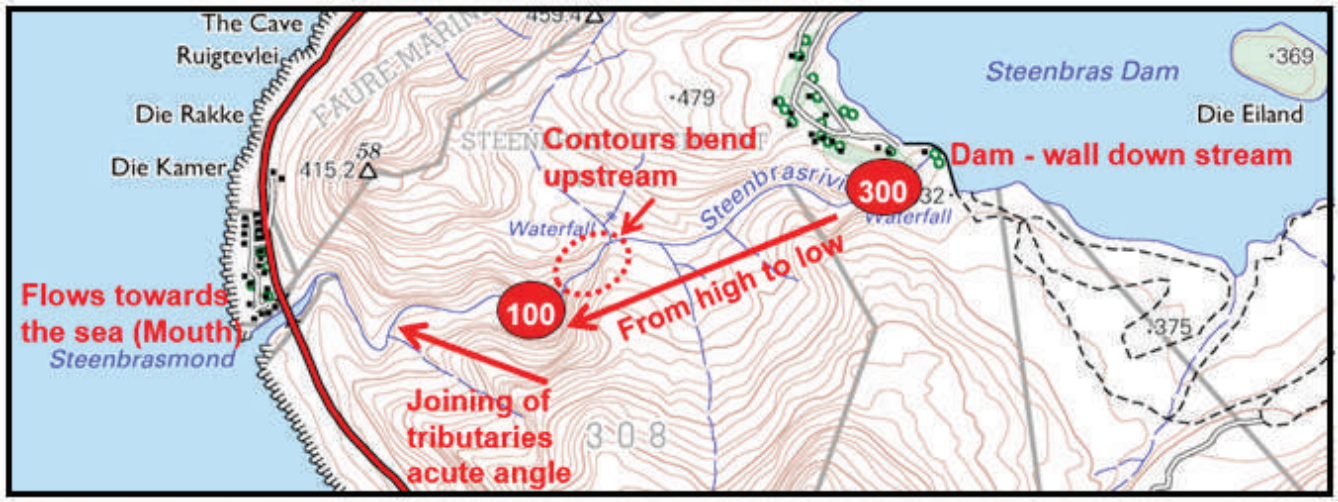
Paarl Rock is not visible from the dam

Paarl Rock is visible from the school

Direction of river flow

In what direction does the Steenbras River flow? Give 5 reasons for your answer.

Answer: West or Southwest. The reasons are indicated on the map below.

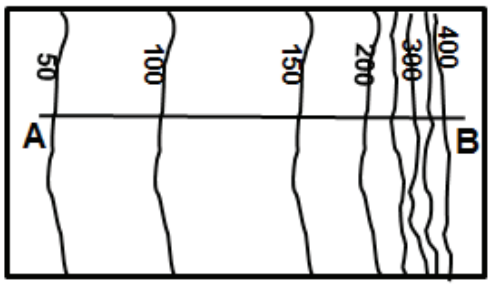


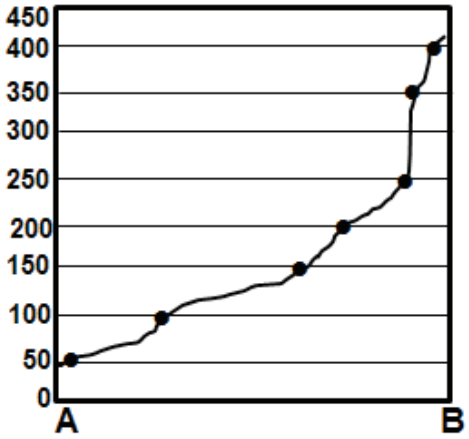
You must give your answers in the context of the map. E.g. the ground in the East is higher than in the West, therefore the Steenbras River flows in a Westerly direction.

Contours and slopes

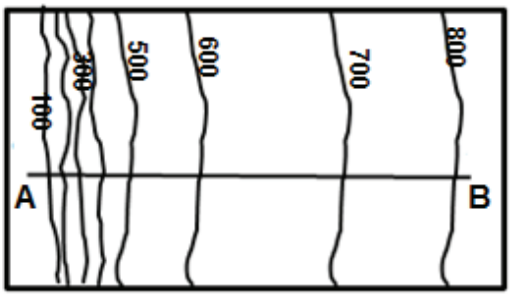
- Contour lines join places that are at the same height above sea level.
- Contours far apart show a gentle slope.
- Contours close together show a steep slope.

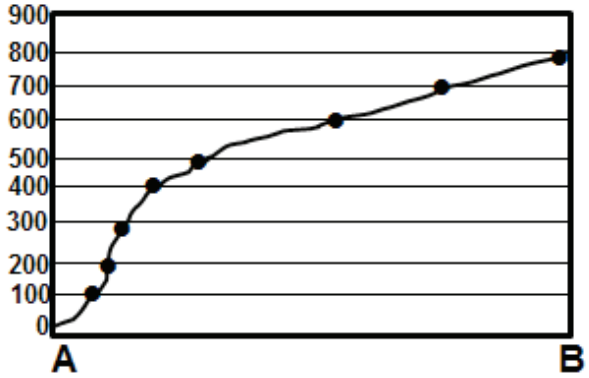
Concave slope



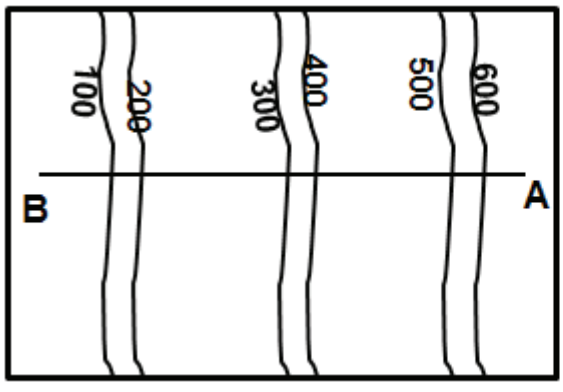


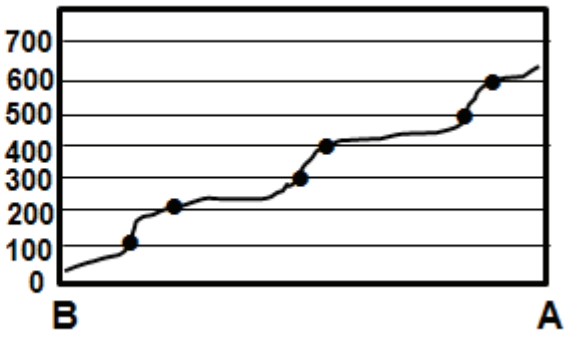
Convex slope





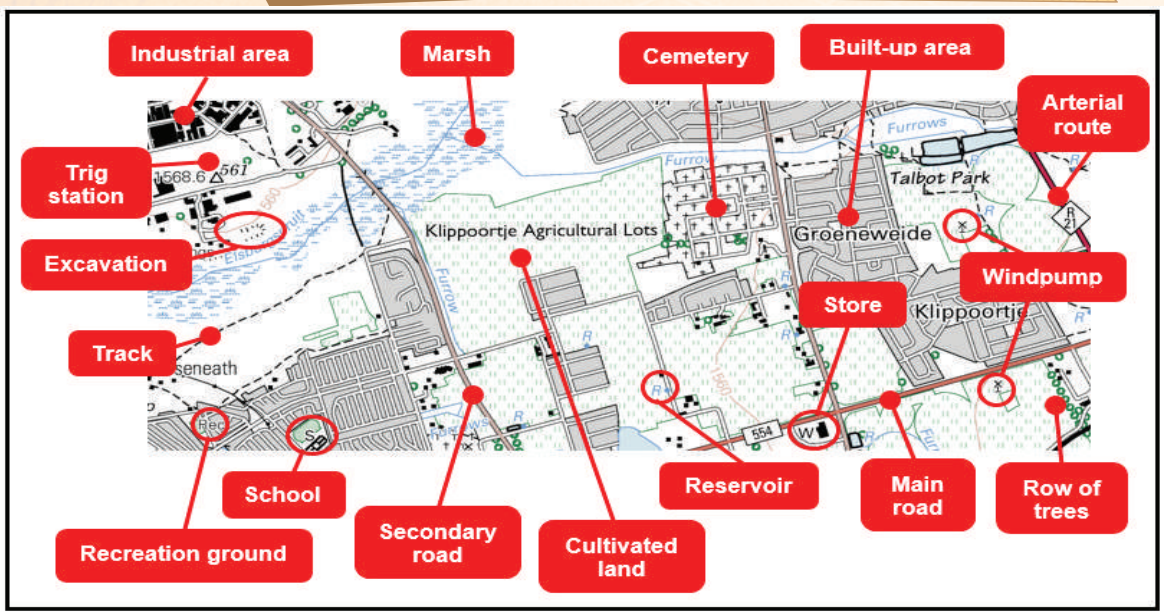
Terraced slope





Know your key

The topographic map below shows some of the key features you need to know. You should know all of them to be in a position to interpret the map successfully.



Calculations

Important things to remember when doing calculations

- **MEASURE** distances accurately.
- Know all **FORMULAS**.
- Use the correct **SCALE** (1:50 000 & 1:10 000).
- Do not write down only the answer. Write down **ALL STEPS followed**. (Marks for steps)
- Always use a **CALCULATOR**.
- Do not rush. **WORK ACCURATELY**.
- Always use the **CORRECT UNIT** in your answer: distance: km; area: km².
- **MAKE SURE** that you have worked correctly.
- Remember: **PRACTICE** makes perfect.

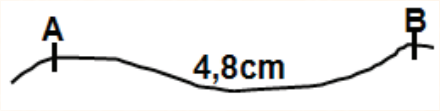
Conversion of scale. The table below shows you how to convert a given scale to km or m.

Scale	If the answer must be in kilometres (km)	If the answer must be in metres (m)
Topographic map 1:50 000 →	Multiply by 0,5 on a topographic map	Multiply by 500 on a topographic map
Orthophoto map 1:10 000 →	Multiply by 0,1 on an orthophoto	Multiply by 100 on an orthophoto

Distance

Formula: distance = $\frac{\text{distance on map x map scale}}{100\ 000}$

Calculate the distance from A to B. Scale = 1: 50 000



STEP 1 - Measure distance Distance = 4,8cm

Formula = $\frac{\text{Map distance x Scale}}{100\ 000}$

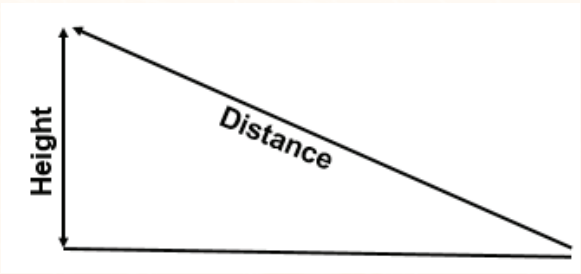
STEP 2 - Place in formula (measured distance and scale) = $\frac{\text{4,8cm x 50 000}}{100\ 000}$

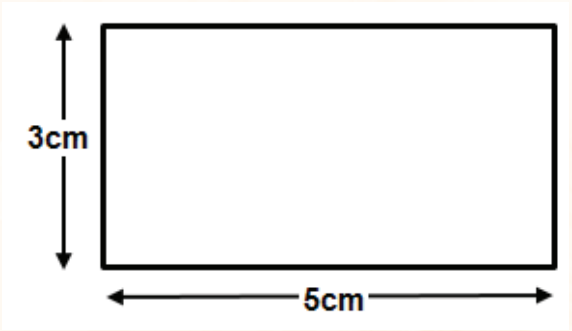
STEP 3 – Answer in km = 2,4 km

Area

Formula: l x b

Calculate the area of the block below.





Remember to use the formula for distance to calculate length and breadth.

NB: convert before you multiply.

	Length	Breadth
STEP 1 – Calculate length	$\frac{\text{5cm x 50 000}}{100\ 000}$	$\frac{\text{3cm x 50 000}}{100\ 000}$
STEP 2 – Calculate breadth	= 2,5km	= 1,5km
STEP 3 – Place in formula (l x b)	2,5 x 1,5	
STEP 4 – Answer in km²	3,75 km²	

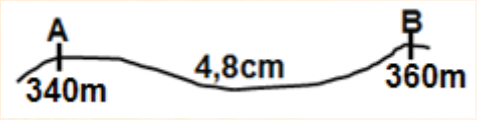
Gradient

Gradient is the steepness of the slope. It is the ratio between the vertical height and the equivalent distance.

Formula: Gradient = VI (Difference in height)

HE (Distance between the two points)

Calculate the gradient of the national road between A and B (scale = 1 : 50 000).



STEP 1 – Calculate VI 460m – 340m = 120m

STEP 2 – Calculate distance 4,8cm x 50 000

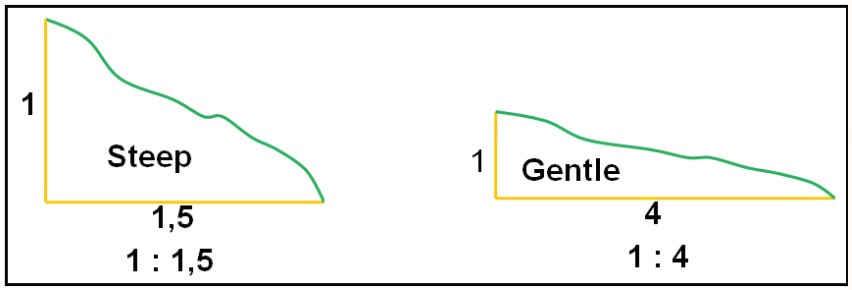
100 000 = 2,4 km

STEP 3 – Convert to m = 2 400m

STEP 3 – Place in formula = 120 m 120 : 2 400

and SIMPLIFY 2 400m 120` : 120

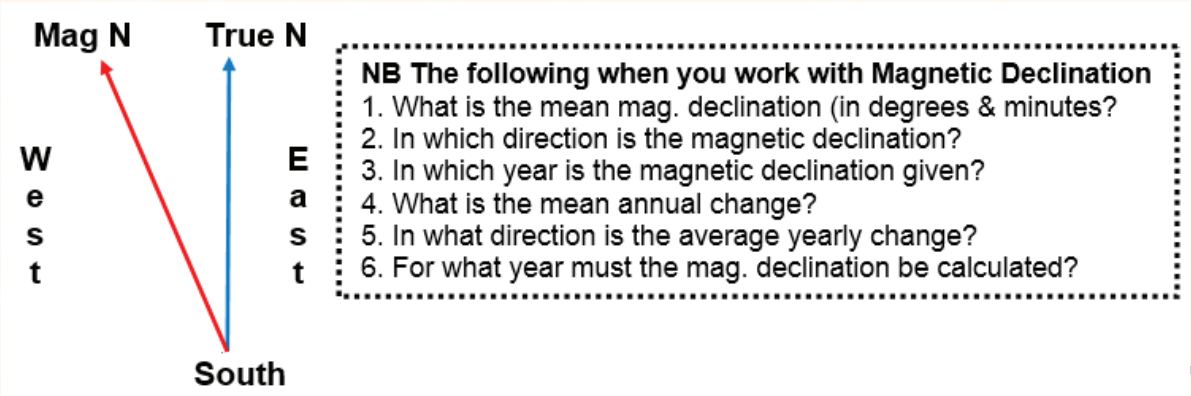
1: 20 (Gradient is a **RATIO**. No units required)



Magnetic declination and Magnetic bearing

Magnetic declination is the angle(difference) between true North and magnetic North (on a compass). In South Africa:

- if the mean annual change is towards the **WEST**, it is **ADDED**.
- if the mean annual change is towards the **EAST** it, is **SUBTRACTED**.



Mean magnetic declination 23° 53' West of true north (July 2002).

Mean annual change 6' Westwards.

Calculate magnetic declination for 2009.

STEP 1 2009 – 2002

Calculate difference in years = 7 years

STEP 2 6' x 7 years

Calculate total change = 42' West

STEP 3 23° 53' +

Add or subtract magnetic 42'

declination 23° 95'

STEP 4

Remember: minutes cannot = 24° 35' West

be more than 60

MAGNETIC BEARING

Magnetic bearing is calculated by simply adding the bearing to the magnetic declination.

E.g. If the bearing is 46°, the magnetic bearing will be 24° 35' + 46° = 70° 35'.

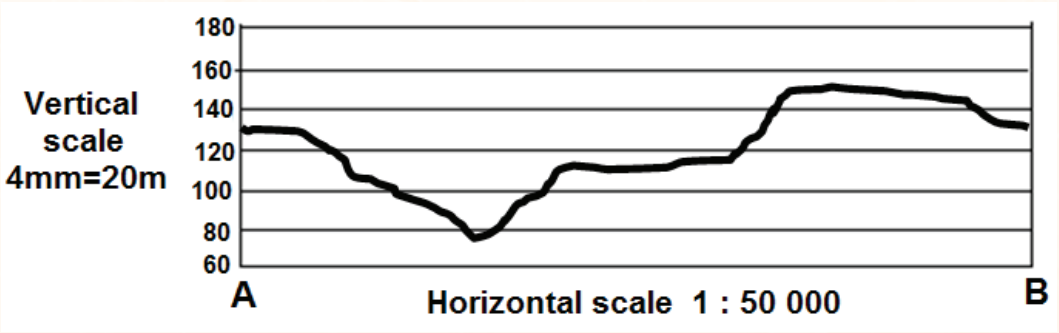
See the method for measuring bearing under the heading Map skills.

Vertical exaggeration

Formula: Vertical exaggeration = Vertical scale

Horizontal scale

Calculate the vertical exaggeration of the following



4mm = 20m

4mm = 20 000mm (same units)

4: 20 000

1: **5 000**

V E = VERTICAL SCALE

HORIZONTAL SCALE

= 1 ÷ 1

5 000 50 000

= 1 X 50 000

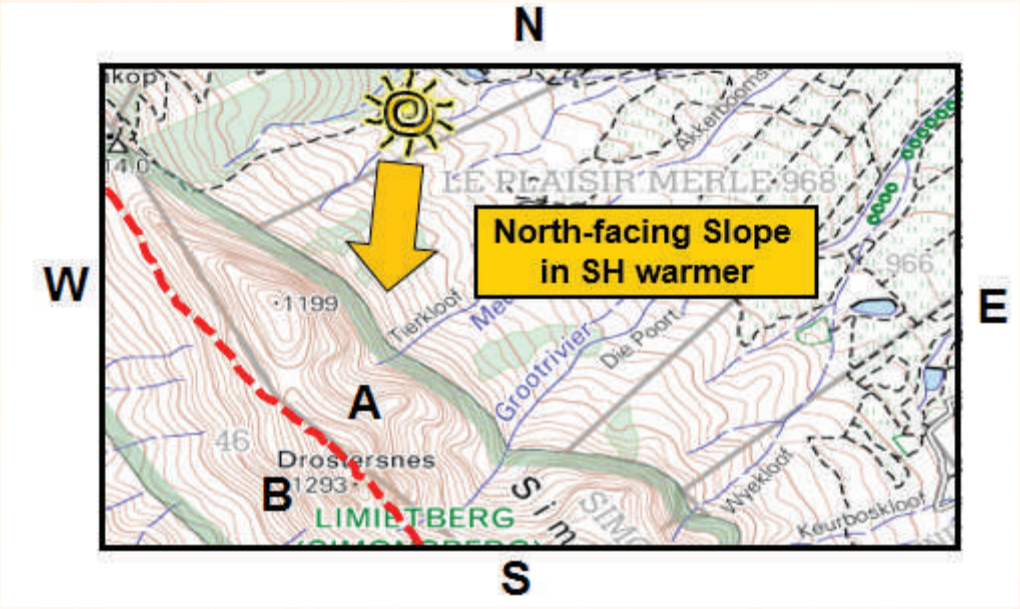
5 000 1

Application of theory to a topographic map and ortophoto map

In this section we look at how theory can be applied to a topographic map or an ortophoto map. A few examples of questions from every content section will be discussed. All answers will appear on the maps, to show you how theory and map work should be integrated.

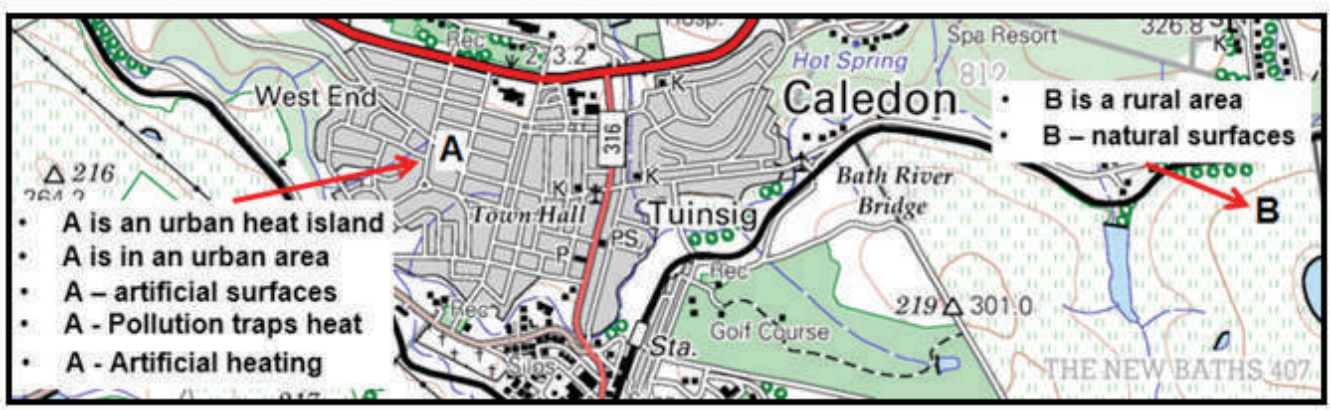
Climate

- Which slope will be warmer – A or B? Give a reason for your answer.



- Which of the following average summer temperatures would be found at A and at B:22° C and 19° C? Give reasons for your answer.

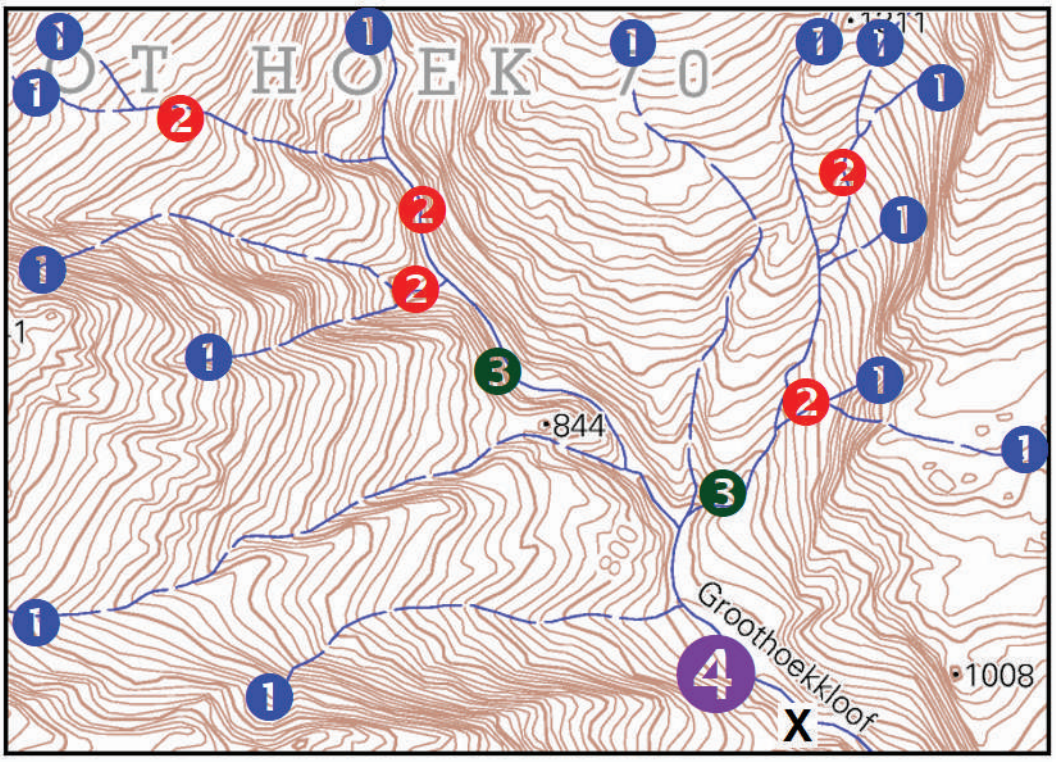
  Answer A - 22° C and B - 19° C. The reasons are indicated on the map.



Geomorphology

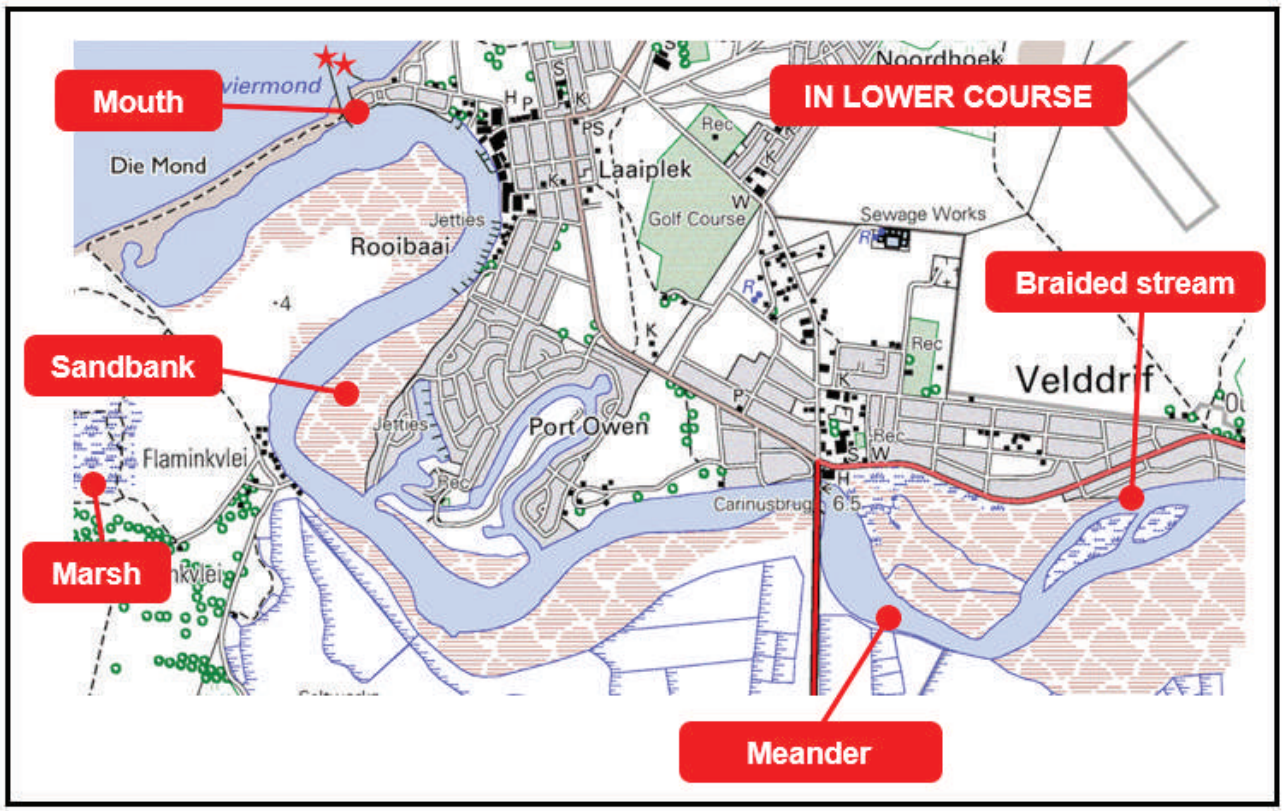
- Determine the stream order at X on the topographic map below.
- Identify the stream pattern on the topographic map.

  Answer: Dendritic



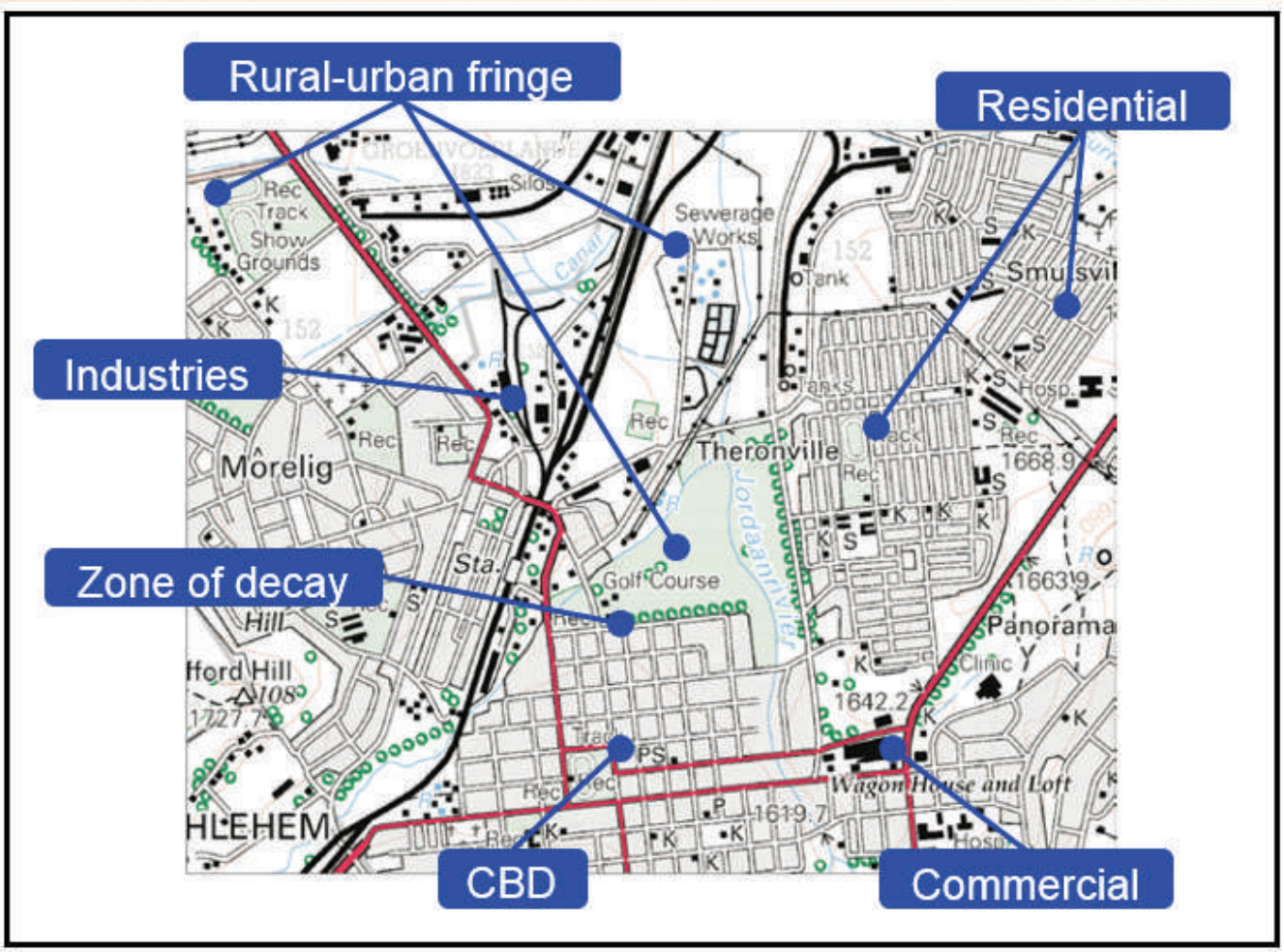
1+1=2
2+2=3
3+1=3
3+2=3
3+3=4
4+1=4
4+2=4
4+3=4
4+4=5
etc

In which stage/course is the river on the topographic map? Give reasons for your answer.

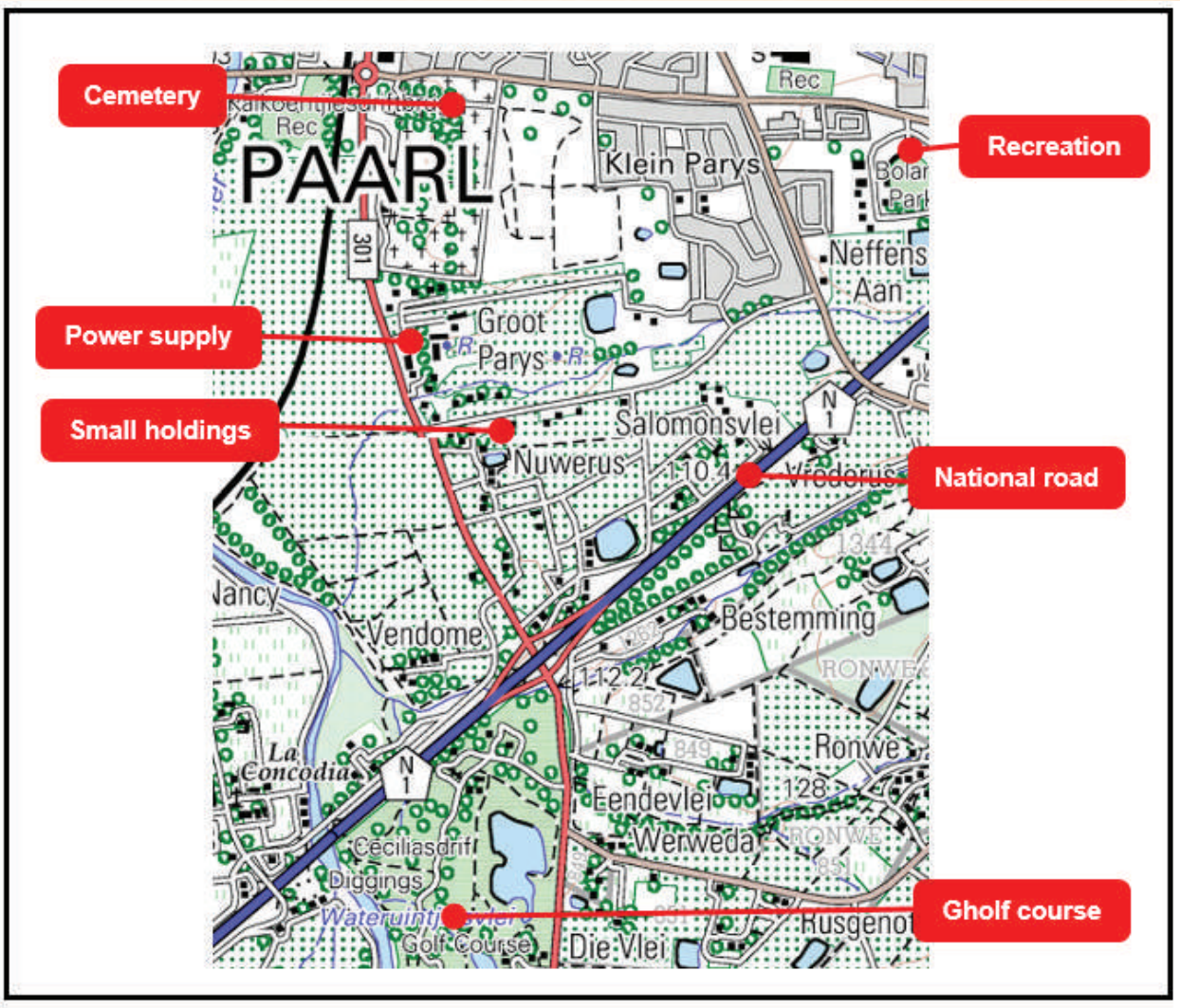


Rural and urban settlement

Identify the land-use zones on the topographic map below.



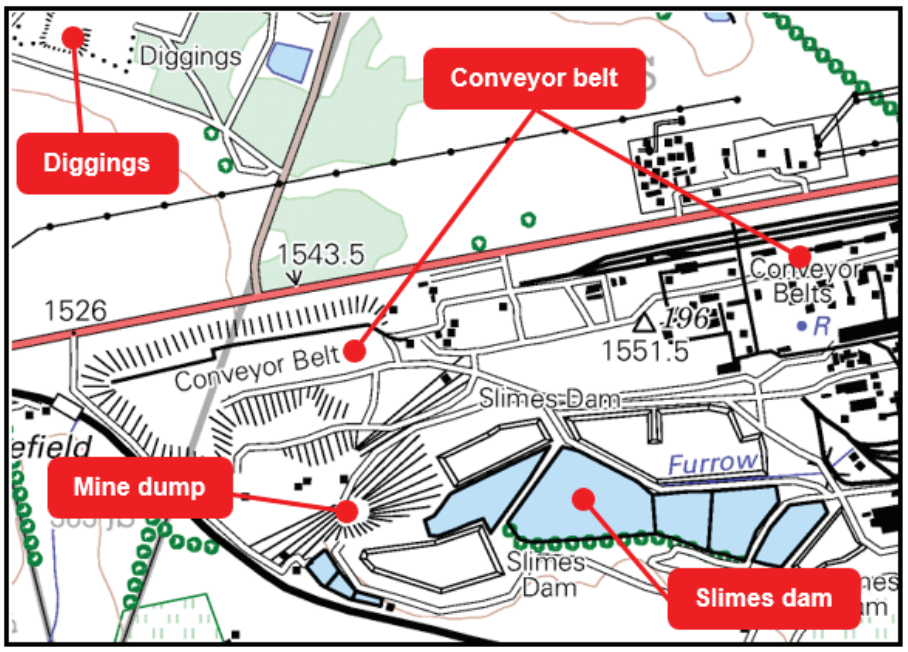
Give six functions found in the rural-urban fringe of Paarl.



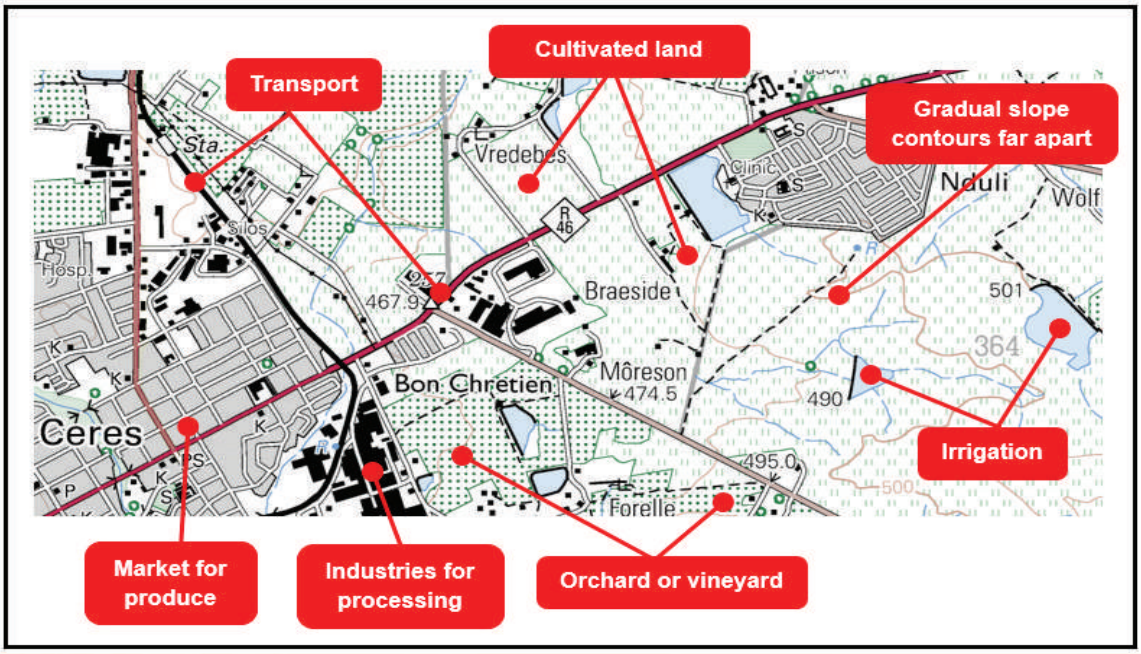
Identify the street pattern at A and B. Give three advantages and three disadvantages of each pattern.

Name	**Irregular**
Characteristics	No clear structure
Advantages	Improves traffic flow Fewer intersections Accommodates topography
Disadvantages	Difficult to plan Easy to get lost Not easy to expand

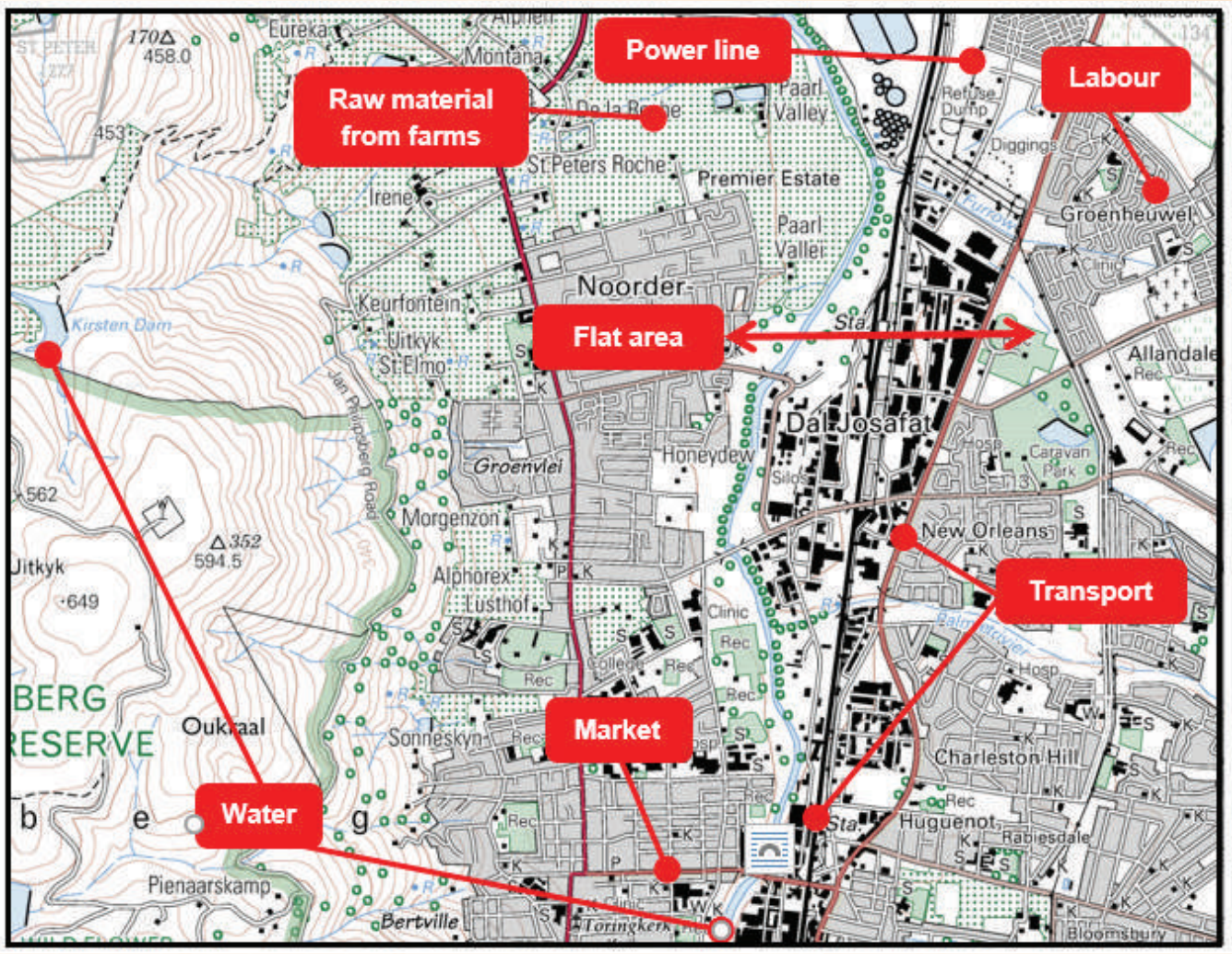
Primary activities - mining: Provide evidence from the map that mining is practiced in the area.



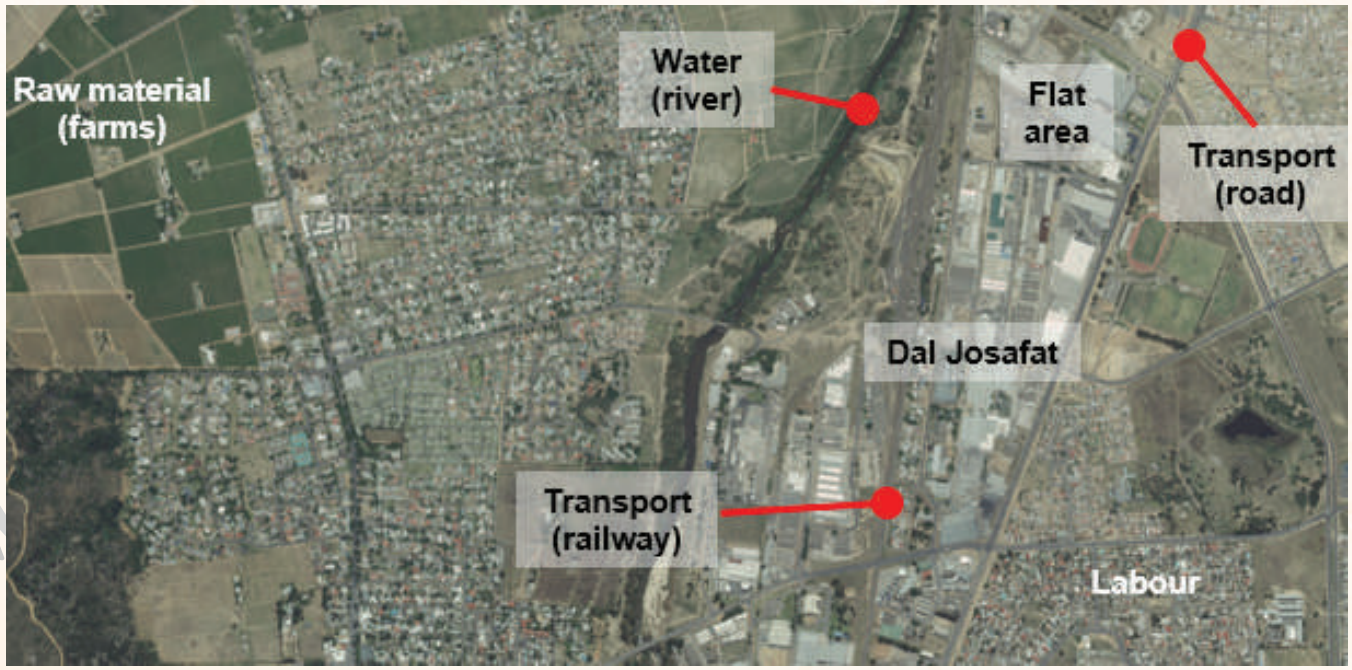
Primary activities - farming: Name the favourable factors that influence farming activities in Ceres.



Discuss the factors that influenced the location of industries in Dal Josaphat.



You must also be able to identify the features indicated below on an ortophoto map.



GEOGRAPHIC INFORMATION SYSTEMS (GIS)

WHAT IS A GIS?

A GIS is a:

- computer system of hardware, software and methods
- used to capture, manage, manipulate, analyse, model, display
- spatial data (geographic objects) and
- non-spatial data (attribute data)
- **to solve planning and management problems.**

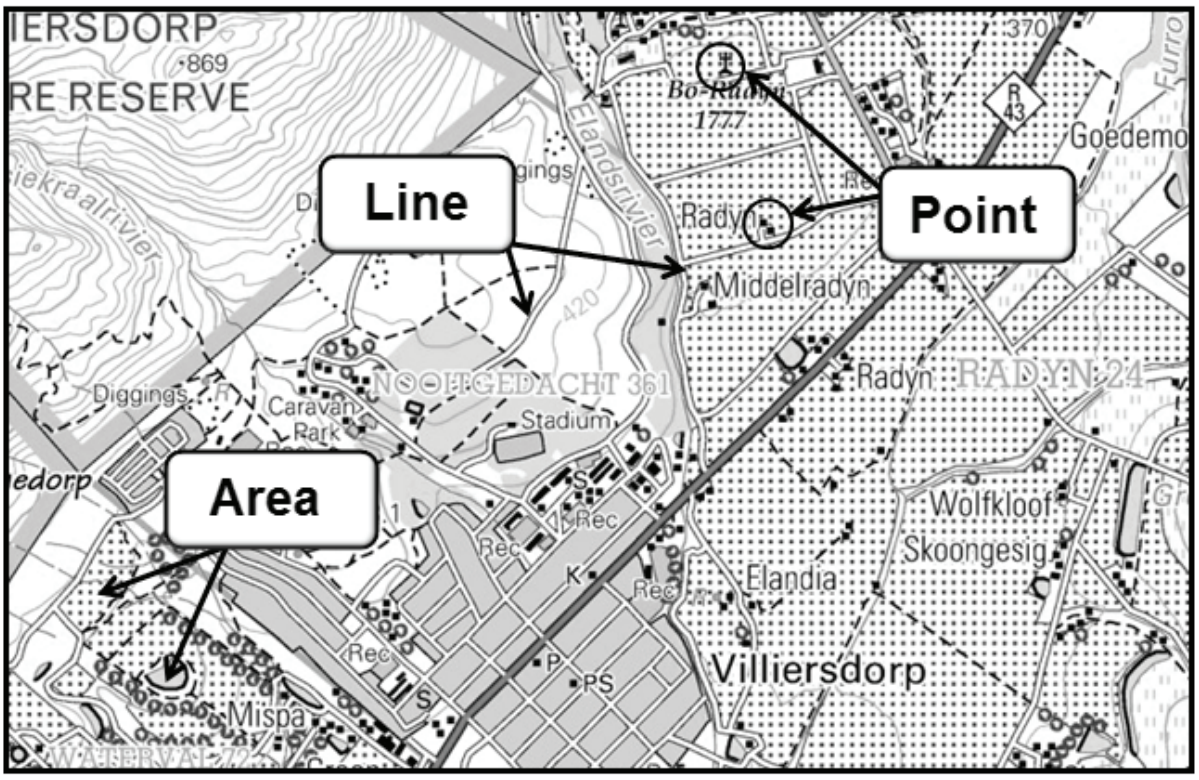
COMPONENTS OF GIS

Hardware	CPU, screen, keyboard, mouse, scanner, printer, digitizing tablet.
Software	Application programme such as ArcView.
Data	Maps, aerial photos, satellite images, administrative records, etc.
People	Data capturers, data users, GIS analysts.
Methods	GIS design according to user's needs.

REMOTE SENSING

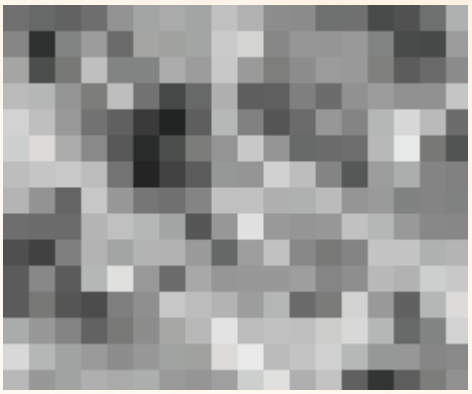
This is the process of collecting information about the Earth's surface **without actually being in contact with it** (e.g. using weather balloons, aeroplanes and satellites).

SPATIAL OBJECTS



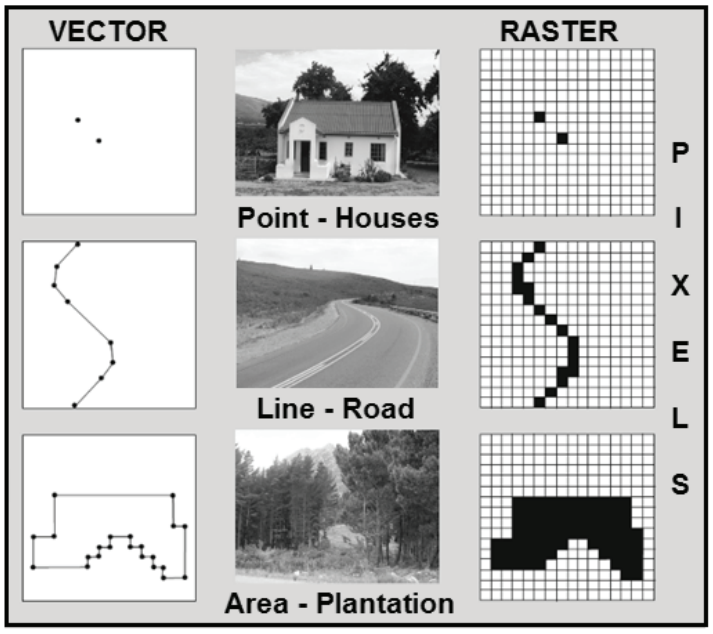
RESOLUTION

The ability of a remote sensing sensor to create a sharp and clear image.

HIGH RESOLUTION	LOW RESOLUTION
	
Many pixels Small pixels Objects easily recognised	Fewer pixels Larger pixels Objects not easily recognised

SPATIAL DATA

All geographic features/objects - both natural and man-made. [Map data]



RASTER AND VECTOR DATA

With **VECTOR DATA,** objects on the surface of the Earth are represented by using a **point**, a **line** or an **area** (polygon).

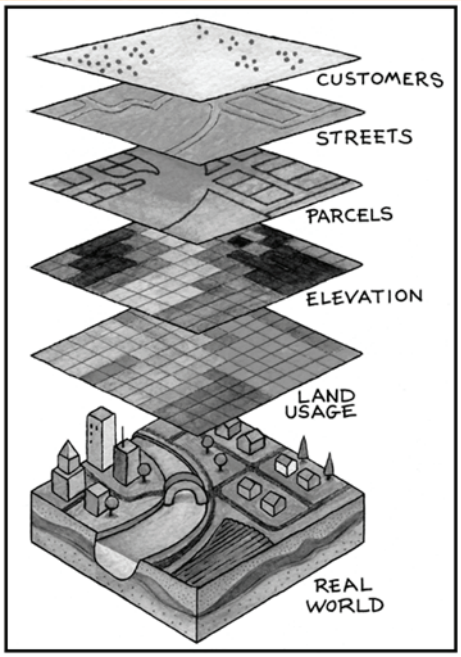
With **RASTER DATA,** objects on the surface of the Earth are represented by rows and columns of evenly sized blocks, called **pixels**. Pixels are the smallest unit of data storage.

ATTRIBUTE DATA

This relates to the characteristics/description/information of the geographic objects.

ATTRIBUTES FOR HOSPITAL				
Name	**Address**	**Number of doctors**	**Number of nursing staff**	**Number of beds**

GIS LAYERS



All spatial data are shown in layers - whether it is vector data or

raster data.

Each layer represents a single entity/theme.

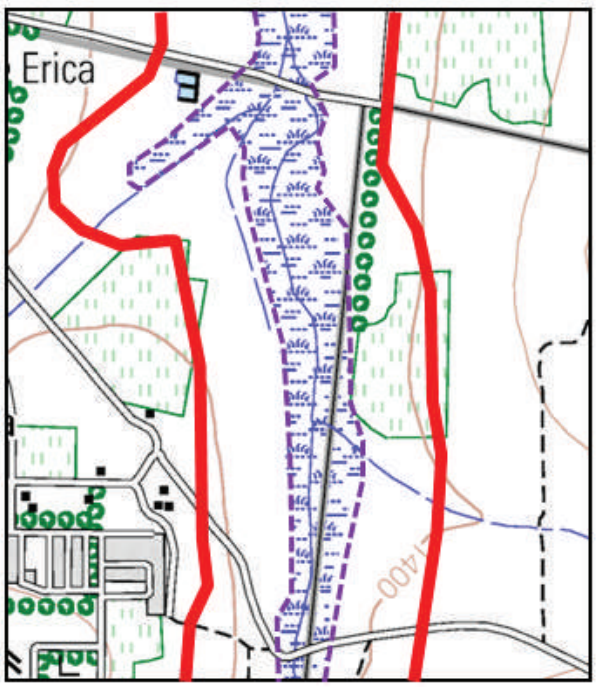
It is this characteristic that enables a GIS to manipulate, integrate, and query data.

DATA MANIPULATION

What is data manipulation?

Data manipulation involves getting the different data sources into a format that can be integrated.

DATA INTEGRATION



The integration of data involves the combination of two or more data layers in order to create a new one.

BUFFERING

It is sometimes necessary to identify zones at different distances from certain geographic features. Buffering definition: ***A line used to demarcate an area around a spatial feature.***

Examples:

- noise buffers next to roads
- safety buffers for dangerous areas.

Exam question:

Create a buffer zone of 250m around the marsh/vlei area.

Remember that 250m in reality will be 5mm on a 1:50 000 map.

HOW TO USE GIS

The Grade 12 Paper 2 GIS question asks questions relating to analysis.

- Determine/identify/name which data layers to use in solving a problem.
- Without thinking about GIS, identify factors/issues that play a role or relate to the problem.

This will also be the data layers needed in the analysis to get the solution to the problem?

SHOPS
1. Available plots
2. Costs of plots
3. Distance to other shops
4. Client base
5. Client buying habits
6. Central place
7. Influence sphere

CRIME
1. Type
2. Location
3. Time
4. Frequency
5. Risk zones
6. Neighbourhood characteristics

TELECOM
1. Relief (contours)
2. View sheds
3. Intervisibilty
4. Distance between towers
5. Signal strength

TERRAIN ANALYSIS
1. Vegetation type
2. Vegetation structure
3. Soil type
4. Soil texture
5. Soil moisture

FLOODS
1. Relief (contours)
2. History
3. Rainfall figures
4. 50-year flood line
5. Development above 50yfl
6. Development below 50yfl

GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

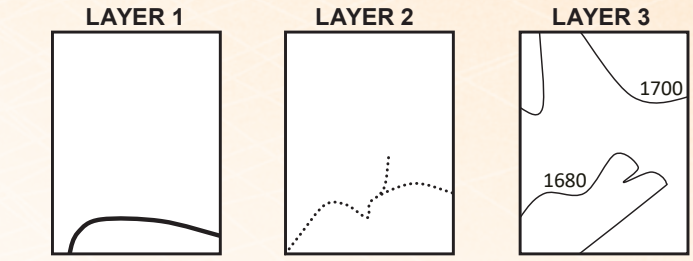
1.1	Refer to the orthophoto map and answer the questions that follow.		

	1.1.1	Define the term *database.*	
		_____ _____	
		(1 x 1)	(1)

	1.1.2	An urban and regional planner wants to examine the building density of Volksrust. He/she decides to use an orthophoto map in the local council's database. Give TWO reasons for his/her choice.	
		_____ _____ _____ _____	
		(2 x 2)	(4)

1.2	Refer to block **B5**, which consists of a number of data layers.		

	1.2.1	Use the THREE data layers below to create a paper GIS in the block provided.	



(3)

1.2.2 Which GIS process was used to produce the paper GIS in QUESTION 1.2.1?

_____

(1 x 1) (1)

1.2.3 Which data storage method (vector or raster) did you use to create the paper GIS in QUESTION 1.2.1? Give ONE reason for your answer.

Storage method: _____

Reason: _____

_____

(1 + 2) (3)

Use the letter **A** to indicate the most suitable site for a heavy industrial area on the paper GIS in the block (QUESTION 1.2.1). Give a reason for your choice of site.

1.2.4 Site in block: Indicate the site on the paper GIS block (QUESTION 1.2.1).

Reason: _____

_

_____

_

(1 + 2) (3)
[15]

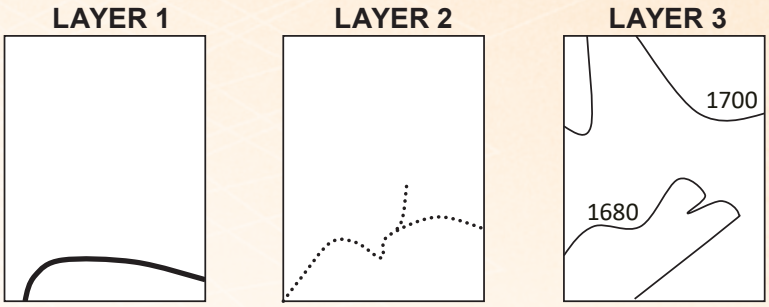
GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

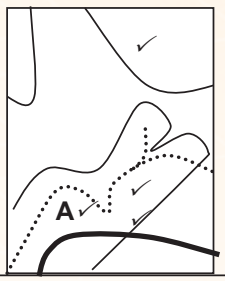
1.1	Refer to the orthophoto map and answer the questions that follow.		

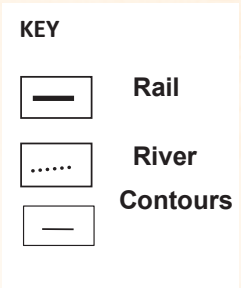
	1.1.1	Define the term *database.*	
		It is the storage/collection of data/information that is organised so that it can be organised/updated in a central place. ✓ ***(Concept)*** ***(1 x 1)***	**(1)**
	1.1.2	An urban and regional planner wants to examine the building density of Volksrust. He/she decides to use an orthophoto map in the local council's database. Give TWO reasons for his/her choice.	
		The orthophoto map has a good spatial resolution/high degree of clarity/detail. ✓✓ ***The orthophoto map is a photo/image of the area/realistic view/primary source.*** ✓✓ ***It gives him/her a clear plan view of the building density/ distance between buildings.*** ✓✓ ***It gives updated information.*** ✓✓ ***The local community database will have updated information.*** ✓✓ ***The orthophoto map has a larger scale.*** ✓✓ ***(Any ONE TWO)*** ***(2 x 2)***	**(4)**

1.2	Refer to block **B5**, which consists of a number of data layers.		

	1.2.1	Use the THREE data layers below to create a paper GIS in the block provided.	







1.2.2 Candidate must draw all THREE contour lines.

1.2.4 A will be correct if it is near the railway line (north or south) and the river.

(3 x 1) (3)

	1.2.2	Which GIS process was used to produce the paper GIS in QUESTION 1.2.1? ***Data layering/Data integration /Over layering/Thematic layering/layering*** ***Can explain the process/ Write a description.*** ✓ **(1 x 1)**		**(1)**

	1.2.3	Which data storage method (vector or raster) did you use to create the paper GIS in QUESTION 1.2.2? Give ONE reason for your answer.		

		Storage method:	***Vector*** ✓		
		Reason:	***Lines were used to create the paper GIS.*** ✓✓ **(1 + 2)**		**(3)**
	1.2.4	Use the letter **A** to indicate the most suitable site for a heavy industrial area on the paper GIS in the block (QUESTION 1.2.1). Give a reason for your choice of site.			

		Site in block:	**Indicate the site on the paper GIS block (QUESTION 1.2.1).**		
		Reason:	***It is situated on flat land.*** ✓✓ ***It is near the railway line.*** ✓✓ ***It is near the river.*** ✓✓ ***[ANY ONE]*** **(1 + 2)**		**(3)**
					[15]

MESSAGE TO GRADE 12 LEARNERS FROM THE BUSINESS STUDIES

Positive thinking involves no negative thinking, instead of thinking of what could go wrong, as a positive thinker you must think about what can go right. As a positive thinker you are going to look for the good in things.

That means you will always try to find something positive about every situation.

LOOK FOR THE BEST

Learn to look for the best in every situation. No matter what you're going through, if you look hard enough and keep the right ATTITUDE, you can FIND, something good about this experience of learning.

Use this guide with the intention of striving for SUCCESS and with the positive ATTITUDE with which we as Business Studies writers have written these notes.

After studying these notes, try to attempt the practice questions given without looking at the answers as well as study previous question papers and notes in other study guides to help you to succeed.

Important Things To Consider when You are Studying:

- ❖ Create a conducive environment for studying.
- ❖ Always target a 100% pass when you study.
- ❖ Know that 100% pass requires, 100% preparation, information and understanding.
- ❖ Use all the resources around you effectively and efficiently.

We wish you the best of luck in your study of Business Studies!!

RESOURCES:

1. Business Studies National Examination Guideline 2015.
2. NSC Business Studies Examination Papers and Memo November 2015,

   March 2016, November 2016.
3. Combination of National Prescribed LTSM for Business Studies.

Each developer should write a message of encouragement to the learners

Be funny, be witty, be creative

Motivate the learners

Inspire them to want to learn

10. Thank you



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