

**KZN DEPARTMENT OF EDUCATION  
GREENBURY SECONDARY SCHOOL  
JUNE EXAMINATION  
GEOGRAPHY P1**

NAME: \_\_\_\_\_ GRADE/DIV: \_\_\_\_\_

EXAMINER	: S.SINGH	MARKS	: 225
MODERATOR	: R.RANGANATHAN	DURATION	: 3 HOURS
GRADE	: 11	DATE	: 13 /06/2017

**INSTRUCTIONS**

1. This paper consists of 7 printed pages and an addendum of 6 pages.
2. Refer to the addendum when answering the questions.
3. Answer all questions.
4. Number your work exactly as the questions are numbered.
5. Writing must be neat and legible.

**QUESTION 1 – ATMOSPHERE AND GEOMORPHOLOGY.**

**1.1 PROVIDE THE CORRECT TERM/CONCEPTS FOR THE DESCRIPTIONS BELOW.**

- 1.1.1 It is found at the change in gradient at the base of a slope.
- 1.1.2 Loose or broken down material after the process of erosion.
- 1.1.3 When loose sediment changes into hard rock.
- 1.1.4 Loose material slipping down a slope.
- 1.1.5 A homoclinal ridge which is symmetrical in shape.
- 1.1.6 Also referred to as the steeper slope.
- 1.1.7 A layer of saturated rock through which ground water can flow.

( 7)

**1.2 INDICATE WHETHER THE STATEMENTS ARE TRUE OR FALSE.**

- 1.2.1 A Fohn wind is a hot dry wind.
- 1.2.2 A boundary separating two air masses of different densities is known as a front.
- 1.2.3 Condensation is the amount of water vapour in the air.
- 1.2.4 Sheet wash is rain water flowing beneath the earth's surface.
- 1.2.5 A volume of air defined by its temperature and moisture content is known as air mass.
- 1.2.6 Conduction is the process of transferring heat from one object to another by direct contact.
- 1.2.7 Solstice is the time of year when day and night are of equal length.
- 1.2.8 Isohyets are lines on a map joining places of equal temperature.

( 8)

**1.3 STUDY THE SYNOPTIC WEATHER MAP (FIG 1) AND ANSWER THE QUESTIONS.**

- 1.3.1 State the season represented by the map. Give TWO reason for your answer. 5
- 1.3.2 Name the fronts labelled X and Y. 2
- 1.3.3 Calculate the isobaric interval of the map. 2
- 1.3.4 Refer to weather station labelled A. Describe FIVE weather conditions occurring at this station. 5

(14)

**1.4 READ THE ARTICLE ON MONSOONS IN INDIA. (FIG 2)**

- 1.4.1 State the cardinal direction from which this monsoon wind blows. 1
- 1.4.2 Describe the characteristics of this air mass which causes the rain during the monsoon season. 2
- 1.4.3 In which season does the monsoon rains occur. Give a reason for your answer. 3
- 1.4.4 Discuss the significance of the monsoon rains to the people of India. (4 answers) 8

(14)

<b>1.5</b>	<b>STUDY THE DIAGRAM ON MASS MOVEMENTS (FIG 3) AND ANSWER THE QUESTIONS.</b>	
1.5.1	Define the term mass movement.	2
1.5.2	Comment on the possible cause of the type of mass movement at A.	2
1.5.3	Explain how the deforestation at B increased the mass movement shown on the sketch.	2
1.5.4	Comment on the dangers that the type of mass movement at C has for people living at the base of the slope. (2 answers)	4
1.5.5	In a paragraph of 8 lines , discuss 4 strategies you would implement to stabilise the area at C.	8
		(18)
<b>1.6</b>	<b>STUDY THE KAROO LANDSCAPE (FIG 4) AND ANSWER THE QUESTIONS.</b>	
1.6.1	Identify features A, B and C.	3
1.6.2	Give a reason for identifying each of the features A and B.	4
1.6.3	Are the above features found in arid or moist areas?	1
1.6.4	Why would a hogsback not form in this landscape?	2
1.6.5	Refer to feature A. Write a paragraph of 8 lines explaining how this feature forms and its significance to man.	8
		(18)
<b>1.7</b>	<b>REFER TO FIGURE 5 ON TORS AND ANSWER THE QUESTIONS.</b>	
1.7.1	Provide a brief description of a “Tor”.	2
1.7.2	Name the type of rocks that tors occur in.	1
1.7.3	Explain how intrusive features like these become exposed.	2
1.7.4	Explain why landscapes such as the one shown in figure 5 are sparsely populated.	2
1.7.5	Write a paragraph of approximately 8 lines explaining the formation of tors.	8
		(15)

<b>1.8</b>	<b>STUDY FIGURE 6 ON DESERTIFICATION IN AFRICA.</b>	
1.8.1	What is desertification?	2
1.8.2	State THREE ways in which humans contribute to desertification.	3
1.8.3	Describe the extent to which South Africa is threatened by desertification. (2 answers)	4
1.8.4	Discuss TWO effects of desertification on the economy of Africa.	4
1.8.5	Write a short paragraph in which you suggest sustainable ways to prevent and reverse desertification in Africa. ( 4 answers)	8
		(21)

**TOTAL QUESTION 1 = 115**

**QUESTION 2 – ATMOSPHERE AND GEOMORPHOLOGY**

**2.1 MATCH THE TERMS IN COLUMN B WITH THE DESCRIPTIONS IN COLUMN A. WRITE ONLY THE LETTER OF YOUR CHOICE FROM COLUMN B NEXT TO THE QUESTION NUMBER.**

COLUMN A	COLUMN B
2.1.1 The relief of the earths surface.	A Desalination
2.1.2 Breakdown of rocks due to chemical, mechanical and temperature differences.	B Plateau
2.1.3 Occurs when ground water evaporates leaving behind dissolved salts on the surface.	C Exfoliation
2.1.4 Removal of broken down material by wind, water or ice.	D Homoclinal Ridge
2.1.5 Also known as scarp retreat.	E Topography
2.1.6 Features that have a scarp slope and a dip slope	F Back wasting
2.1.7 Outer layers of igneous rock peel off due to temperature changes causing expansion and contraction.	G Weathering
2.1.8 Large high-lying area that is relatively flat.	H Erosion
	I Homoclinal Shifting
	J Coastal plain

( 8 )

**2.2 CHOOSE THE CORRECT ANSWER FROM WITHIN BRACKETS.**

- 2.2.1 Movement of the earth around the sun which causes the seasons is known as (rotation, revolution)
- 2.2.2 Type of climate experienced by coastal places (continental climate, maritime climate)
- 2.2.3 This cell occurs between 60° - 90° N/S latitudes. (Ferrel, Polar)
- 2.2.4 The vertical slope element is (talus, cliff).
- 2.2.5 An example of a basaltic plateau is (Drakensburg mountain, Table mountain)
- 2.2.6 Gentle level landscape is a (conical hill, pediplain).
- 2.2.7 Clouds form under (high, low) pressure conditions.

( 7 )

**2.3 STUDY FIGURE 7 AND ANSWER THE QUESTIONS.**

- 2.3.1 Name the line represented by letter X 1
- 2.3.2 State the force represented by letter A. Give a reason to support your answer. 3
- 2.3.3 State the force represented by letter B. Give a reason for your answer. 3
- 2.3.4 Name the resultant wind labelled C. 2
- 2.3.5 Briefly describe how this wind is formed.(answer 2.3.4) 4
- (13)

**2.4 READ ARTICLE IN FIGURE 8 AND ANSWER THE QUESTIONS.**

- 2.4.1 State the cause of El Nino and La Nina. 2
- 2.4.2 Name the season in which El Nino strikes South Africa. 1
- 2.4.3 Explain how El Nino and La Nina affect the weather in South Africa. 4
- 2.4.4 Scientists refer to the event when exceptionally cool water lies off the coast of South America as La Nina. Explain what happens in the Pacific Ocean during a La Nina event. (3 answers) 6
- (13)

**2.5. STUDY FIGURE 9 WHICH DEPICTS IGNEOUS INTRUSIVE FEATUES.**

- 2.5.1 Define intrusive volcanism. 2
- 2.5.2 Identify the igneous intrusive features labelled A, B and C. 3
- 2.5.3 State ONE characteristic of feature A evident on the sketch. 2
- 2.5.4 Name ONE landform that may develop from features A and B respectively when they are exposed to the earths surface. 2
- 2.5.5 Explain how feature B is formed. 4
- 2.5.6 Give ONE South African example of a lopolith. 1
- (14)

**2.6 STUDY FIGURE 10 ON SLOPE ELEMENTS AND ANSWER THE QUESTIONS.**

- 2.6.1 Name slope elements A, B, C and D. 4
- 2.6.2 State the geomorphological activity that occurs at A, B and C. 3
- 2.6.3 Which slope element represents a concave slope? 1
- 2.6.4 Which slope element is best suited for crop farming? Give a reason for your answer. 3
- 2.6.5 "Slopes provide a valuable piece of ground for mankind" Discuss the significance of slopes for human activity.(Positive and Negative effects) (4 answers) 8  
(19)

**2.7 STUDY FIGURE 11 ON STRUCTURAL LANDFORMS AND ANSWER THE QUESTIONS.**

- 2.7.1 Match the letter E and F with (Mesa, Cuesta). 2
- 2.7.2 Give ONE difference between layers E and F. 4
- 2.7.3 Name slopes X and Y found on feature E. 2
- 2.7.4 Of what significance are cuestas to man. (3 answers) 6  
(14)

**2.8 READ THE CASE STUDY ON DROUGHTS –FIGURE 12**

- 2.8.1 Define the term Drought. 2
- 2.8.2 What according to the article has been the impact of drought on agricultural production. (2 answers) 4
- 2.8.3 Outline the negative impact that drought is currently having in Southern Africa. (4 answers) 8
- 2.8.4 State FOUR solutions that maybe introduced to reduce the effects of drought in South Africa. 8  
(22)

**TOTAL QUESTION 2 = 110**

**FINAL TOTAL = 225**

PAGE 7 OF 7

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05/06/17



GEOGRAPHY

JUNE EXAM

GRADE 11

2017

ADDENDUM

THIS ADDENDUM CONSISTS OF 6 PAGES.

FIGURE 1

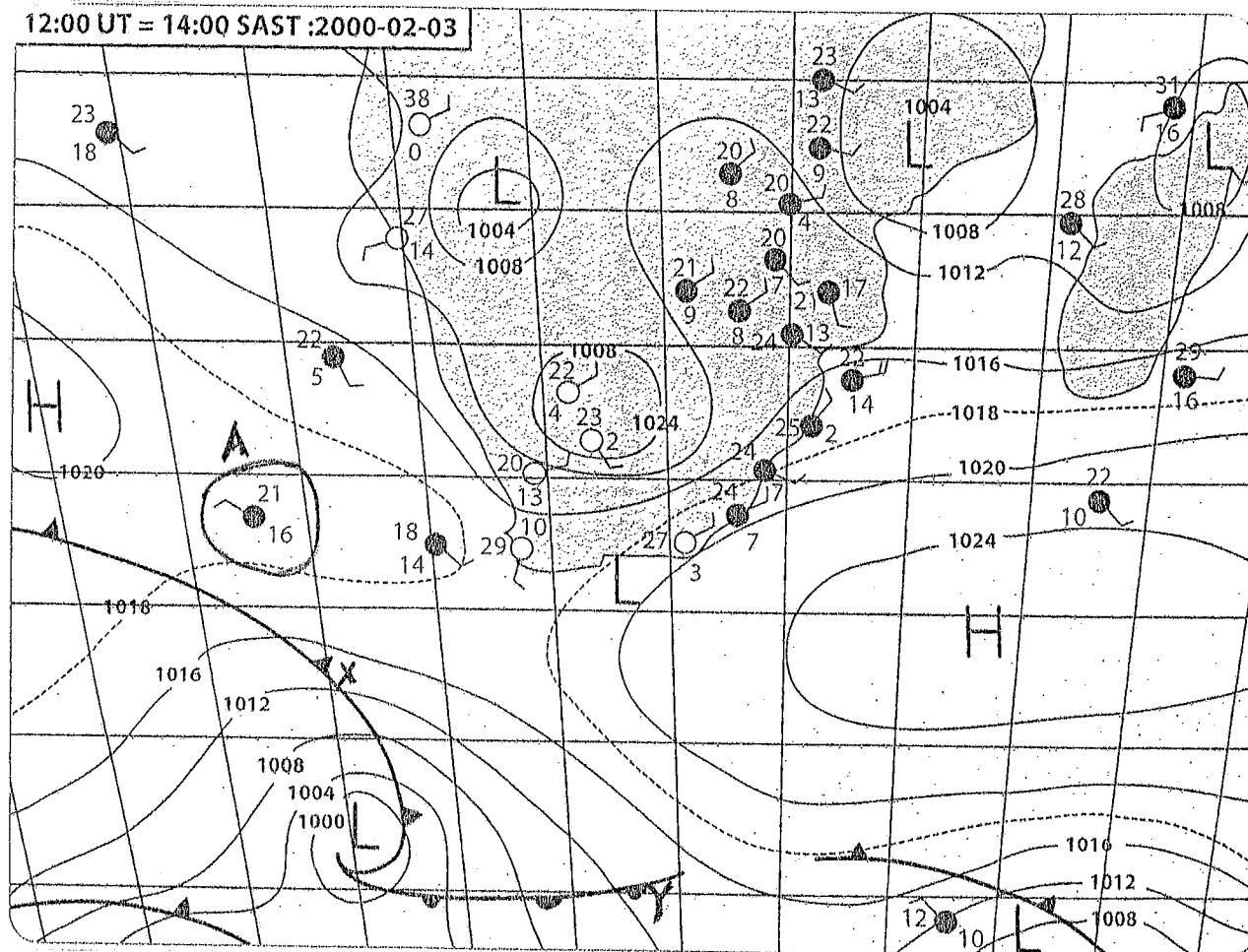


FIGURE 2

### Preparing for the monsoon

India has a love-hate relationship with the annual weather phenomenon called the monsoon. With over 50 per cent of the economy depending on agriculture, she can't do without it. But what the monsoon does with India – is the other part of the story.

Too much rain and large swathes of the land are turned into virtual islands with millions displaced and not enough rain means crippling drought. 80 per cent of the total rainfall in India takes place between June and September under the influence of the south-west monsoon. Floods from these monsoon rains are a perennial phenomenon.

Widespread human and material losses, collapse of infrastructure and services may be major consequences of the floods. Hundreds of thousands may be displaced, often in isolated and not easily accessible areas. Loss of life also occurs each year due to the flooding from the monsoon rains.

Against the total of 40 million hectares prone to floods, approximately 15 million hectares have been protected by construction of embankments.

Dams and barrages have also been constructed, but sometimes these cause floods. In 2006 as many as 10 dams had to release large quantities of water within 24 hours after four days of incessant rains. As a result, over 2 000 villages in 104 taluks spread over 19 districts downstream of the dam were affected and more than 200 000 hectares of agricultural land were damaged. Around 100 000 people were affected. Flash floods in Gujarat, Himachal Pradesh and Bihar were similarly caused by dams upstream discharging excess water.

As part of the measures to prepare for the disasters caused by the monsoons, there is an overall master plan for every state and a contingency plan for each district, involving apart from other things, steps required to be taken before the onset of floods and post-flood management.

FIGURE 3

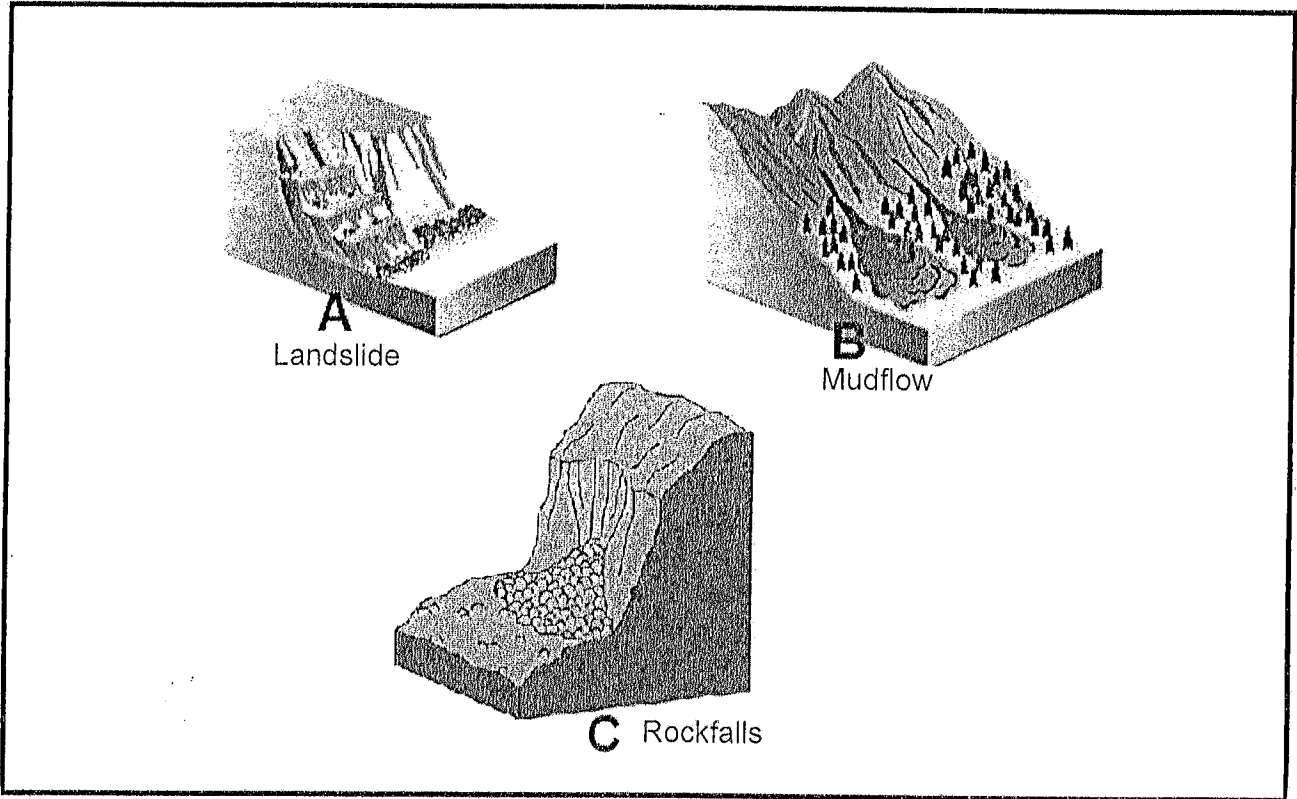


FIGURE 4

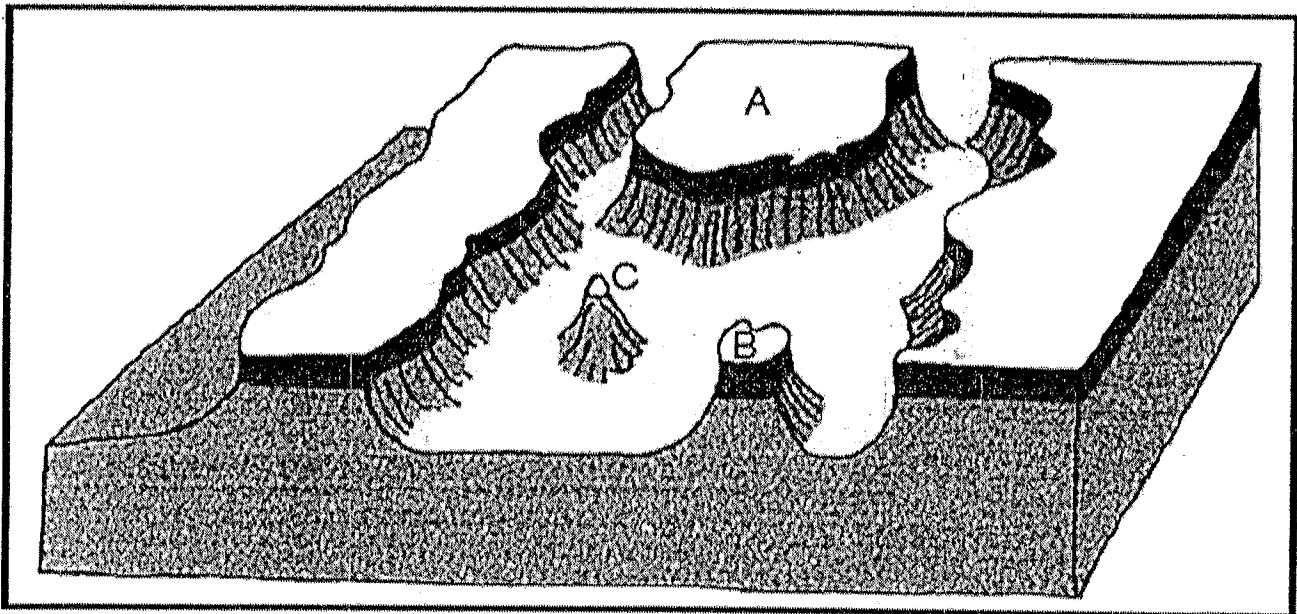


FIGURE 5

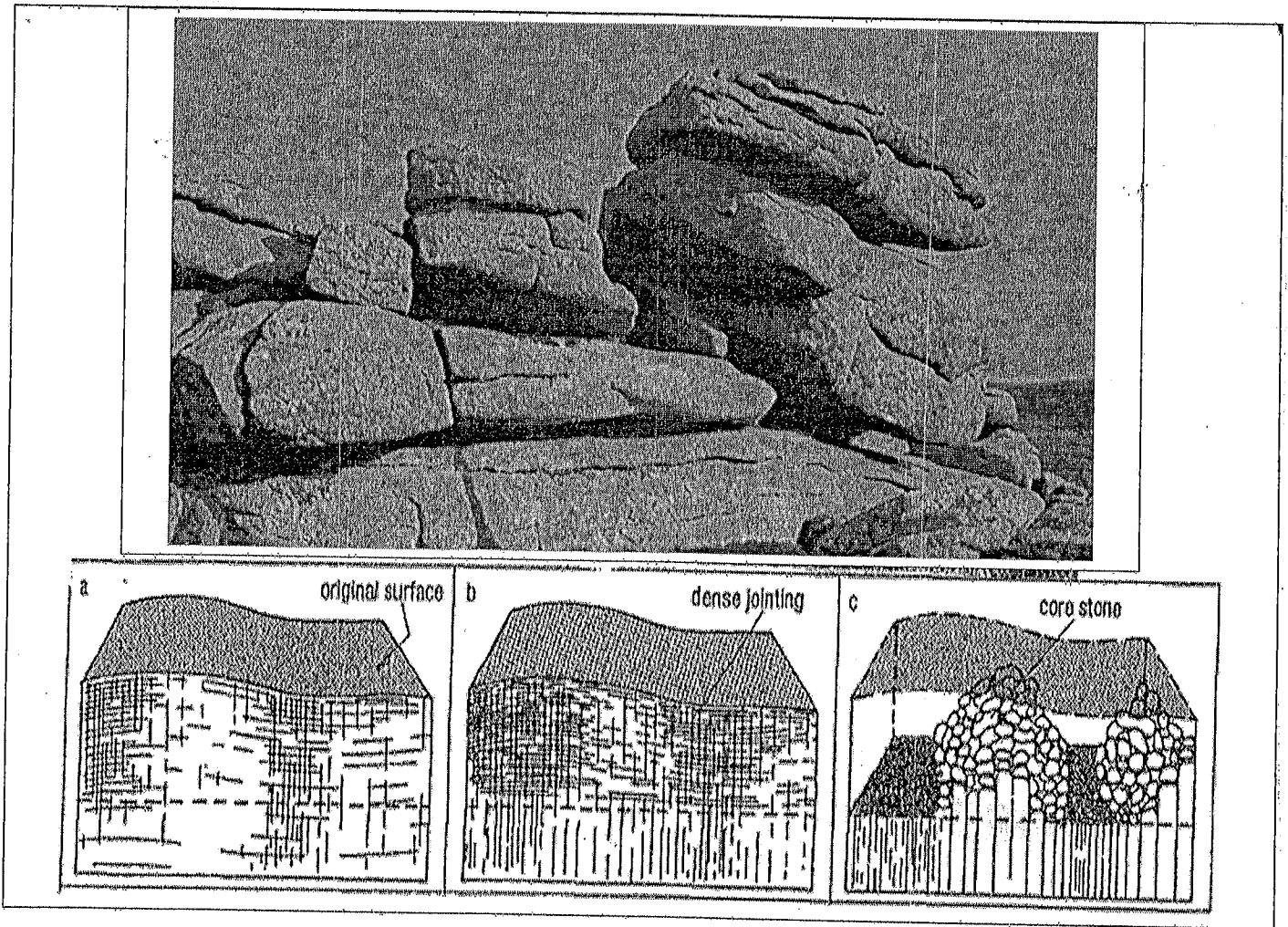


FIGURE 6

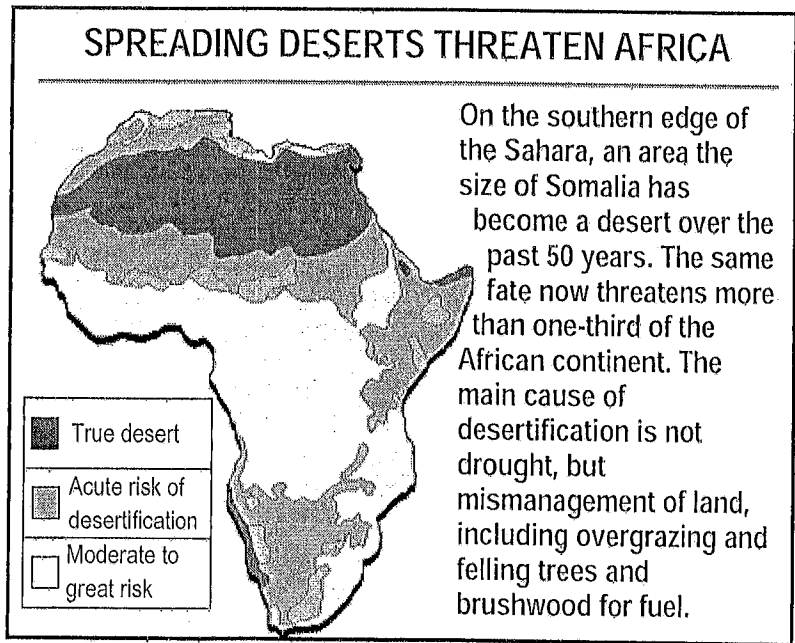


FIGURE 7

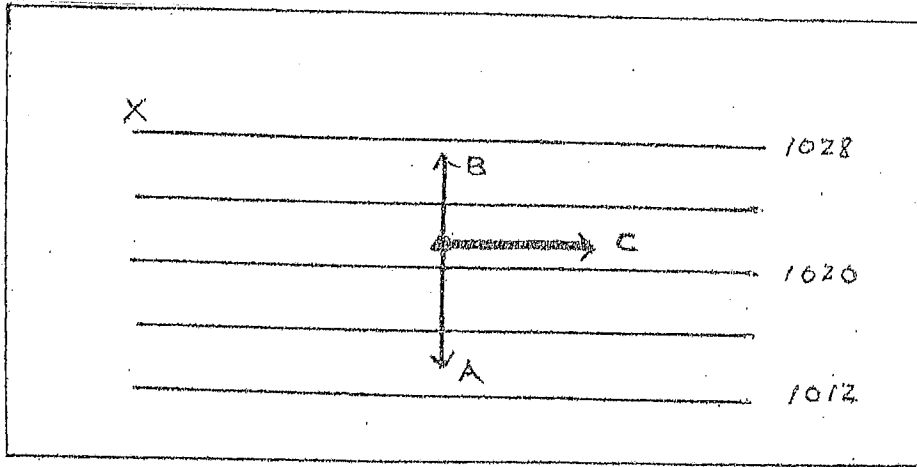


FIGURE 8

**El Nino and La Nina: The boy child and his little sister**

In Spanish, El Nino means 'The Christ child'. This is the name Peruvian fishermen gave to a warm current that sometimes arrived off the South American coast around Christmas time. The warm current was a tell-tale sign that fishing would be bad that season, because El Nino blocks the upwelling of nutrient rich water.

El Nino is responsible for drought in some parts of the world. Since 1525, there have been 113 El Nino's recorded. This is an average of about one El Nino in every four years. The catastrophic El Nino's are spaced roughly 15 years apart.

FIGURE 9

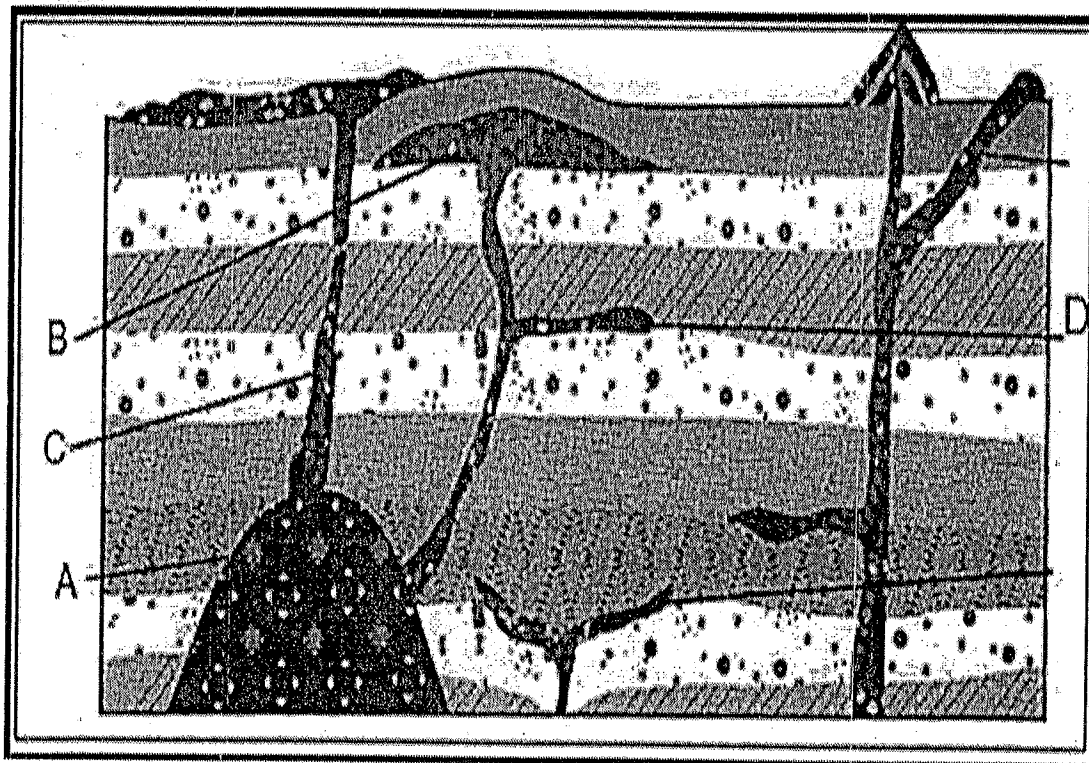


FIGURE 10

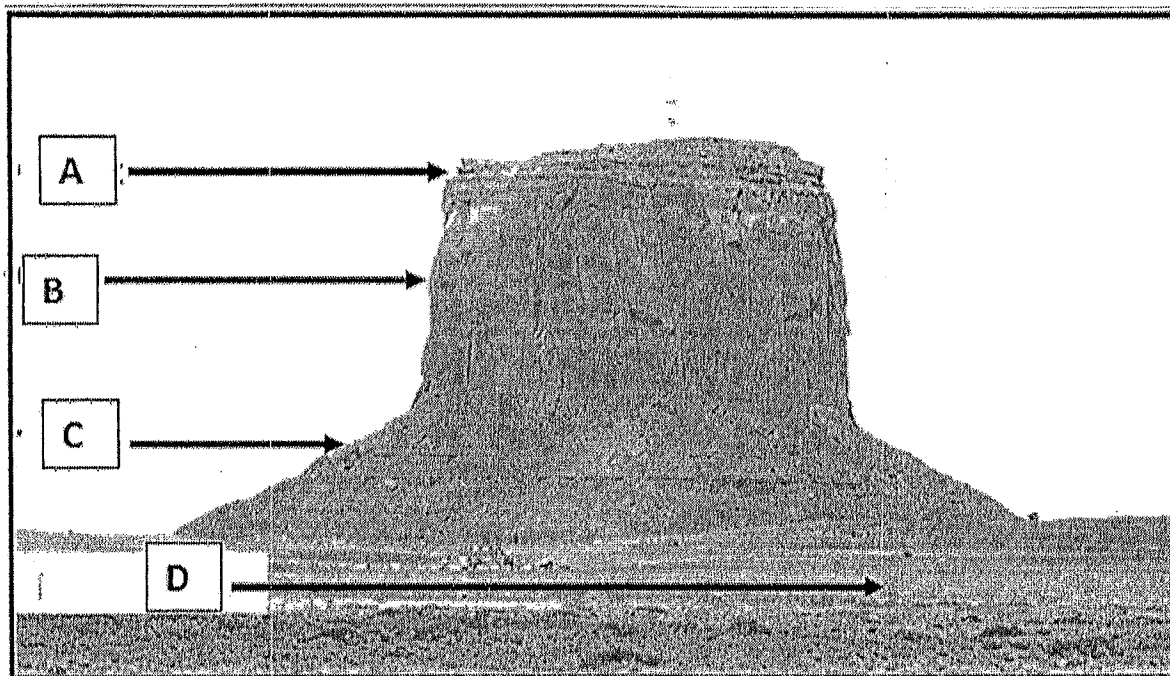


FIGURE 11

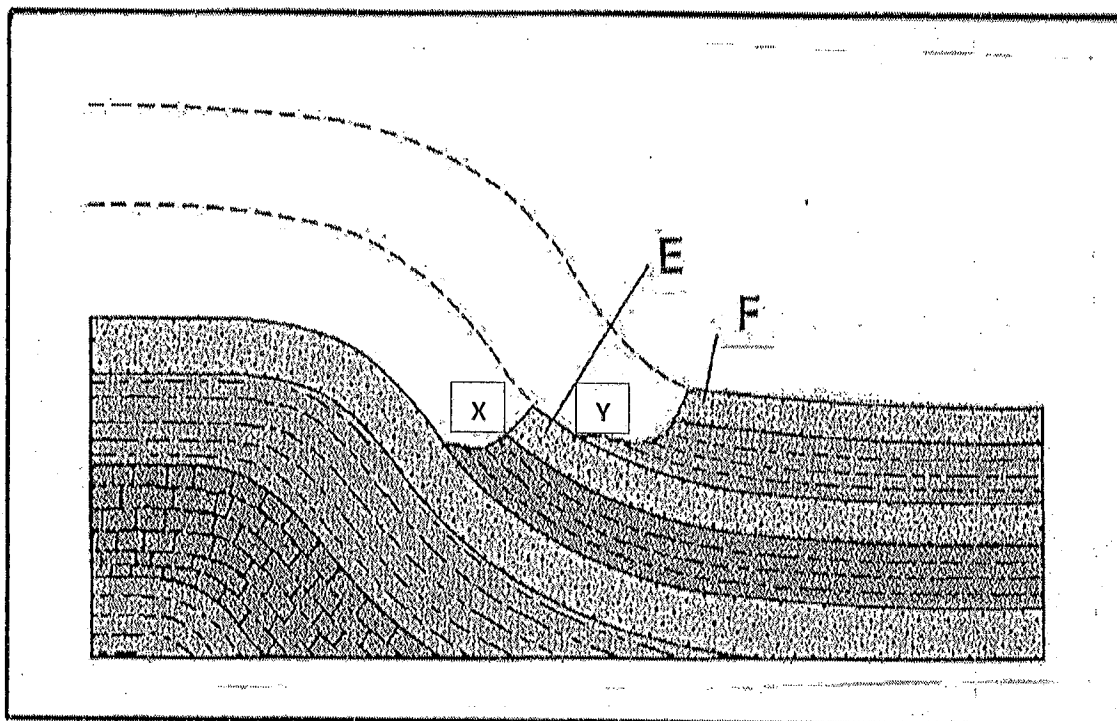
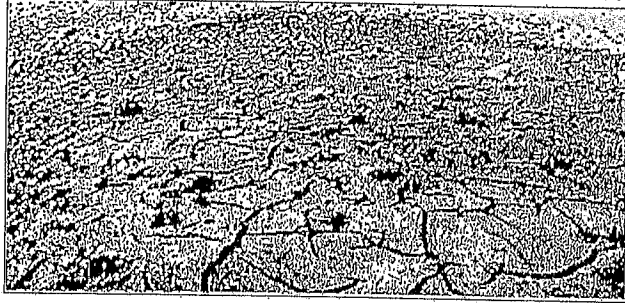


FIGURE 12

**FARMERS SELL LIVESTOCK TO EASE  
PRESSURE AS DROUGHT CONTINUES**



Farmers in the Western and South-Western Free State are selling livestock to ease the pressure on grazing due to the continued drought in the area. Large sections of the Free State have not yet had enough rain to break the drought and although farmers have planted maize, they need follow-up rain urgently. South Africa often suffers a drought during an El Nino event. El Nino is the natural warming of the surface temperatures of the Pacific Ocean, which occurs approximately every two to seven years. The change in the ocean temperature has been seen to have a dramatic effect on the weather around the world. Maize and livestock farmer, Willie Oosthuizen says: We have not received enough rains. We received enough rains to plant and plant in faith now because there is not enough soil moisture in the bottom soil. So we plant and then we try to get it out of the ground and we pray for follow up rains so that the crop can grow - so that people in the city can eat and so we can become sustainable."

The South African Weather Service's forecaster Sihle Kunene says there's a good chance of reasonable amounts of rainfall over the area from Sunday."The rain that we received so far hasn't been a lot, it's mostly in the eastern Free State and the western part. It's still very dry. It's only trace amounts to 4.6 millilitres in Bethlehem but it's not a lot in terms of farmers. We expect a cut-off low coming into the country and that will give us some reasonable amounts of rainfall especially for the farmers."

**[Source : Adapted from Google ]**

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08/06/17



(1)

Marking Memo

Grade 11 - Geog P1

JUNE 2017

- 1.1.1. Knickpoint ✓
- 1.1.2. Debris ✓
- 1.1.3. Lithify ✓
- 1.1.4. Slump ✓
- 1.1.5. Hagsback ✓
- 1.1.6. Scarp slope ✓
- 1.1.7. Aquifer ✓

(7)

- 1.2.1. True ✓
- 1.2.2. True ✓
- 1.2.3. False ✓
- 1.2.4. False ✓
- 1.2.5. True ✓
- 1.2.6. True ✓
- 1.2.7. False ✓
- 1.2.8. False ✓

(8)

1.3.1. Summer ✓, date is Feb // overcast // conditions dominate /  
SAH + SHH further south etc. (Any 2)

1.3.2. X - cold front ✓ Y - warm front ✓

1.3.3. 4 mb //

1.3.4. Air temp - 21°C ✓

Dew point temp - 16°C ✓

Cloud cover - overcast ✓

Wind direction - NW ✓

Wind speed - 10 knots ✓

(14)

(2)

1.4.1. South West ✓

1.4.2. Warm, moist air mass ✓

1.4.3. Summer ✓ high temp on land = low pressure. //

1.4.4. Rains are welcome for agriculture - prevents drought. //

Dams fill up to capacity //

Coast hot summer temp. //

Causes floods ↑ Damage to property + farms. //

Lives are lost (Any other reasonable answers) (14)

1.5.1 Movement of surface material caused by gravity. //

1.5.2. Occurs when settlements develop on hilly slopes. //

1.5.3. Soil not protected against rain - roots of plants do not bind soil - therefore can be washed away easily. //

1.5.4. Damage to property / houses //

Can cause injury / death. //

Rockslides can bury houses. etc //

1.5.5. Use netting / caging to keep loose material intact. //

Build rock walls at the base of slope to capture falling rocks. //

spraying of concrete to stabilise the rock. //

Drilling bolts + nuts into the rocks. //

Channeling of water out of soil to keep it drier. //

(Accept any other reasonable answers). (18)

(3)

- 1.6.1 A - Mesa ✓
- B - Butte ✓
- C - Conical Hill ✓

1.6.2. A - diameter greater than height / B // A has a greater diameter than B

1.6.3. Arid areas ✓

1.6.4. All features in this landscape are associated with horizontal strata - hogback associated with inclined strata //

1.6.5. A plateau is reduced in size by action of running water. //

A mesa is formed through backwasting.

Serves as a tourist attraction. //

Slopes are steep - unsuitable for farming.

Affect telecommunication. //

(Must explain formation and provide at least one significance). (18)

1.7.1. Mound of rounded rocks. //

1.7.2. jointed igneous / dolomite / granite (Must have jointed)

1.7.3. When overlying rocks are removed by erosion. //

1.7.4. Rocks are unstable = rockfalls. //

1.7.5. Igneous rocks have horizontal + vertical joints. //

Rain enters cracks = chemical weathering.

Rocks become rectangular - more rounded. //

Becomes exposed to surface after many years. //

Appear as a mound of rounded rock blocks. (15)

(4)

1.8.1. When productive land becomes ~~becomes~~ non-productive, infertile soil etc due to poor land-management.

1.8.2. Overgrazing

Farming marginal land

Incorrect irrigation practices

Poor grazing management

Population increase

(Any 3 / other reasonable answer)

1.8.3. Moderate to great risk in East.

Acute risk of desertification in West

Deserts expanding eastwards

SA is 50% threatened.

(Any 2)

1.8.4. Desertification reduces the ability of land to support life.

Affects domestic animals + agricultural crops.

Reduction in food.

Poverty sets in.

(Any 2 / reasonable answers)

1.8.5. Reduce number of animals on land.

Change farming methods to suit land.

Good land management in semi-arid areas.

Get educated on proper conservation methods.

Reseeding in badly degraded areas.

(must include at least one for prevent /

reversing desertification / accept any other reasonable answers)

(21)

Q1 = 115

(5)

Question 2.

- 2.1.1 E ✓
- 2.1.2 G ✓
- 2.1.3 A ✓
- 2.1.4 H ✓
- 2.1.5 F ✓
- 2.1.6 D ✓
- 2.1.7 C ✓
- 2.1.8 B ✓

(8)

- 2.2.1 revolution ✓
- 2.2.2 maritime climate
- 2.2.3 Polar ✓
- 2.2.4 cliff ✓
- 2.2.5 Drakensburg mountain ✓
- 2.2.6 pediplain ✓
- 2.2.7 low ✓

(7)

- 2.3.1 isobar ✓
  - 2.3.2. PGF Moves from HP to LP at  $90^\circ$  to isobars.
  - 2.3.3. Coriolis force occurs at  $90^\circ$  to path of wind.
  - 2.3.4. Geostrophic wind //
  - 2.3.5. Air moves from HP to LP due to PGF.
- When PGF and CF are balanced, wind blows parallel to isobars = GW.

(13)

(6)

\* 2.4.1. Occurs when there is a disruption // in ocean atmosphere systems in S. Pacific Ocean.

2.4.2. Summer

2.4.3. El Nino - hotter drier summers + sometimes drought //

La Nina - milder + wetter summers + sometimes flood //

2.4.4. Tropical easterly / Trade winds are stronger than normal //

Upwelling of cold water is increased - eastern side of Pacific gets very cold.

Heavy rain on eastern side of // Australia, SE Asia + west of Pacific Ocean.

South America experience drier than normal conditions.

(Any 3 from above).

(13)

2.5.1. Intrusive - movement of magma within the earth's surface //

2.5.2. A - batholith / B - laccolith C - dyke/pipe

2.5.3. dome shape //

2.5.4. A - dome / B - tors //

2.5.5. Magma moves through rock layers. Forced upwards + solidifies //

2.5.6. Bushveld lopolith / Bushveld igneous complex.

(14)

(1)

2.61. A - crest ✓

B - cliff ✓

C - talus ✓

D - pediment

2.62. A - soil creep / weathering

B - erosion ✓

C - deposition ✓

2.63. C - Talus

2.64. D - pediment - flat // ideal to use machinery.

2.65. Tourist attraction

Weathered away to form fertile soil.

Recreational activities

Forestry practised on steep slopes.

Flat areas suitable for farming.

Steep slopes - farming difficult.

Danger of mass movement.

(Any 4 discussed).

(19)

2.71. E - cuestas ✓

F - mesa ✓

2.72. E - associated with inclined strata.

F - horizontal strata

2.73. X - scarp ✓

Y - dip ✓

2.74. Defence barrier

Fertile soil / flat land at the cuestas plains

Steep slopes of cuestas used for forestry.

(14)

(8)

2.8.1. Prolonged period of no rain fall //

2.8.2. Farmers selling their livestock .

Poor wheat production //

Loss of income

Shortage of food

Prices will increase .

(Any 2)

2.8.3. Reduced crop production - famine //

People die from starvation & malnutrition .

Meat prices rise - scarcity of meat .

Export is reduced . //

Food has to be imported - food insecurity

Job losses in farming - poverty

Greater rural - urban migration .

(Any 4 / other reasonable answer) .

2.8.4. Inter - basin water transfer schemes . //

Sale of livestock before drought hits //

Water restrictions in urban areas . //

Govt to remove all water thirsty crops . //

(Any 4 / other reasonable answer) .

(22)

Q2 = 110

TOTAL = 225