



GRADE 10 EXEMPLAR EXAMINATION  
NOVEMBER 2006

GEOGRAPHY: PAPER II

MEMORANDUM

Time: 2 hours

200 marks

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**The marking memorandum is a working document prepared for use by teachers.**

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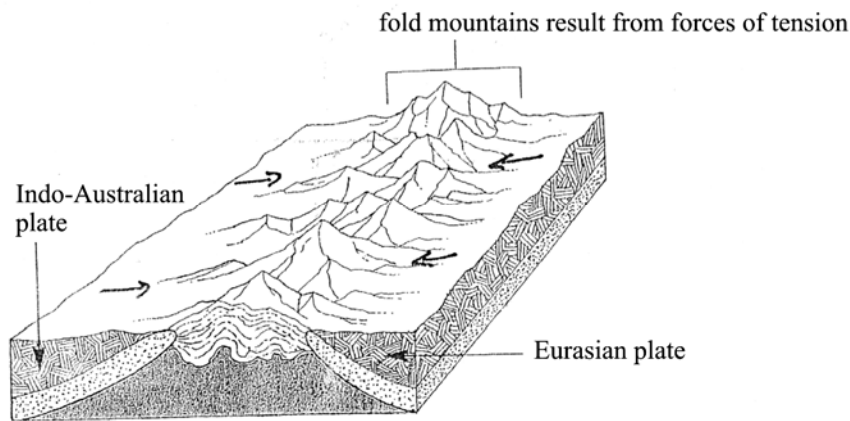
**QUESTION 1 Compulsory question**

**1.1 Geographical skills and techniques**

- 1.1.1 1100 – 1 300 kms (1)
- 1.1.2 2hrs 45 mins – 3 hrs 15 mins (2)
- 1.1.3 (a) Get information on the steepness of slopes, ground reports on the damage, satellite evidence of the damage and plot these on maps. (2)
- (b) Get information on the medical needs of each area, food requirements and shelter requirements and plot these on maps. (2)
- (c) Get information on damaged routes from the ground and from the satellite and plot these on maps. (2)

**1.2 Plate tectonics, mountain building and earthquakes**

- 1.2.1 This is a scale which measures the magnitude or intensity of an earthquake . (1)
- 1.2.2



Intercratonic fold mountains – two continental plates colliding

- (3)
- 1.2.3 The epicenter is the point on the earth's surface directly above the focus of the earthquake (where the earthquake begins). [It is also the point of greatest earthquake intensity on the earth's surface. The epicentre of the Pakistan Earthquake was close to the city of Muzafarrabad.] (1)

**1.3 Population problems, climate, weathering and erosion**

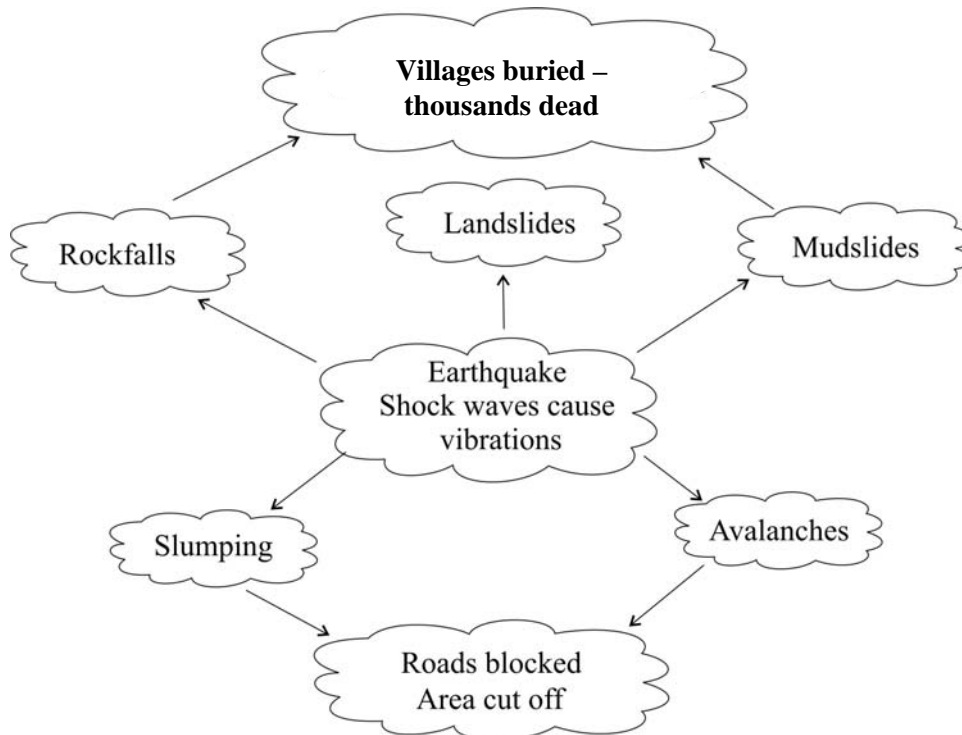
- 1.3.1 On the midslope of the south-facing slope to get the full benefit of the more direct, and hence warmer, rays of the winter sun. This is also not too high up the slope to avoid the low winter temperatures of the upper slopes and frost pockets of valley (thermal belt). It is also midway between the valley floor, where crops are grown and the upper slopes where the sheep and cattle graze. The site also avoids the possibility of flooding in the valley. **(Note: More than a climatic explanation is required).** (2)

1.3.2 When temperatures close to the ground drop below 0 degrees. Dew point temperature is reached and condensation takes place. Minute water droplets attach themselves to nuclei. These droplets freeze to form minute ice particles which then attract other ice particles and snow flakes form. They begin to fall to earth because of their weight and, because of the very low temperatures, they do not melt and snow falls. (2)

1.3.3 Positive: The melting snow provides the rivers with perennial waters. Snow will kill off any insects in the soil.  
 Negative: Snow cuts off villages from each other and it also blocks communications with the outside world. The freezing temperatures kill livestock and people. The melting snows can cause flooding, mudslides and avalanches in the steep-sided valleys. (4)

1.3.4 The people will have to cut into the steep slopes to build their villages and to cultivate the soils. This will expose the soils to erosion which is caused by surface run-off following rain and after the snow melts. The removal of natural vegetation in order to build the villages and set up the fields will also accentuate soil erosion. Paths created by humans and animals will encourage runoff and the development of deep dongas. Such actions by the people will hasten soil creep and, because of the steepness of the slopes and the moisture caused by rainfall and melting snow, which seeps into the soil; mudslides, mudflows, slumping and avalanches could also result. Removing the soil to build villages will expose the underlying rock to physical and chemical weathering. (4)

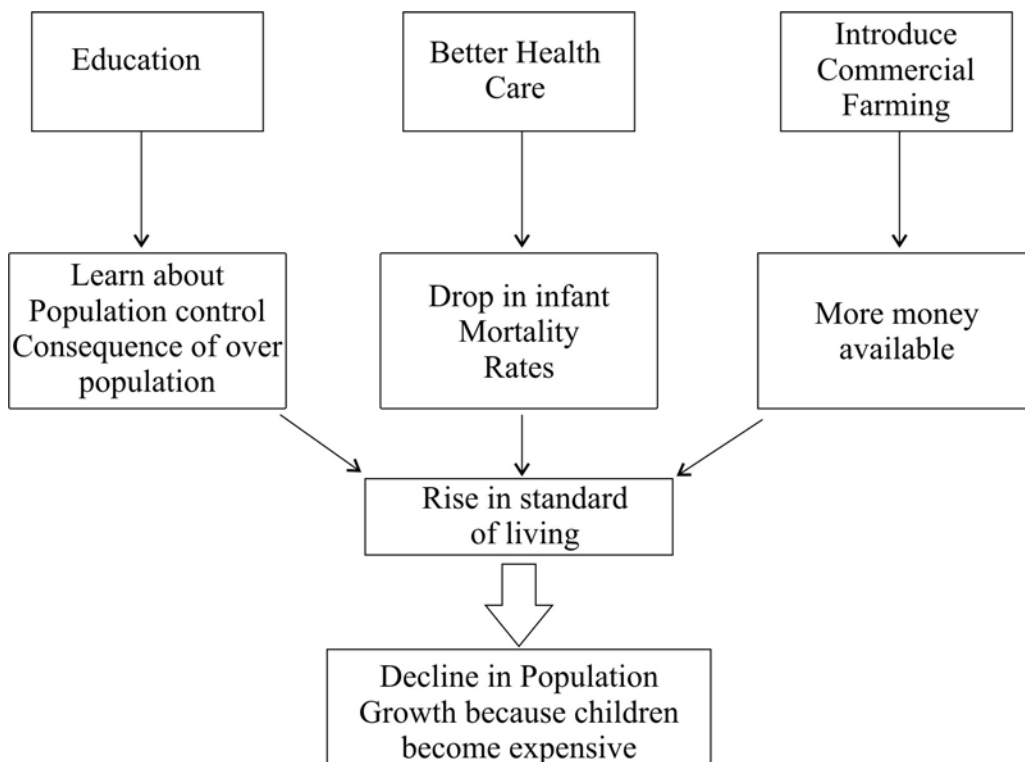
1.3.5



**1.4 Population problems in North-Eastern Pakistan**

Reasons: Low standard of living. Lack of medical facilities. High infant mortality rate thus large families. Also, children provide labour for the farm because farmers cannot afford to hire workers. Children also look after the farmer and his family when the farmer is sick or when the farmer retires because there is no pension scheme. Thus farmers need lots of children to provide them with security. Also, poor levels of education means that the people are unaware of the problems caused by over-population. (lack of knowledge on contraception.)

Tradition probably dictates that the male should produce lots of heirs. Women are poorly educated and cannot go out and find jobs so they have lots of children.



**Rubric to be posted on website in due course.**

**1.5 The world's response to the disaster caused by the Pakistan Earthquake.**

**Rubric to be posted on website in due course.**

(10)

**50 x 2 = 100 marks**

**SECTION B                    PHYSICAL GEOGRAPHY**

**QUESTION 2                    The atmosphere, plate tectonics, faulting, earthquakes and volcanoes and ozone depletion**

**2.1            The atmosphere**

- 2.1.1    A            Stratosphere
- B            Mesosphere
- C            Mesopause
- D            Thermosphere (½ x 4 = 2)

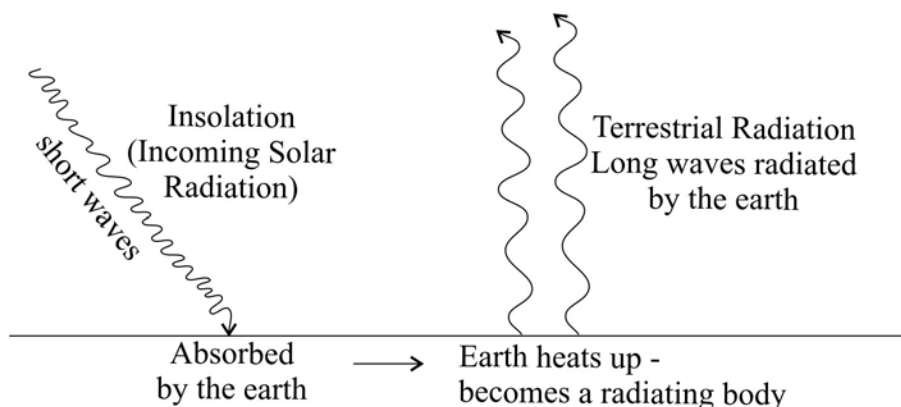
- 2.1.2    (a)            Between -50 and -60 degrees C
- (b)            Between -10 and 0 degrees C (½ x 2 = 1)

2.1.3    A temperature inversion (1)

2.1.4    They discovered that the temperature of the atmosphere changed quite dramatically at different heights. In the Troposphere the temperature dropped to approximately -60°C. It then stayed steady in the Tropopause and then it increased to 0 degrees in the Stratosphere. It then remained steady in the Stratopause and then dropped to about -90° in the Mesosphere. Once again it remained steady in the Mesopause and then increased dramatically in the Thermosphere. (2)

2.1.5    Conduction is the transference of heat energy from one body to another by contact, as shown by the pan which is in contact with the hot plate. Convection is the transference of heat energy by molecules heating up and getting lighter and rising and so spreading the heat, as shown by the movement of water molecules in the diagram. Radiation is the transference of heat energy by waves of radiation, as shown by the waves radiating from the open fire in the diagram. (3)

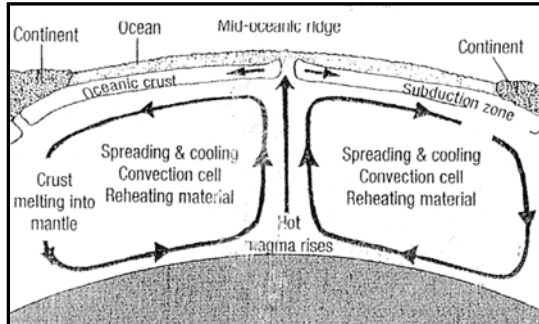
2.1.6



2.1.7 **Rubric to be posted on website in due course.**

**2.2 Plate tectonics, faulting and resultant landforms and volcanism**

2.2.1



Convection currents in the mantle cause tectonic plates to move.

(2)

2.2.2 (a) Two tectonic plates collide and one might slide under the other or they both are subducted into the crust. Because crust is being destroyed this is a destructive margin.

(2)

(b) Here the crust is splitting apart creating two tectonic plates which move away from each other. Magma surges to the surface at the point where the crust splits and new crust is formed, hence a constructive margin.

(2)

2.2.3 Forces of tension, created by convection currents in the crust, result in faults forming in the crust. This results in sections of the crust sinking into the crust leaving rift valleys and block mountains behind. Vertical forces may also force sections of the crust upwards again resulting in block mountains and rift valleys.

(3)

2.2.4 Block mountains

(1)

2.2.5 The forces of tension in the crust, which have caused the rift valleys and block mountains to form, weaken the crust and this reduces the pressure in the crust which results in magma surging to the surface via the faults and other weaknesses in the crust, which results in volcanoes forming. Because the forces, which created the East African Rift Valley, are still widening the rift, volcanoes will continue to develop in this area.

(5)

2.2.6 **Rubric to be posted on website in due course.**

**50 marks**



- 3.3.3 Desertification is the spread of desert-like conditions. (1)
- 3.3.4 Ban the ploughing up of the natural vegetation. Keep stock according to the carrying capacity of the veld. Fence off those areas already affected to allow them to recover. Only allow crop farming on irrigated lands. Use dryland farming techniques to preserve any moisture in the soil. (4)

### 3.4 External forces and rock types

- 3.4.1 Horizontal. The strata are laid down horizontally. (1)
- 3.4.2 Because they form a horizontal cap on the feature known as a mesa. If they were not resistant the cap would have been eroded away. (1)
- 3.4.3 (a) This rock forms deep in the crust and it is molten magma which comes to the surface and solidifies to form Basalt. (2)
- (b) This rock forms from sediments which are deposited on an old sea bed/or from an accumulation of wind-blow sands. The sediments are compacted to form sedimentary rock. (2)
- 3.4.4 Summer: block disintegration and exfoliation as a result of pressure release and alternate heating and cooling of the rock.  
Winter: frost shattering  
All year: oxidation, carbonation, solution, hydrolysis. (6)
- 3.4.5 (a) Landslide/soil creep/talus creep occur at C. (1)
- (b) The resistant rock which makes up the cap of the mesa at A & B is slowly undermined by the less resistant rock, on which the cap rock sits, being weathered away. Eventually, the weight of the overhanging cap rock causes it to break off and fall down the slope. This is known as rockfall. This process may be accentuated by frost shattering. The rocks and soil will move down the talus slope under the influence of gravity. (2)
- 3.4.6 (a) Any FOUR feasible causes, e.g. overgrazing, mono culture, poor ploughing. ( $\frac{1}{2} \times 4 = 2$ )
- (b) Any TWO feasible solutions – crop rotation, contour ploughing. (2)
- 3.4.7 Formation of acid rain; pollution combines with sunlight and rain to form either sulphuric acid or nitric acid, depending on the form of pollution. Acid rain will weather the rocks more rapidly than natural rain and thus it will speed up the weathering and erosion of the mesa.  
Acid rain will inhibit the growth of vegetation and kill existing vegetation. It will also kill any life in lakes and rivers. (6)

**Rubric to be posted on website in due course.**

<b>50 marks</b>
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**SECTION C PEOPLE, PLACES, POPULATION, ORGANISATION**

**QUESTION 4**

**4.1**

- 4.1.1 (a) Transhumance (1)
- (b) Seotla's living conditions are very basic. He lives in a hut in the mountains during summer, in order to be close to his flock of sheep, while they graze. He has no electricity, running water or any form of communication. He spends a lot of time alone, cannot go to school regularly and is lonely. He has only recently learnt how to read and write. (3)
- (c) This is the United Nations Children's Fund (1)  
 This organization puts long-term programmes into place in developing countries, eg. health, education, child welfare and empowerment of women. In Lesotho the programme involves teaching young people literacy skills and AIDS awareness. (2)
- (d) HIV stands for Human Immunodeficiency Virus. This is a virus that weakens the body's immune system, which means that the body cannot defend itself against diseases. AIDS stands for Acquired Immuno Deficiency Syndrome. This is the condition of ill health when one contracts Tuberculosis etc when one's immune system is weakened by HIV. (2)
- (e) Women in remote areas contract AIDS from their 'migrant labourer' husbands when they return from the mines or cities. (2)

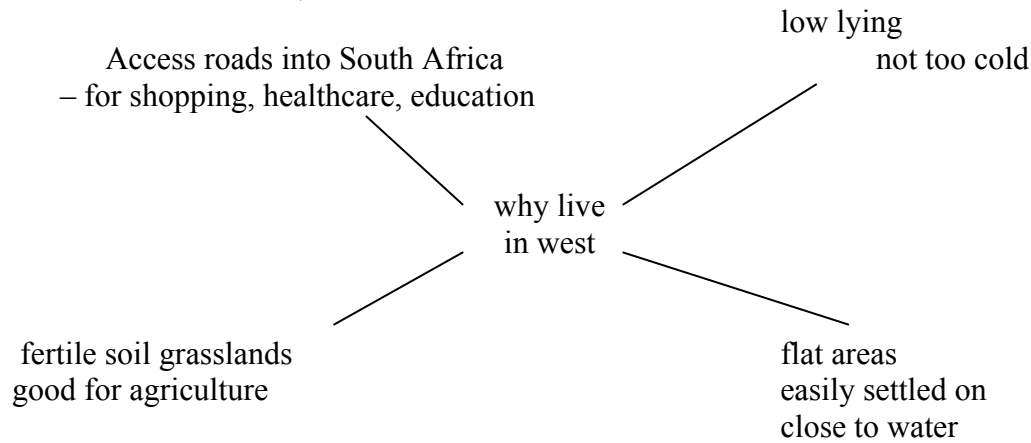
(f)

Impact of HIV – AIDS	
Economy	People
<ul style="list-style-type: none"> <li>• Work-force of economically active people (18 – 40) most affected</li> <li>• Absenteeism from work and low productivity</li> <li>• Money lost, in retraining new staff in the necessary skills, every year.</li> <li>• Care givers cannot work therefore less money for each family</li> </ul>	<ul style="list-style-type: none"> <li>• Life expectancy will be lowered</li> <li>• Growth rate will decrease, as young adults are lost</li> <li>• Increasing number of AIDS orphans</li> <li>• Depression, as families keep losing loved ones.</li> </ul>

any relevant answer acceptable – look for 8 points. (8)

- 4.1.2 There are high numbers of people along the western side of the country. (1)

4.1.3 Close to towns,



(4)

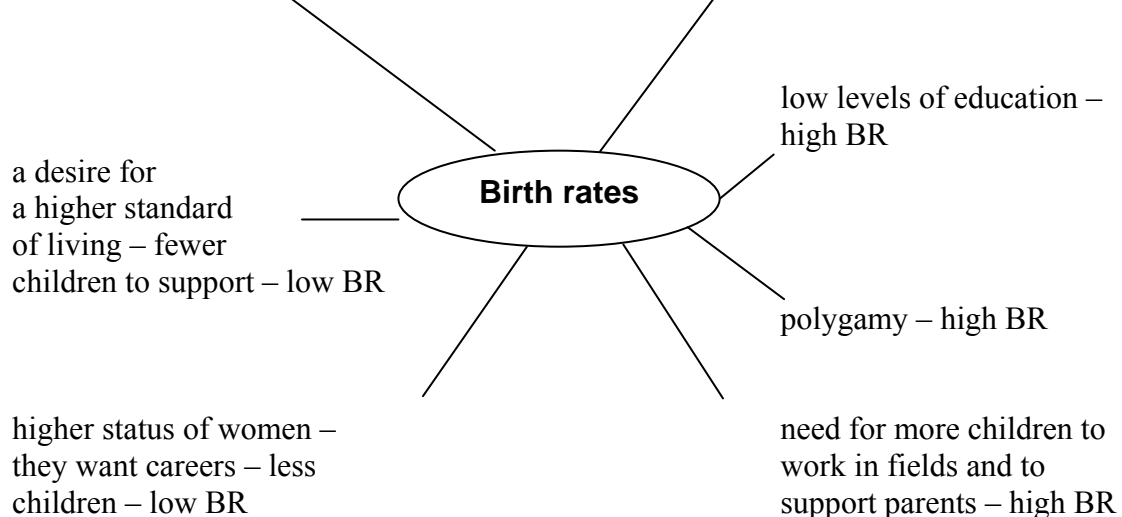
- 4.1.4
- lower life expectancy (55 to 38 years)
  - generally more men in the 20 – 50 years age group as there were jobs created with the Lesotho Highlands Projected, where before the men had left Lesotho to find work on the mines and industry in South Africa.
  - there would be fewer men and women (25 – 45 years) because of AIDS – but remember there would have been few men reflected anyway in the 1991 pyramid, because of migrant labour.

(3)

4.2.1 The population density is calculated by dividing the area by the total population. Both countries have a similar area. The Netherlands has a very high population density 429/km<sup>2</sup> as the population is eight times higher than Lesotho, and the people live on every available space, including on reclaimed areas of land and on barges in the rivers. Lesotho's population density is low – 71/km<sup>2</sup> – as it is mountainous in the east with only very few inhabitants and the rest of the small population (2.3 million) live in the lowlands in the west.

4.2.2 Holland higher urbanization – knowledge and use of contraception – low BR

Lesotho some contraception – high BR



Any relevant answer acceptable look for 6 points.

(6)

- 4.2.3
- Lack of job opportunities (too many people, not enough industries etc).
  - people have not had skills training
  - few natural resources (minerals) to provide jobs in processing.
  - many are subsistence farmers and have no access to small towns.
- (4)

- 4.3.1
- |       |  |     |
|-------|--|-----|
| FAO   | Food and Agriculture Organisation      |     |
| WHO   | The World Health Organisation          |     |
| OXFAM | The Oxford Committee for Famine Relief | (3) |

4.3.2

Benefits of Aid	Problems of Aid
<ul style="list-style-type: none"> <li>● Money received for development programmes, e.g. irrigation schemes – to assist with agriculture</li> <li>● Sponsored education and health programmes for people.</li> </ul>	<ul style="list-style-type: none"> <li>● May get finance specifically for hydro electric power plant – when country does not have many industries that need this much power.</li> <li>● People have no say in what they need.</li> <li>● Developing country has to sell their products cheaply to donor country.</li> </ul>

Look for FOUR relevant points. (4)

- 4.3.3
- Improved roads and infrastructure as they were needed to build the Lesotho Highlands Project.
  - More piped water, as irrigation systems have been built.
  - Electricity being linked to rural areas.
  - Conservationists and agriculturalists from other countries to assist them with sustainability.
  - Condoms!
- (4 x ½ = 2)

<b>50 marks</b>
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**QUESTION 5**

**5.1**

- 5.1.1 (a) Non-government organization. (1)
- (b)
  - Starfish
  - Society for the Prevention of Cruelty to Animals
  - Hospice
  - or relevant others (2)
- 5.1.2 People living in peri-urban and rural communities, who have never had access to water and sanitation. These services are lacking, because during the years of apartheid, the government did not invest money in former homeland areas and in informal settlements in peri-urban areas. Thus there was no piped water, and people had to walk and fetch buckets of water from the nearest stream. (4)
- 5.1.3 (a) The natural resources of the Earth, including the air, water, land flora and fauna, must be safe-guarded for the benefit of the present and future generations, through careful planning and management.
- (b) to be given rights and not be discriminated against, e.g. women to be treated fairly – able to ask for a bank loan and own property. (2)
- 5.1.3 (No longer applicable!)
- Slogan eg. "We will provide the waters for life" (3)
- clean water means healthy children
  - healthy children will grow up into strong adults who will lead our country. (4)
- 5.2.1 Discrimination: Patriarchal traditions and customs allow for women's potential and dignity to be undermined.
- They are mostly excluded from decision-making and are often not considered worthy of receiving an education. They have few legal rights and struggle to receive bank loans.
- Women are often abused and have to endure initiation procedures which are serious violations of human rights. Women mostly stay home to – look after the children, do domestic chores, farm the land and fetch firewood and water. If they work, they are usually paid less than men.
- Impact:
  - Little education – few skills – cannot contribute much to the economy.
  - Many of the women live in isolated communities with little access to contraception – high birth rate.

- 5.2.2 (a) South African Development Community. (2)  
 (b) Co-operation between the countries to ensure economic growth and reduce poverty. (1)  
 (c) South Africa was ruled by an apartheid government – therefore there was no democracy and they were not invited to join SADC. (1)  
 (d) Suggestion: woman have pushed for equal rights and empowerment – men are threatened and use their physical strength to belittle and abuse women. (2)

Advantage: less children to support, family more financially secure.

Disadvantage: desire for a boy, led to many girl babies being killed

Gender numbers unbalanced in years to come. (2)

5.3.2 (a) symmetrical (1)

- (b) (a) 23% (d) 13.2%  
 (b) 3.5% (e) 4.2%  
 (c) 2% (f) 0,7% (6 x ½ = 3)

(Be flexible – LO1 skill being assessed)

5.3.3

<b>A</b>	<b>B</b>
<ul style="list-style-type: none"> <li>• Progressive pyramid</li> <li>• Large youthful component under 15 years (34%)</li> <li>• More females generally</li> <li>• Females live longer</li> </ul>	<ul style="list-style-type: none"> <li>• Regressive – Bell shaped</li> <li>• Small youthful component and decreasing (21%)</li> <li>• Largest age group (15 – 20 years)</li> <li>• Less females under 20 years evidence one child policy and preference for males</li> </ul>

Any relevant answer – look for 4 points (4)

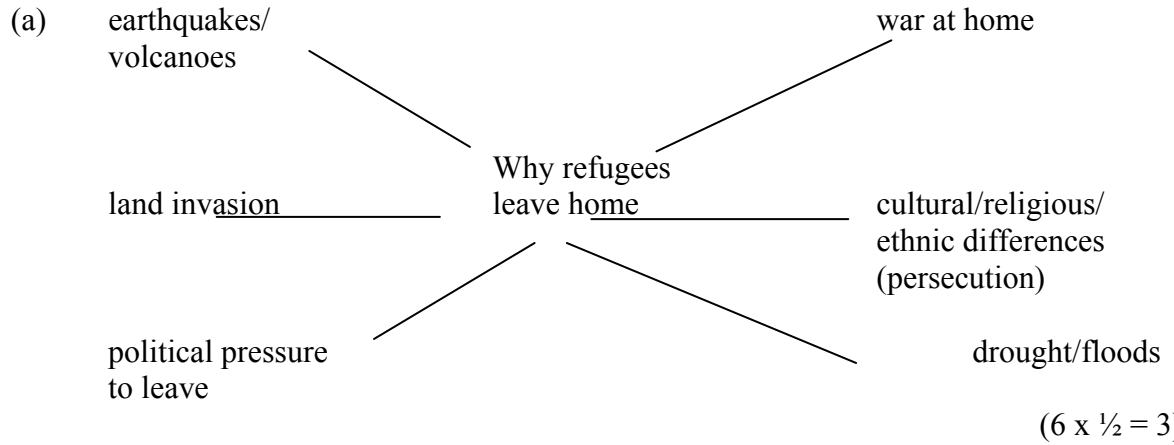
- 5.4.1 A DRC/Democratic Republic of Congo C Angola  
 B Tanzania D Zambia (4 x ½ = 2)

5.4.2

Pop Mov	Name of movement	Push Factor	Pull Factor	Potential difficulties
1	Migrant labour	No jobs	Stable income	Too many migrant labourers arrive in the city, they cannot all find jobs
2	Emigration	Crime in SA	Safe environment	Very expensive to emigrate, people miss their families
3	Rural-Urban migration	Poverty drought	Possibility of jobs and regular income	Insufficient low cost housing, no skills to find a job

(12 x ½ = 6)

5.4.3



- (b)
- Emotional trauma – leaving friends and family behind, and not finding friends because of prejudice and intolerance.
  - Very vulnerable – perhaps not knowing the language – could be tricked into situations which could be physically dangerous.
  - other relevant problems.

(4 x ½ = 2)

**50 marks**