

## MINING

1. Conditions that are necessary for the formation of petroleum.
  - Presence/deposition of remains of flora and fauna fossils over a long period of time.
  - Presence of non porous rocks underneath the deposits of flora and fauna
  - Deposition of other layers of rocks/ non -porous rocks over the remains of flora and fauna.
  - Compression of remain of flora and fauna due to folding of the layer of rocks.
2. (a) (i) Minerals mined in area marked

W	-	Fluorspar
X	-	Gold
Y	-	Diamonds
Z	-	Copper

  - (ii)
    - Alluvial mining
    - Underground mining
    - Open-cast mining
  - (iii) Sea ports through which some minerals mined in East Africa are expected through. -Mombasa, Dar-es-Saalam.
- (b) Factors that influence exploitation of minerals.
  - Modes of occurrence
  - Economic value of the mineral/quality of the minerals/cost of mining.
  - Size of the mineral
  - Level of technology
  - Availability of capital

- Labour supply
- Availability of transport facilities
- Government policy/political influence
- Availability of market

(c) Significance of soda-ash mining

- Creation of employment opportunities.
- Development of infrastructure.
- Development of related industries.
- Improvement of social facilities.
- Earns Kenya foreign exchange.

(d) • Planted trees

- Creating a park to attract tourists
- Introducing aqua culture
- Landscaping for settlement /farming
- Refilling

3.

(a)

- Gas
- Oil\petroleum
- Water

(b)

- Wax
- Bitumen\pitch\asphalt
- Grease lubricants
- Resin\petrol-chemicals

4. Use the map of Africa below to answer the questions below.

(a) Name the minerals mined in the areas marked S, T and V.

S - Oil/Petroleum

T - Bauxite/Gold

V - Diamond

(b) State two formations in which mineral ores occur.

- Some minerals occur as evaporates.
- Others occur as veins/lodes.
- Some minerals occur as alluvial deposits.
- Some occur as weathered products.
- Some minerals are found in seam

(c) Explain four problems which Zambia experiences in the exportation of copper.

- Zambia is landlocked/ has no coastline hence copper has to pass through other countries to reach the seaport.
- The distance from Zambia to the coast is long which makes transportation of copper expensive.
- Political instability in the neighbouring countries makes it insecure to transport copper through them to the coast
- Congestion at the seaports causes delays in loading and off-loading of copper
- Loss of copper through theft while on transit deprives Zambia of the part of the expected revenue.
- Copper is bulky thus it can only be transported by rail which is slow.

(d) • Describe three negative effects of open cast mining on the environment

- The land is left with gaping quarries which are ugly interfere with the natural beauty of the landscape.

- The heaps of rock waste hinder any other forms of land use/create a landscape that is expensive to rehabilitate/barren landscape.
  - The dust produced during the mining pollutes the atmosphere/is a health hazard.
  - Open cast mining causes shortage of land as it hinders settlement/leads to displacement/hinders agriculture.
  - Large scale blasting of rocks leads to instability of the basement rocks.
  - Water collects in the hollows left by open cast mines creating ponds which become habitats for disease causing organisms
  - It interferes with the natural vegetation which is cleared before extraction of the mineral begins/takes time to regenerate.
5. (a) • A vertical shaft is dug to reach the mineral Tunnels are then dug horizontally.
- The roof of the tunnel must be supported to prevent it from collapsing.
  - The mineral is then removed by blasting using explosives.
  - Its then brought to the surface using a lift.
  - The mineral is then transported to the factory for processing.
- (b) • It is an expensive method
- Accidents due to collapsing of mines.
6. (a) • Ugliness of the land.
- The open pits are health hazards once filled with water.
  - The land losses productivity.
  - Accidents are likely to occur especially children falling into pits.
7. • It involves digging out sand from river beats and swirling it around with water in a shallow pan.

- This pan is tilted such that lighter sand is washed over leaving the mineral behind.
- 8.
- Water shortage for power supply and processing
  - Labour shortage
  - Increased depth of mines
  - Increased cost of mining
  - Decreasing availability of ore
- 9.
- (a)
- It earns the country foreign exchange
  - It generate jobs to Kenyans
  - Leads to uplifting of living standards
  - Development of settlements e.g. Magadi town.
  - Development of transport system
- (b)
- Causes scenery ugliness
  - Pollution of dust, noise and overburden
  - Dereliction of land
  - Loss of land productivity which can lead to desertification.
- 10.
- (a)
- It involves mixing the alluvial deposits with water in a container.  
The mixture is rotated until light particles (sand, mud) are washed off
  - Leaving minerals particles such as gold behind. This is called panning,
- (b)
- Three mining methods
- Open-cast mining
  - Underground mining
  - Alluvial mining
- 11.
- Occurrence It forms when rain water seeps down through volcanic

rocks which contain soda ash. The water is heated by underground hot rocks. This forces the water to move upwards into Lake Magadi.

Exploitation Its extracted using the dredger which floats on the lake. Pumps the mixture of trona and water to the factory on the shores through a pipeline. At the factory impurities are removed. This is heated and turned to soda ash ready for packaging and export.

- 12.
- Earns foreign exchange
  - Generates employment opportunities
  - Development of settlements
  - Lead to development of industry
  - Earning higher income hence better living standards.
  - Land dereliction
  - Pollution
  - Loss of biodiversity
  - Soil degradation
  - Enhancing mass wasting

13. **Gold** is found in quartz or redistributed sediments. Gold is extracted using the deep shaft method. Gold ore is crushed, dissolved and then precipitated to obtain the gold. Gold is used in making of jewellery and ornaments, in chemical industries, in density and for medals. Gold earns export revenue, has led to infrastructure development and provide employment. Rising costs of production, high labour costs and low quality gold are some of problems facing gold mining.

**Diamonds** are associated with volcanic activities. They occur in igneous rocks in pipes. The ore is blasted crushed and washed. It is then passed through filtering screen and then through a special solution. Diamonds are used in the jewellery industry, for polishing, for drilling, and for cutting instruments. Diamonds; earn foreign exchange, have led to development of towns, have created employment and contributed to development of infrastructure. The problems facing diamond mining to include exhaustion, unstable world market prices, high costs of processing and inadequate labour.

- 14.
- Uses of soda ash
  - Glass manufacture
  - Paper making
  - In oil refinery
  - In textile industry
  - In soap manufacture