24.8 GEOGRAPHY

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24.8.1 Geography Paper 1 (312/1)

1. (a) It causes the occurrence of day and night. It leads to the rising and falling of tides/high and low tides. It causes differences in time over the earth's surface/time difference at different longitudes. It causes deflation of winds and ocean currents. (Any 2x 1 = 2 marks)(b) Revolution. (i) (1 mark) (ii) It causes seasons. It causes changes in the position of the mid-day sun. It causes varying lengths of days and nights at different times of the year. $(Any 2 \times 1 = 2 marks)$ 2. (a) Arcuate. Bird's Foot. Estuarine. Cuspate. $(Any 2 \times 1 = 2 marks)$ (b) Presence of large load/ample supply of silt. Absence of strong waves or currents in the sea/lake. Decrease in the velocity/speed of a river. Presence of gentle gradient. $(Any 2 \times 1 = 2 \quad marks)$ 3 (i) The feature marked X: Horn. (a) (1 mark) (ii) The air current marked Y: Eddy current. (1 mark) (iii) The slope marked Z: Concave/slip face. (1 mark) (b) By suspension. By saltation. By surface creep. $(Any 2 \times 1 = 2 marks)$ 4. (a) (i) (1 mark) Atmosphere. Barysphere. (1 mark) Moho Discontinuity. (1 mark) (b) It is divided into two parts namely the upper mantle and the lower mantle. The upper mantle has lower temperatures than the lower mantle. The upper mantle is an elastic solid/semi-molten. The lower mantle is viscous liquid. On average the mantle is about 2,900 km thick. The mantle has an average density of 3.0 to 3.3 gms/cc. (Any 3x 1 = 3 marks)5. (a) Lateral/horizontal/orogenic movement. Vertical/epeirogenic movement. (2 marks) (b) The earth was originally one huge land mass/pangea/super continent Pangea was surrounded by a large super water body/sea called panthalassa.

- Pangea split into two sub-continents to form two other land masses called Laurasia and Gondwanaland.
- The two landmasses were separated by a sea called Tethys.
- Further split occurred on the two landmasses.
- Laurasia broke to form the continents in the northern hemisphere.
- Gondwanaland formed the continents in the southern hemisphere.
- The continents gradually drifted to their present position. (Any $3 \times 1 = 3$ marks)
- 6. (a) (i) 134° (133° 135°). (2 marks) (ii) 14 km (13.9 14.1 km). (2 marks)

(b)

Mgange Hills

Note:

All weather road bound surface

Forest

Hill

(c) (6 marks)

Rock outcrop

- The area receives low rainfall as evidenced by the presence of scrub vegetation.
 Low rainfall discourages growing of other cash crops.
- The area is sparsely populated as evidenced by scattered settlements especially to the eastern side from the Estate. This may have encouraged the establishment of the estate due to availability of land.
- The dense settlement near Mwatunge hill provides labour required in the Sisal Estate.
- The road and the railway line which pass close to the Sisal Estate provide transport for the sisal.
- The gently sloping land as evidenced by the widely spaced contours is ideal for establishing a large scale farm.

 (Any 3 x 2 = 6 marks)

(d) (i) There are more settlements in the mid-western part of the map than in the other parts. There are clusters of settlements at shopping centres/markets. Gently sloping areas with scrub vegetation have few settlements. Escarpments/steep slopes/ridges have few or no settlements. There are many settlements along the roads and motorable tracks. There are few settlements along the rivers. Forested areas have no settlements. The Sisal Estate has no settlements. (Any 5 x 1 = 5 marks)(ii) Economic activity Evidence Shops/markets/Prison/Bank. Trading/commerce Roads/railway/main tracks. Transportation Cattle dips/scrub vegetation. Cattle keeping Ministry of Agriculture office. Crop farming $(Any 2 \times 2 = 4 \text{ marks})$ 7. (a) Colour: Different minerals display different colours, for example: minerals that (i) (2 marks) have iron have dark colours. Cleavage: Minerals have patterns in which they break. Some minerals break (ii) into thin layers while others break along layers. (2 marks) Hardness: This is the measure of resistance of a mineral to disintegration. Some (iii) minerals such as diamond have a high resistance while others such as talc are soft. (2 marks) (b) (i) Intrusive rocks/ plutonic rocks. Extrusive rocks/ volcanic rocks. (Any 2x 1 = 2 marks)Hypabyssal rocks/ intermediate rocks. (ii) They require warm water/20-30°C in order to live. They require well oxygenated water for them to grow fast. They require water that is free from sediments because silt interferes with their ability to gather food. They require enough light in the water for the growth of plankton which is the food for polyps. They require saline water from which the polyps extract lime to construct $(Any 3 \times 2 = 6 \text{ marks})$ their skeletons. (c) Rocks weather down to form soil which supports agriculture. Rocks are water reservoirs. Rocks provide raw materials for the building and construction industry. Rocks are sources of minerals. Some rocks act as Tourist attraction. Some rocks are used in sculpturing/carving industry to make ornaments. Study of rocks provides information about the past. $(Any 4 \times 1 = 4 \text{ marks})$ (d) (i) Text books. Magazines. Class notes. Internet/information recorded on CDs. $(Any 2 \times 1 = 2 marks)$ (ii) (1 mark) A fork jembe: for digging up the rocks. (1 mark) A polythene bag: for carrying rock samples.

(iii)

- Marble: Metamorphic rock.
- Sandstone: Sendimentary rock.
- Granite: Igneous rock.

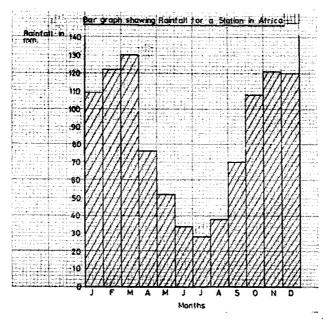
(3 marks)

8. (a) (i) It is the average weather conditions of a place for a long period of time. (2 marks)

(ii)

- Global warming/increased temperature may lead to increased evaporation of ocean water which may cause heavy rainfall in some areas.
- Increased temperature may lead to the melting of ice caps/ice sheets and glaciers leading to rising sea level.
- Increased temperature may lead to high evaporation causing drought.
- Climate change may cause changes in rainfall patterns in different parts of the world.
 (Any 2 x 2 = 4 marks)

(b) (i)



(5 marks)

(ii)

- There is rain throughout the year/no dry month.
- The highest rainfall is received during the hot months/from October to March/ the lowest rainfall occurs during the coolest months/April to September.
- The wettest month is March with 130mm. The driest month is July with 28mm
- The total annual rainfall is 1008mm.

(Any 2x 2 = 4 marks)

(iii) 24 + 24 - - - 248 + 12 = 20.66°C

(2 marks)

(c) (i)

The hygrometer

- Taking the readings on the wet bulb thermometer.
- Taking the readings on the dry bulb thermometer.
- Working out the difference between the two readings.
- Interpreting the readings.

(Any 3x 1 = 3 marks)

The rain gauge

Remove the water collecting jar from the metal holder.

- Pour the water into the measuring cylinder.
- Take the readings on the measuring cylinder.
- Interpret the readings.

(Any 3x 1 = 3 marks)

(ii)

- It can be used for making weather charts.
- The data can be used to plan for school activities.
- It can be used to plan for agricultural activities.
- It can be kept as a school record for future reference.
- It can be used to determine the type of uniform for the students.

(Any 2x 1 = 2 marks)

9. (a)

- Crustal warping.
- Volcanic activity.
- Erosion.
- Deposition.
- Human/organic activity.

(Any $3 \times 1 = 3$ marks)

(b) (i)

- Earth movements led to crustal down warping.
- A shallow depression was created.
- The areas around the depression underwent uplifting.
- The uplifting reversed the direction of rivers such as R. Kagera.
- Water from the rivers and from rain eventually filled the depression.
 - The resulting feature became a lake.

(Any 4x 1 = 4 marks)

(ii)

- Evaporation from the Lake increases moisture in the atmosphere. This
 moisture condenses to form conventional rainfall.
- Evaporation from the Lake leads to high relative humidity in the area.
- The Lake encourages formation of lake breezes which have a cooling effect on the shores of the Lake.
- Regular land and lake breezes modify the temperatures, keeping the diurnal range low.
 (Any 3 x 2 = 6 marks)

(c) (i)

- Lake Nakuru.
- Lake Elmentaita.
- Lake Bogoria.

(Any 2x 1 = 2 marks)

(ii)

- The Lake lacks an outlet to the sea, thus mineral salts accumulate in its water.
- Presence of salt-bearing rocks on the lake bed leads to mineral salts dissolving in the water in the lake.
- The high temperatures in the area lead to high evaporation from the lake resulting in high concentration of mineral salts in the water.
- Mineral salts are deposited into the lake by surface run-off increasing the concentration of salts in the water.
- Underground seepage of the water that is rich in mineral salts adds to the salt in the lake.

 (Any $3 \times 2 = 6$ marks)

(d)

- Lakes are scenic sites which promote tourism/recreation.
- They provide water for irrigation/domestic use/industrial use.
- They are reservoirs for water used for generating HEP.
- They are used for transport.
- They are used as fisheries.
- Some lakes have sand that is harvested for building and construction.

(Any 4x 1 = 4 marks)

- 10. (a) (i) Weathering is the breaking down and decomposition of rocks at or near the earth's surface by physical or chemical processes while Mass Wasting is the displacement or movement of weathered materials downslope under the influence of gravity. (2 marks)
 - (ii) Nature of the rock.
 - Climate.
 - Human activities/animals.
 - Time.

 $(Any 3 \times 1 = 3 marks)$

(iii)

- As plants grow, their roots penetrate into rock cracks/joints causing them to widen and eventually the rock disintegrates.
- Plants absorb minerals from rocks and this weakens the rocks causing them to disintegrate.
- As plants rot on rocks, they release organic acids which then react with some minerals in the rocks leading to disintegration of the rocks.

(Any 2x 2 = 4 marks)

(b) (i)

- Earth flows.
- Mud flows.
- Land slides.
- Rainwash/downwash.

 $(Any 2 \times 1 = 2 marks)$

(ii)

- Temperature change causes soil particles to expand and contract, hence they shift position downslope. Moisture/ rainwater causes soils to become wet and compact. On drying, the particles loosen and may shift from the original position down the slope.
- Human activities and the action of barrowing animals may cause the removal of soil on the lower part of a slope. This has a trigger effect on soil particles on the upper part of a slope which may then shift downslope.
- Freezing of soil water expands the spaces between soil particles. Once the water thaws, the particles fall by gravity and may shift position downslope.
- Moisture acts as lubricant to soil particles causing their movement downslope.
- External forces such as moving vehicles and earth tremors have a trigger effect which causes downward movement of soil particles.

(Any 3x 2 = 6 marks)

(c)

- Mass wasting leads to formation of derelict land. As a result scars are left on the landscape when rock materials break away from a hillside. This spoils the beauty of the land.
- As the materials move over the land they facilitate the loosening of the top soil thus increasing soil erosion.
- Materials from a landslide may create a barrier across a river valley thus leading to eventual formation of a lake.
- Landslides may cause rivers to change their causes reducing the volume of water downstream.
- Mass movement/landslides causes damage to property when materials cover structures such as roads, farms or homes. This obstructs normal life.
- Some form of mass movement lead to loss of life when people/animals are buried under large quantities of rock waste.
- Mass movement may create sceneries that may become tourist attractions.

(Any 4x 2 = 8 marks)

24.8.2 Geography Paper 2 (312/2)

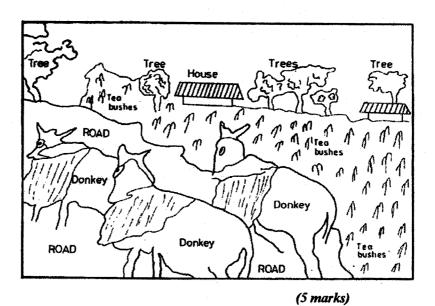
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(a)
                      Friesian.
                      Ayrshire.
                      Guernsey.
                      Jersey.
                      Alderney.
                      Brown swiss.
                                                                                  (Any 2 \times 1 = 2 marks)
                      Holstein.
        (b)
                      The landscape is gently sloping which is suitable for grazing.
                      The climate has warm and sunny summers that allow outdoor grazing.
                      There is cool climate suitable for pasture growing.
                      The moderate rainfall that supports growth of grass/fodder crops.
                      Soils are fertile to support high quality pasture.
                                                                                  (Any 3x 1 = 3 marks)
2.
         (a)
                      High temperatures throughout the year/23°C to 30°C.
                      High rainfall that is evenly distributed throughout the year (1500 to 2100mm).
                      High relative humidity of 80% to 90%.
                                                                                   (Any 2 \times 1 = 2 marks)
                      Plenty of sunshine during the ripening season.
         (b)
                       Competition from other vegetable oils.
                       Poor transport network.
                       Production of low quality oil.
                       Reduced production which has lowered the amount of oil exported
                                                                                   (Any 2 \times 1 = 2 \text{ marks})
3.
                                                                                   (1 mark)
                           8,800,000 barrels.
                  (i)
         (a)
                                                                                   (1 mark)
                           21,150,000 barrels.
                  (ii)
                            2,550,000 \div 30 = 85,000 barrels.
                                                                                   (1 mark)
                  (iii)
         (b)
                       Deposit of remains of flora and fauna over a long period of time.
                       Presence of non-porous rocks underneath the deposits of the flora and fauna.
                       Deposit of other layers of rocks over the remains of flora and fauna.
                       Compression of the remains of flora and fauna due to folding of the layers of rocks.
                                                                                   (Any 3 \times 1 = 3 \text{ marks})
4.
         (a)
                                                                                   (1 mark)
                   (i) The port marked P. Quebec.
                   (ii) The canal marked Q: New York State Barge Canal/ Erie Canal.
                                                                                   (1 mark)
                                                                                   (1 mark)
                  (iii) The lake marked R: Lake Ontario.
          (b)
                       It has increased internal and external trade.
                       It has facilitated the transportation of raw materials and finished products.
                       It has reduced the cost of transportation of bulky products.
                        The dams along the sea way provide HEP for industrial use.
                        It has led to the development of lake ports and towns which provide
                        market/labour/housing facilities.
                        The reservoirs provide water for industrial use.
                                                                                    (Any 3 \times 1 = 3 marks)
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- 5. (a)
- Natural calamities.
- Low nutritional standards/famine.
- Conflicts.
- Other epidemics/diseases.
- Inadequate medical facilities.

 $(Any 2 \times 1 = 2 marks)$

- (b)
- The sickness leads to absenteeism from work.
- Money spent in treating the sick could be used for other economic activities.
- Deaths resulting from the disease lead to loss of economically productive population.
- Care-takers at family level use more time caring for the sick/orphans instead of engaging in economic activities.

 (Any 2x 1 = 2 marks)
- 6. (a) (i)
- It does not focus on a particular object.
- The objects become progressively smaller towards the background.
- It captures the general appearance of the area. (Any $2 \times 1 = 2$ marks)
- (ii)



(iii)

- The type of houses.
- The mode of transport.

(2 marks)

- (b)
- The land is cleared of vegetation.
- Land is ploughed/ tilled.
- Seedlings are planted in nursery and allowed to grow to 20 cm.
- Seedlings are transplanted on to the cleared land at the beginning of the rainy season.
- Seedlings are planted in rows, which are about 1.5 metres apart.
- The plants are weeded and manure applied regularly.
- Once the bushes start growing, the tips of their branches are pruned regularly to encourage the plant to form more branches.
- The crop is harvested every two weeks once it attains maturity.
- After harvesting, the green tea leaves are transported to the factory within 24 hours.

 $(Any 6 \times 1 = 6 \text{ marks})$

- (c) (i)
- Embu.
- Meru North.
- Meru South.
- Meru Central.

(Any 2x 1 = 2 marks)

(ii)

- It establishes tea nurseries from where tea farmers buy tea seedlings.
- It organizes farmer education days/provides extension services for the farmers to learn new ideas about tea growing.
- It buys farm inputs in bulk and sells to the farmers at low prices.
- It provides credit facilities to the farmers to enable them purchase farm inputs.
- It collects the green tea leaves and delivers to the factory on behalf of the farmers.
- It establishes factories where the green tea leaves are processed.
- It undertakes the marketing of tea on behalf of the farmers.

 $(Any 4 \times 2 = 8 \text{ marks})$

7. (a)

- Tea processing.
- Coffee processing.
- Milk processing.
- Sugar refining.
- Fruit canning.
- Brewing.
- Bakeries.
- Meat canning.

 $(Any 3 \times 1 = 3 marks)$

(b) (i) Proximity to Nairobi

- Nairobi provides some inputs required by the industries in Thika.
- There is industrial interdependence among the industries in Nairobi and Thika.
- The rail and road connection between Nairobi and Thika provides easy movement of goods and services for the industries in Thika.

 $(Any 1 \times 2 = 2 \text{ marks})$

(ii) Availability of water

- River Chania which passes through Thika town provides fresh water for industrial use especially for the coffee processing and fruit canning industries.
- Water for use in the industries is available throughout the year since river Chania is permanent.

 (Any $1 \times 2 = 2$ marks)

(iii) The hinterland

- Thika town has a rich agricultural hinterland which provides raw materials for the industries.
- The hinterland is densely populated hence provides cheap labour for the industries.

 (Any $1 \times 2 = 2 \text{ mark}$)

(c)

- Kenya exports industrial goods, thus earning foreign exchange which is then used to develop other sectors of the economy.
- It has created employment opportunities hence raising the standard of living of the people.
- It has led to the development of transport and communication networks thus facilitating the development of other sectors of the economy.
- It has facilitated the establishment of social amenities in the areas where industries are located.
- It has led to increased agricultural production since some industries use agricultural raw materials.
- It has led to the acquisition of management and technical skills which are also used in other sectors of the economy.

- It has led to the diversification of the economy thus reducing reliance on the agricultural sector.
- It has led to the improvement in the balance of trade since there is added value to the export products.
- It has led to the reduction of the importation of some industrial goods thus saving foreign exchange.
- It has led to the growth and expansion of settlements and urban centres as labour
 - migrates to the industrial centres. (Any $4 \times 2 = 8$ marks)

(d) (i)

- Nairobi.
- Mombasa.
- Thika.

 $(Any 2 \times 1 = 2 marks)$

(ii)

- The country has adequate capital to invest in the industry.
- Advanced technology and research has led to efficient methods of production of high quality cars which are competitive in the world market.
- Japan produces fuel-saving vehicles leading to a high demand for them in the world market.
- Japan has a highly skilled and industrious work force which enhances efficiency in production.
- Japan has many sea ports which makes the importation of raw materials and exportation of cars possible.
- The government policy/peace and stability has encouraged Industrialization which has led to rapid development of industries.
- Japan has highly developed hydro-electric power projects which provide power needed for the industries.
- The presence of a large population with a high purchasing power provides a large local market for the cars.
- Japan's terrain is not suitable for development of agriculture and thus industries provide an alternative source of income to be used for buying food and other requirements.
- The strategic position of Japan in relation to other countries encourages trade thus promoting production of vehicles/Japan is accessible from all directions through the sea.

 (Any 3 x 2 = 6 marks)
- 8. (a) (i) It is the science of planting, caring and using trees/forests and their associated resources. (2 marks)
 - The area receives heavy rainfall/over 1000mm throughout the year, which encourages growth of trees.
 - The area has deep fertile volcanic soils that allow the roots to penetrate deep into the ground to support the trees.
 - The area has well drained soils thus there is no water logging which can choke plants and interfere with their growth.
 - The area has moderate to cool temperatures which are ideal for the growth of a variety of trees.
 - The area is a gazetted forest reserve hence settlement and cultivation are prohibited.
 - The steep slopes discourage human activities thus enabling forests to thrive.

(Any $3 \times 2 = 6 \text{ marks}$)

(iii)

(ii)

- The government policy of degazettement has allowed encroachment of human activities.
- Increased population of elephants that destroy the trees.
- Illegal cultivation has led to clearing of parts of the forests.

- Prolonged droughts have caused drying of some trees.
- Plant diseases and pests which destroy some trees in the forest.
- Outbreak of forest fires destroy parts of the forest/charcoal burning.
- Over exploitation of certain species of trees. (Any $5 \times 1 = 5$ marks)

(b)

- Registering/recognizing the efforts of NGOs like the Green Belt Movement which have mounted campaigns on planting of trees.
- Gazetting forested areas to reduce encroachment by the public.
- Creating public awareness through mass media/public barazas on the importance of conserving forest resources.
- Enacting laws to prohibit the cutting of trees without a licence/protecting indigenous tree species.
- Establishing NEMA/Ministry of Environment and Natural Resources to co-ordinate Environmental management and conservation activities.
- Setting aside national tree-planting day to encourage people to plant more trees.
- Advising people to practice agro-forestry so as to avoid cutting trees from the forests.
- Employing forest guards to protect forests from fires and other illegal human activities.
- Encouraging re-cycling of paper and other wood-based products so as to reduce demand on trees.
- Carrying out research through KEFRI and ICRAF in order to come up with ways of controlling diseases and pests/develop species suitable for different ecological regions.
 (Any 1x 2 = 8 marks)

(c)

	Kenya	Canada
(i) Period of	Harvested throughout the year.	Harvested in winter and early
harvesting		spring.
(ii)Transportation	Mainly road transport.	Mainly water transport.

(4 marks)

9 (a) (i)

- Nairobi/ Jomo Kenyatta airport.
- Mombasa/ Moi International airport.
- Eldoret International airport. (3 marks)

(ii)

- Air transport is faster.
- It is better in transporting perishable goods.
- It does not experience traffic congestion.
- Helicopters can land in remote areas.
- Planes can be used for activities like spraying of farms.
- There are fewer accidents in air transport. (Any $4 \times 1 = 4$ marks)

(b)

- Construction of by-passes to reduce congestion in the large towns.
- Construction of highways/dual-carriage ways to accommodate more traffic/improve traffic flow
- Repair/maintain the roads in good state to reduce road accidents.
- Educate road users on road safety precautions/ discipline on roads to ease traffic on roads.
- Control the amount of load carried by large lorries and trucks to reduce damage on road surfaces.
- Enforce traffic rules to regulate traffic flow.
- Provide paths for cyclists and pedestrians to reduce congestion on roads/ improve road safety.
 (Any 4 x 2 = 8 marks)

- (c)
- Most of the existing rail lines were constructed by the colonialists who had no interest in linking the colonies.
- The rail lines are of different gauges making it difficult for the countries to link them.
- Political differences/political instability discourages attempts to link the lines.
- Inadequate capital limits the construction of new lines and maintenance of railways.
- Large areas of the continents are economically unproductive thus it would be uneconomical to link them by railway.
- Difficult terrain/thick forests makes it expensive to construct rail lines.
- Limited trade links due to production of similar commodities does not justify construction of rail lines.

 (Any $3 \times 2 = 6$ marks)

(d)

- Some rivers have rapids/water falls/cataracts.
- Some rivers have seasonal regime/varying volume.
- Some rivers have shallow water/silted river mouths.
- Some have floating vegetation that choke the courses.
- Some rivers have narrow channels unsuitable for sailing vessels.

(Any 4x 1 = 4 marks)

10. (a) (i)

- Oil leaks from ships/ trucks.
- Industrial effluents when discharged into rivers/lakes.
- Washing away (into rivers and lakes) chemicals/ fertilizers/ pesticides/ insecticides.
- Dumping of solid waste into water courses.
- Washing/bathing/watering animals in rivers/lakes.
- Disposing of raw sewerage into rivers/lakes. (Any $2 \times 1 = 2$ marks)

(ii)

- If may cause death of aquatic life.
- It destroys beaches.
- It leads to spread of water-borne diseases.

 $(Any 2 \times 1 = 2 marks)$

(b)

- Dykes are constructed on raised banks/levees of rivers to increase their height in order to prevent water from overflowing.
- Dredging of river channels to deepen and widen them to make it possible for them to accommodate excess water.
- Dams are built across the rivers to control the amount of water discharged downstream.
- Training/re-directing a river/Straightening of a river to control its wild flow.
- Planting of trees in the catchment area to reduce surface run off and increase infiltration.
- Diverting tributaries to other rivers to reduce the volume of the main river.

(Any 4x 2 = 8 marks)

- (c) (i) Contour farming: It helps to trap water, thus preventing the formation of gullies and removal of top soil from a slope. (2 marks)
 - (iii) **Mulching:** The mulch adds humus in the soil as it decomposes thus enriching the soil. It enhances the retention of water in the soil by preventing it from direct sunlight/ wind. It increases the rate of infiltration by holding the rain water and releasing it gradually. It controls/stops run-off/speed of surface run-off by acting as a cover to the soil. (Any 1 x 2 = 2 marks)
 - (iii) Crop rotation: Since different crops utilize different minerals, rotation helps in balancing/replacing the mineral content in the soil. (2 marks)

- (d) (i) To get permission from the relevant authority
 - To be able to formulate the objectives.
 - To familiarize with the area of study.
 - To be able to prepare a working schedule/decide on the appropriate methods of data collection.
 - To determine the respondents/resource persons. (Any $3 \times 1 = 3$ marks)

(ii)

- Interviewing.
- Taking photographs.
- Observation.
- Measuring the extent of polluted area.
- Administering questionnaires.
- Tape recording.

(Any 2x 1 = 2 marks)

(iii)

- Analysing the data.
- Writing a report.
- Giving relevant advice to the stake holders. (Any $2 \times 1 = 2$ marks)