**MINING INDUSTRY IN UGANDA**

Mining is the extraction of mineral resources from the lithosphere in their primary form as well as processing them into the usable form / degree.

While minerals are substances which are both metallic and non - metallic those occur naturally in rocks and in the ground and have their own characteristics, appearance and chemical composition.

**Status of mining**

* There is a wide spread exploitation of sand and clay
* Commercial mining is done by foreigners
* Mining of petroleum is still infant stage around lake Albert in Buliisa
* Vermiculite and gold are the leading exported minerals by value
* Most minerals are exported in their raw form
* Recycling of cobalt at kasese has stopped
* Mining of copper has been privatized in 2013 to a Chinese company known as Tibet
* Mining in Uganda is not well developed
* Large scale commercial mining is limited.

**THE DISTRIBUTION OF MINERAL RESOURCES IN UGANDA**

**The distribution of mineral resources in Uganda is as follows;**

* **Kasese mining region with** cobalt and copper mined at Kilembe, lime stone at Hima, salt at Lake Katwe, Gold at Kitaka in Kamwenge.
* **South western Uganda region**, Iron ore at Muko in Kabale, diamonds in Ibanda, wolfram in Kisoro and Volcanic ash in most areas of kisoro and kabala.
* **Tororo mining region** with gold at Busia, limestone at Tororo and Sukulu hill, phosphate at Tororo in Sukulu hills, salt, pumice and asbestos at Tororo.
* Bushenyi and Buhweju with gold, diamond, columbite and tantalum.
* Karamoja with gold, Marble and mica at Moroto, Kotido and Kaabong, Limestone in Nakapiripiriti, volcanic ash and talc.
* Mubende with wolfram, gold and columbite.
* Lake Albert basin in Buliisa and Hoima, Semliki valley in Ntoroko, Rhino basin along Albert Nile in Amuru, L. Edward – George complex in Kanunga and Bushenyi with oil deposits (Petroleum).
* Lake Victoria shores in Kampala and Wakiso and Kyoga shores in Serere, Apac and Nakasongola with sand and clay.
* Sironko and Kapachorwa with Limestone.
* Manafwa at Namekhala with Vermiculite.
* Lake Albert in Hoima and Buliisa with petroleum
* Isingiro with Tin at Kikagati and sand.
* West Nile with Gold, Miica, Marble in Moyo and Yumbe.
* Kampala area, Mbarara, Bushenyi, Ntungamo with Granite Gneiss.
* Kibaale, Mubende, Masindi and Busia with Uranium.

**FACTORS RESPONSIBLE FOR THE GROWTH OF THE MINING INDUSTRY IN UGANDA**

Mining has been able to develop because of number of factors both natural and human factors. These are:

1. Presence of a variety of minerals of commercial value which are endowed in Uganda like vermiculite in Manafwa, Oil and Natural gas from Semliki- Wanseko basin, gold at Busia and Kitaka in Kamwenge, etc which has exploited as a basis for development of the mining industry.
2. Existence of fairly and various transport routes which are constructed by the government to help in accessing the mining activities such as the Mbale - Kapchorwa road to facilitate the mining of Vermiculite in Manafwa, Gold in Busia and limestone in Kapchorwa; and others.
3. Presence of revived plans initiated by the government to open up the formerly closed mineral areas so as to develop the mining industry. E.g. the Kasese – Kilembe mines were re-opened up and recycling of cobalt from copper residues is done by the Kasese Cobalt plant which is a foreign company.
4. Existence of constant supply of power like HEP and diesel generated power which has been developed or extended to mining regions so as to run the mining facilities. E.g. the government through Uganda Electricity Ttransmission Company extended power to Kapchorwa for limestone mining and cement processing.
5. Presence of both local and foreign investors which are attracted by the government for long investing in the mining Industry e.g. vermiculite in Manafwa is mined by a South Africa Co. called Rio Tinto and processing of cobalt in Kasese is a joint venture between Uganda, France and Australian government.
6. Presence of adequate capital to be invested the mining industry which is obtained from the World Bank, IMF (International Monetary Fund), African development Bank and some from foreign investors such as Rio Tinto from S.A which mines vermiculite from Namekhala mines in Manafwa.
7. Existence of positive government liberalization and privatization policies towards the development of the mining industry. For example in 1988, a gold buying centre was set up in Kampala which made more gold for export from Mubende and Busia gold mines and between 1988 -1992, more than one tone of gold was exported which earned Uganda US$ 970,750.
8. Existence of reliable market for minerals in India, Australia and China for buying the extracted and processed minerals. Uganda has also opened up more market for minerals by joining economic integration organisations such as the, EAC, PTA, COMESA and KBO for increased markets of mineral resources. For example Uganda today exports cement and clay products to Rwanda, DR.Congo and Sudan.
9. Existence of relative political stability for smooth and peaceful running of mining activities like Kasese where cobalt is recycled, Limestone at Hima and Salt at Katwe are mined have led to development of the mining industry which has been done through deployment of the UPDF and police mineral protection unit(PMPU) in gold mines in mubende.
10. Presence of anti-smuggling centers which were set up and stationed by the Government under URA by the special revenue protection services personnel to curb the smuggling of minerals like gold from Busia and Malaba and Cement from Tororo near the Uganda – Kenya border.
11. Presence of both skilled and semi-skilled labour for operating mining activities. The Ministry of Energy and Mineral Resources sent students to USA, Libya, Nigeria, Venezuela and Peru to study geological survey, Mapping, remote sensing and exploration as well as mineral exploitation. Such skilled labour is the one that has discovered oil in the Semuliki basin in Buliisa with help foreign experts from Britian of Heritage oil co.
12. Existence of some minerals near the earth's surface such that they are easy to mine using open cast mining method which is a cheapest method. E.g. sand and clay at Seeta in mukono and Kajjansi in wakiso; Mica in Nebbi; etc are being exploited by the local population using the locally available tools like hoes, spades, stone hammers, mattocks and pickaxes.
13. Presence of modem technology to carry out mining operation of extraction and processing that are being imported in Uganda from U.S.A, Canada and Japan. For example Tullow oil Uganda ltd and Heritage oil and gas Ltd imported oil drilling derricks to Buliisa and Hoima from USA, Canada and Japan leading to large scale mining of oil and natural gas.
14. Existence of mineral research and mineral exploration which has been done to discover mineral potentials for exploitation in Uganda. Over 500 mining exploration licenses have been issued since the 2003 Mining Law was established. For example Gold deposits have been discovered in Busia, Uranium in Kibale; and others.
15. Informative advertisements of mineral products for increased market like clay products by Uganda Clays at Kajjansi in Wakiso and limestone products like cements by Hima ltd in Kasese and Tororo limestone co. in Tororo.
16. Presence of plenty supply water from lakes and rivers for processing and cleaning the mineral ore after being primarily extraction like Lake George near Cobalt mine in Kasese.

**CONTRIBUTION OF MINING TO ECONOMIC DEVELOPMENT OF UGANDA**

The mining sector has also contributed both positively and negatively to the development of Uganda. These are;

**Positive values:**

* Employment opportunities have been generated in various mining activities engaging thousands of Ugandans which has in turn earned income to them thus improving on their living conditions, paying PAYE and local service tax to the government. E.g. more than 100,000 people are employed within the Tororo and Hima limestone mines and other related activities. This has improved the standards of living of these employees.
* Mining has stimulated the growth and development of industries as they use the minerals as their raw materials in order to produce finished goods. E.g. limestone from Tororo and Hima in Kasese are used to manufacture cement at Tororo and Hima cement factories; salt from L. Katwe in Kasese for making edible salt at Katwe salt plant, and others. In turn the industries have contributed to job opportunities
* The mining sector has generated to Ugandan government revenue through licenses to taxes imposed on the mining companies like Canmin resources Ltd, Saudi Marble company, and others; and individual workers in the mines plus other individuals dealing in commercial mining related activities. The revenue is invested in development of socio-economic infrastructures
* Mining sector has contributed to Uganda's foreign exchange earnings through exportation of minerals and their products which is used to develop roads and other ammenities. For example Cobalt from Kasese is exported to Australia, Japan, etc.
* Mining has led the development of infrastructure in Uganda especially in the areas where the mines are located hence benefitting the local population. E.g. copper mining in 1960's at Kilembe led to the extension of the railway line from Jinja to Kasese and the construction of Mubuku power station; and currently various roads in Hoima and Masindi are being renovated because Tullow oil Uganda Ltd that drills oil in L. Albert lowlands by 2007 invested over 1 million US dollars on social infrastructure.
* The mining industries have promoted the international relationship between Uganda and the countries to which it exports its minerals which has in turn attracted more foreign investors and creating opportunities of trade. E.g. copper mining at Kilembe had strengthened Uganda's relationship with Britain, the country which was mining it at that time.
* Mining has contributed to the growth and development of various social amenities in the areas where mining activities are carried out for example copper mining at Kilembe like kilembe secondary school and kilembe hospital in kasese.
* Mining as a sector in Ugandan has attracted many foreign investors into the business among which are the Anglo - Lovable minerals of South Africa and Pacific Vanfold of Canada are involved in gold mining in Kaabong, Saudi Marble Company of South Arabia in Marble and mica mining in Nebbi, etc who have in turn raised the country's revenue, investment capital, market for the minerals and other consumable goods, the discovery of more minerals.
* The mining activities such as the copper and cobalt mines at Kilembe, limestone mines at Tororo and Hima, salt mining at Lake Katwe and Kibiro in Hoima, etc are used for educational purposes and research studies by students in A and 0 levels as well higher institutions of learning for tourism, geology, environmental conservation and geography field studies. This has widened on the scope of knowledge.
* The mining sector in Uganda has helped to train the employed labour force in mining related operations and even to set up institutions of mining, etc impart technical and managerial skills in the mining related activities. E.g. Tullow oil co in Buliia are training their workers to equip them with skills in mineral survey, mapping, drilling and mining, mineral economics which can be manipulated for surviaval in other disciplines.
* The mining sector has boosted tourism in the mining centres like Kilembe copper and cobalt mines, Hima and Tororo limestone mines, Mubende and Busia gold mines, etc as they are tourist attractions for both local and foreign tourists who come to see these sites for either adventurism or research which has in turn added on the country's foreign exchange.
* It has helped in the diversification of Uganda's economy which has been mostly depending on agricultural activities which are usually affected by biological and climatic hazards and low international prices. E.g. Vermiculite mining in Manafwa has diversified banana and Arabica coffee growing among Bagisu, etc.
* Mining has led to development of towns in areas where mining related activities take place. E.g. Kilembe town in Kasese started as a residential area for workers in the Kilembe mines, which provides social, economic, political and cultural services such as accommodations, trade and commerce, banking, insurance, electricity, medicare and security leading to urban development.
* The mining sector has facilitated the exploitation of other resources which would otherwise be left idle like water, land and forest resources e.g. mining of cobalt in the Kasese - Kilembe mines facilitated the exploitation of timber from Rwenzori and Kibale forests in the Kasese mining region.
* The mining industry has led to development of the building and construction industry. For example mining of clay at Kajjansi has provided bricks and tiles used for house construction in Kampala, Wakiso, Entebbe and other towns; Cement from Tororo and Hima limestone mines is used in both road and house construction in Kampala, Tororo, Kasese, Jinja and other towns; etc.

**Negative values:**

* Opencast and adit mining has led to destruction of agricultural land. E.g. in the Kilembe copper mines in Kasese, a large piece of land was excavated and the heaps of soils extracted were dumped on the agricultural land which affected agricultural productivity and responsible for the destruction of flora and fauna where the soils were dumped.
* The excavated mineral pits created due to mining become breeding places of mosquitoes which transmit malaria, the most killer disease in Uganda. For example the incidences of malaria in the mining regions of Kajjansi in Wakiso and Seeta in Mukono where clay is mined are quite high, due to presence of stagnant waters in the mining pits created.
* The mining sector has increased air pollution in the adjacent areas. For example the mining and processing of limestone in Tororo and Hima has led to air pollution in Tororo and Kasese from dust particles released into the atmosphere thus creating health hazards to animals and people in the area.
* Cobalt and copper wastes from Kilembe mines are usually dumped in L. George - Kazinga channel - Edward wetland complex and even the waters of R. Mpanga - Katonga which has polluted waters and harmed the aquatic life.
* Land degradation , large scars and pits are left behind after mining eg copper mining in kasese,clay mining in kajjansi wakiso,
* Noise pollution from the explosive made in the mines in the due course of mining of copper at Kilembe, Limestone at Tororo and Hima is above the acceptable levels by the International Labour Organisation which has caused tension among workers and even to lose their hearing.
* Natural forests,swamps and open woodland such as Mabira in Buikwe and Mt. Elgon forests in Mbale are being rapidly cut to provide fuel wood and timber for brick and tile firing at Uganda clays Kamonkoli in mbale which has in turn led to serious upset in the balance of the natural environment.
* The mining sector has led to growth of urban centers with negative effects like crime proliferation, slum development, unemployment, prostitution, etc which are threat to the country's development such as Kajjansi where clay is mined in Wakiso is with such urban evils.
* A decline in mining and mineral exhaustion has left some areas in Uganda with problems of unemployment e.g. Kilembe copper mines in 1978 closed due to mineral exhausted in the exposed portion and halting of salt mining from lake Katwe stopped in 1986 due to poor technology which affected people in the area with unemployment.
* Careless mining increases the incidence of mass wasting and landslides as pits are excavated in the earth, the soils in the area lose their compatibility due to vibrations caused by the mining machines. For example vermiculite mining in Manafwa, has led to mass wasting occurrences and even limestone mining in Tororo region led to the walls and roofs of Tororo girls' school to be damaged by ground vibrations.
* Clay mining like in Seeta and Kajjansi and oil drilling like in Semliki valley in Bundibugyo especially in wetland and forested areas has seriously interfered with wetland ecology and wildlife as vast vegetation is cleared in the process of mining.
* The search for gold has left behind open pits and scares in the landscape with serious impact on water quality and living organisms. E.g. the reckless use of mercury to recover gold in Kanungu and Kitgum has been dangerous to microorganisms, aquatic life and terrestrial organisms and toxic to human beings in those areas where gold is continuously searched.
* It is associated with terrible accidents especially when the mines collapse which has always led to loss of lives. for example accidents in gold imines in mubende
* It has resulted into rural urban migration which reduces agricultural productivity in rural areas for example limestone mining in kasese.
* It has led to creation of ghost towns especially after the exhaustion or decline in mineral production e.g. the decline of copper production at Kilembe in kasese turned kilembe into a ghost town.

**PROBLEMS FACING THE MINING INDUSTRY IN UGANDA**

The following are the problems hindering the progress of the mining sector in Uganda;

* Inadequate capital and indigenous technology to explore and to exploit the minerals. For example sand mining at Kasenyi on shores of L. Victoria is done through use of poor tools like hoes due to limited funds among the miners thus limiting the large scale commercial mining activities.
* Some minerals like wolfram in Kabale, Mica in Nebbi and gold in Kaabong are located in rural and remote areas with poor transport facilities which has posed the problem of moving machinery especially in the rainy season when the existing murrain roads become muddy and impassable.
* The high transport costs incurred in moving the machinery and exploited minerals has led to an increase in production costs. E.g. cement and limestone from Tororo and Hima is sold at high prices at the national level partly as a way to recover the transport costs incurred.
* Limited skilled manpower to work in the mines like gold mines in Busia. For example the British mined copper from the Kilembe mines, Vermiculite from Manafwa is mined by South Africans and petroleum from Semliki - Wanseko basin is exploited by tullow oil and gas ltd a foereign owned company.
* Low levels of technology in the mining sector which has resulted into the use of rudimentary mining methods which are inefficient e.g. gold mining in Kaabong and Busia are through use of rudimentary methods. Due to the same case, oil drilling in L. Albert had delayed as oil drilling machines were lacked in Uganda.
* Most of the major mineral miners are foreign investors such as the Anglo -Lovable minerals of S. Africa, Saudi Arabia Company of Saudi Arabia, etc who have repatriated the profits to their home countries leaving Uganda drained of its mineral wealth thus failure of managing the mining sector sustainably.
* In some cases the mining activities are delayed and restricted by the environmental conservationists who first establish an environmental impact assessment over the areas where the mineral is to be mined E.g. the oil drilling in L. Albert lowlands was initially delayed by the National Environmental Management Authority (NEMA) which was still doing assessment work.
* Political instability in Kasese by ADF in 2000 affected the recycling of cobalt while insecurity and hostilities of some tribes by Karamoja warriors in Kotido and Moroto limits mining of gold and limestone.
* The mining sector of Uganda is suffering from stiff competition with other mineral producing countries which even have minerals of high quality e.g. DRC and Zambia have better copper ore than that from Kilembe
* The industry is also suffering from competition with other sectors like agriculture, forestry, tourism, etc of Uganda's economy in terms of financial assistance and needed labour e.g. pastoralism in Karamoja is out competing gold mining in Moroto, Kaabong and Kotido and limestone mining in Nakapiripirit, etc.
* There are limited power and energy supply to extract and process minerals like limestone in Kotido, Sironko and Moroto. which require large quantities of electricity which is not yet generated in Uganda and extended to those areas.
* Exhaustion of minerals has led to low level of the mining industry like tin from Kikagati in Isingiro and Wolfram in Kabale leading to the loss in form of machinery that where established to mine and process the mineral as well as experts.
* Some minerals occur in small quantities which is uneconomical to mine them like **Busitema gold in Busia mine exports 4kg of gold** per month which don't call for large scale investment in the industry.
* Prices of the minerals like gold mined in Busia and Kaabong and cobalt from Kasese on the world market tend to fluctuate which affected the mining earnings expected thus leading to closure of some mines.
* Mining as an activity is dangerous, risky and difficult because it involves underground collapse of the roofs leading to the death of the miners. This occurs at Kilembe in Kasese where copper and cobalt are mined and at Muyenga in Kampala where stone quarrying.
* There is inadequate mineral exploration and research to discover the potential wealth of minerals. E.g. the first petroleum geological survey around Lake Albert in 1920s did not ascertain the presence of the mineral at the spot because it indicated that if at all petroleum existed, it was below a hard rock thus difficult to extract it.
* Some minerals such as iron ore in Kabale and copper from Kilembe in kasese are deeply burried under hard and thick basement rocks which make them difficult and expensive to extract.
* Smuggling of minerals across borders is also a problem leading to low level of the mining industry in Uganda. For example gold from Busia and cement from Tororo are usually smuggled to Kenya, Tanzania and Dubai (United Arab Emirates) which therefore leads losses to the mining sector.
* The quality and concentration of minerals such as gold in Busia, copper in Kilembe, wolfram in Kabale, and others are poor and low which reduces the demand for such minerals on the world market whereas high costs are incurred to process the mineral from the bulky and impure ore to pure one.
* Some of the minerals such as Tin, Beryllium, Gold, and Columbite in Kabale -Kisoro region as well as oil deposits in Semliki - Wanseko valley are located in peoples' farmlands which have called for displacement and compensation of such people before extraction is under taken. **(largely poor land tenure system)**
* During the process of exploitation, the minerals such as limestone at Hima and Tororo have caused air pollution particularly due to limestone particles in the air which has created health hazards such as lung cancer, asthma, and bronchitis not only to the workers in the mines but also to the people who live in the nearby villages of Kasese and Tororo respectively.
* There is reducing market for some minerals such as Copper from Kasese due to alternative materials and advanced technology which has been introduced like wireless communications in the Uganda telecommunications has greatly affected copper mining at Kilembe.
* Corruption, embezzlement and mismanagement of funds by government officials have affected the mining industry. For example copper pyrites from Kilembe were stolen by some government officers in Kilembe in the early 2000s and vermiculite mines in Manafwa was tendered inappropriately to Rio Tinto co. from S. Africa in 2007.
* Health problems including disease outbreak have affected the mining industry. For example outbreak of the Marburg Virus disease in 2007 which is similar to Ebola in 2000 led to temporary closure of the Kitaka gold mines in kamwenge district within the Kakasi forest reserve, AIDS epidemic and malaria also slows down mining activities in Sironko limestone and Namekhala vermiculite mines.
* International territorial conflict between Uganda and DRC has affected mining like DRC claims the ownership of Rukwanzi Island in Lake Albert yet the island is strategic for Oil mining in and around Lake Albert.
* Poor processing facilities such as corrosion of mining and processing equipments led to closure of some mines. E.g. Lake Katwe salt mining in 1986 closed due to poor materials which corroded making salt smelly and unfit for human consumption by the Swiss company and left the country.

**MEASURES BEING TAKEN TO REACTIVATE THE MINING SECTOR IN** **UGANDA**

The following are the steps being taken to develop the mining sector;

1. Ensuring political stability in mining areas like Kasese where cobalt is recycled, mica in Gulu and gold in Kotido where are mined has been done through the Ministry of Defense using the UPDF to drive away the ADF and LRA rebel activities and disarmament of the Karamajong warriors.
2. Adopting aggressive and modem mineral survey techniques such as Aerial survey. The ministry of energy resources is giving out over 260 licenses to foreign firms such as Tullow oil from London and others to conduct mineral survey of oil in Albertine basin.
3. Encouraging both local and foreign investors to invest in the mining Industry for example vermiculite in Mbale is mined by a S. African firm called Rio Tinto, processing of cobalt at Kasese is done as a joint venture between Uganda, France and Australian governments, Hima Tibest from China in revived mining of copper at Kilembe in Kasese.
4. Improving road system such as the Mbale - Kapchorwa road to facilitate mining of Vermiculite in Manafwa, Gold in Busia and limestone in Kapchorwa; to facilitate transportation of limestone's and vermiculite products.
5. Recycling of mineral bi- products such as cobalt from copper wastes at the Kasese Cobalt plant which is done by a foreign company called Kasese Cobalt Company as a joint venture between Uganda, France and Australian governments.
6. Training of labour force like geologist chemists by the Ministry of energy and mineral resources and Education and Sports on scholarships to USA, Libya, Nigeria, Venezuela and Peru to study geological survey, Mapping and exploration as well as other mining activities to discover more oil wells in the Semliki -Wanseko basin and Rhino camp basin in West Nile coupled with experts from Tullow oil co and Neptune Petroleum co. from London. The government is even allocating Shs 3b to a newly created Uganda Petroluem Institute in Kigumba, Masindi district which was commenced in October 2009 to train petroleum related workers.
7. Opening more market for minerals by joining economic integration organisations such as the PTA, COMESA, Kagera Basin Organisation, Asiatic countries like China and India for increased markets of mineral resources. For example Uganda today exports cement from Hima and Tororo to Rwanda, DR.Congo, Sudan and other countries.
8. Renovating and rehabilitating the mineral factories that had come to a standstill. For example the Tororo phosphates fertilizers industry and the Katwe salt plant in Kasese are under renovation so as to resume processing and mining too.
9. seeking financial support through the Ministry of Finance from financial institutions like the World Bank, IMF (International Monetary Fund), Paris club, African development Bank, etc to get the necessary capital, machinery needed in mining. For example funds for oil exploration in Semliki - Wanseko basin were obtained from the World Bank and Britain.
10. Extending power tomining areas to enhance production. Power was extended to Kapchorwa for limestone mining and cement processing, in Yumbe, limestone quarrying is done using installed diesel generators and the Uganda Electricity Transmission Company is doing the extension of electricity in these areas as well as other areas in West Nile for exploitation of mica, gold and other minerals.
11. Undertaking liberalization of mining activities so as to develop the sector. For example in 1988, a gold buying centre was established and this generated more gold for exports in the country and between 1988 -1992, more than one ton of gold was exported.
12. Creating joint ventures with foreign firms like Canmin resources from Canada has opened up new mining areas such as Kitaka gold mines in kamwenge district, Kasese cobalt plant at Kilembe, Tororo phosphate mines and many others.
13. Curbing evil practices in mining sector like smuggling by enforcing the law through the Anti-smuggling units, Police, ISO. E.g. gold smuggling from Busia mine is being controlled by the special revenue services personnel who are stationed on every border like at Busia and Malaba near the Kenyan border and others.
14. Establishing commissions of inquiry to fight corruption for example the establishment of the adhoc committee to investigate the allegations of corruption in Uganda national oil company (UNOC)

SAMPLE QUESTIONS:

1. Account for the development and expansion of the mining industry in Uganda.
2. Assess the contributions of the mining areas to the development of Uganda.
3. Account for the low level of the mining industry in Uganda.
4. Explain the steps being taken to develop the mining sector.

**SAMPLE APPROACH:**

**INTRODUCTION**

* You are expected to define the keyword(s) i.e. mining / mining sector (industry) / minerals.  You are expected to give the positive / negative status (trend) in relation to the keyword(s).

**Any 4 Points**

* You are expected to bring out the areas in relation to the keyword(s) i.e. mining / mining sector (industry) / minerals.
* You are expected to draw a sketch map to show the identified and located areaswith names of places. **BODY**
* You are expected to state, explain and illustrate the points (factors) in relation the demands of the command word in the question and the keyword(s). **Any 18 well explained and illustrated points.**