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NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

113/2

GEOGRAPHY 2

(For Both School and Private Candidates)

Time: 3 Hours

ANSWERS

Year: 2012

Instructions

1. This paper consists of seven questions.
2. Answer a total of five questions, question number 1 is compulsory.

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1. Briefly describe the following concepts as used in demography.

(a) Fecundity refers to the biological potential of an individual or population to reproduce. It is different from fertility, as it represents the capability of reproduction rather than the actual number of children born. For example, a woman may be biologically capable of having ten children, but due to personal choices or external factors, she may have only three.

(b) Infant Mortality Rate (IMR) is the number of deaths of infants under one year of age per 1,000 live births in a given year. It is an important indicator of a country's healthcare quality. A high IMR suggests poor medical facilities, malnutrition, or inadequate sanitation, while a low IMR reflects better health services.

(c) Natural Population Growth refers to the increase or decrease in population resulting from the difference between birth rates and death rates, excluding migration. If births exceed deaths, the population grows; if deaths surpass births, there is a natural decline. For example, Tanzania experiences natural population growth due to high fertility rates and declining mortality rates.

(d) Stationary Population Pyramid represents a population with relatively equal birth and death rates, resulting in slow or no population growth. Such a pyramid has almost equal numbers of young, middle-aged, and older people, indicating a stable population. Countries like Sweden and Denmark exhibit such population structures.

(e) Sex Ratio is the number of males per 1,000 females in a population. It is used to analyze gender distribution and demographic trends. A balanced sex ratio is ideal for social stability, whereas an imbalance, such as a higher male population in China due to past policies, can lead to social challenges like reduced marriage prospects for men.

2. Population explosion is the result of the interplay of a number of factors. Explain the validity of the statement.

Population explosion occurs due to multiple factors working together, leading to rapid population growth. One of the key factors is improved healthcare, which has significantly reduced mortality rates. Advances in medicine, vaccines, and sanitation have led to longer life expectancy, allowing populations to grow faster. For example, the eradication of diseases like smallpox has saved millions of lives.

High fertility rates contribute to population explosion, especially in developing countries. Cultural beliefs, economic dependence on children, and limited access to contraception lead to large family sizes. In countries like Niger and Uganda, women have an average of more than five children, accelerating population growth.

Lack of effective family planning policies allows uncontrolled population growth. In many rural areas, reproductive health education is inadequate, and contraceptives are either unavailable or not widely accepted. Without measures to limit births, populations continue to expand rapidly.

Agricultural advancements have supported larger populations by increasing food production. The Green Revolution introduced high-yield crops, irrigation, and fertilizers, reducing famine and enabling higher birth rates. Countries like India and China have benefited from increased food supply, sustaining their large populations.

Economic and social stability contribute to population growth. When a country experiences prolonged peace and economic growth, people feel secure to raise large families. Countries recovering from war, such as post-World War II Europe, saw rapid population booms due to improved living conditions.

Migration and urbanization play a role in population expansion in certain areas. Many developing nations experience rural-to-urban migration, concentrating populations in cities and creating demographic pressure. Urban centers provide jobs, healthcare, and education, leading to higher birth rates among migrants.

Religious and cultural influences also promote high birth rates. Some religious groups discourage contraception and emphasize large families as a blessing, reinforcing rapid population growth in certain societies.

Technological advancements in sanitation and living standards further support population growth. Access to clean water, waste management, and improved housing reduce health risks, enabling populations to thrive.

3. Describe nine strategies for manpower mobilization in Tanzania.

Expanding vocational training and technical education ensures that Tanzania produces a skilled workforce. Institutions like VETA provide hands-on training in areas such as construction, mechanics, and information technology, improving employability.

Investing in higher education increases manpower quality. Universities and colleges such as the University of Dar es Salaam and Sokoine University of Agriculture produce professionals needed for national development.

Encouraging entrepreneurship creates job opportunities. The government and financial institutions offer microfinance loans and business incubation programs to help young entrepreneurs start their businesses, reducing dependency on formal employment.

Industrialization and infrastructure development create jobs in manufacturing, construction, and transport. Tanzania's push for industrial growth under the "Build Tanzania Industrial Economy" initiative generates employment for both skilled and unskilled workers.

Agricultural modernization mobilizes manpower by increasing productivity in rural areas. Initiatives such as Kilimo Kwanza (Agriculture First) introduce modern farming techniques, encouraging youth participation in agribusiness.

Enhancing public sector employment programs ensures that the government absorbs trained personnel into civil service. Recruitment in education, healthcare, and security services helps utilize human resources effectively.

Promoting foreign investment attracts companies that create jobs. Investments in mining, tourism, and manufacturing generate employment and transfer skills to Tanzanian workers.

Encouraging women's participation in the workforce strengthens manpower mobilization. Programs that promote gender equality, such as women empowerment funds, enable women to contribute actively to the economy.

Aligning population policies with economic planning ensures that manpower is developed in sectors with high demand. Government policies that match workforce training with national economic needs enhance productivity and development.

4. Agricultural sector in Tanzania is not well developed despite being the backbone of the economy. Discuss. Tanzania's agricultural sector faces low mechanization, as many farmers still rely on traditional tools such as hoes and ox-plows. This limits productivity and makes farming labor-intensive and inefficient compared to mechanized agriculture in developed countries.

Unreliable rainfall and climate change negatively affect agriculture. Most farms depend on rain-fed agriculture, making them vulnerable to droughts and irregular weather patterns. Without extensive irrigation systems, crop yields fluctuate, leading to food shortages and income instability.

Limited access to financial support prevents farmers from investing in modern farming techniques. Many small-scale farmers lack access to credit or government subsidies, making it difficult to purchase fertilizers, improved seeds, and farming equipment.

Poor infrastructure hinders agricultural marketing. Many rural roads are in poor condition, making it difficult for farmers to transport their produce to urban markets. Perishable crops such as tomatoes and milk often spoil before reaching consumers due to inadequate storage and transport systems.

Land ownership challenges affect agricultural development. Many farmers operate on small plots due to inheritance customs and land fragmentation. Without clear land ownership rights, farmers hesitate to invest in long-term agricultural improvements.

Low adoption of modern technology and research results in low productivity. While research institutions develop improved crop varieties and pest-resistant seeds, many farmers lack knowledge or financial means to adopt them.

Market instability and price fluctuations discourage investment in agriculture. Farmers often face unpredictable market prices for crops such as maize and coffee, making it hard to plan for long-term production.

Pests and diseases threaten food security. Outbreaks such as locust invasions, armyworms, and cassava mosaic disease frequently damage crops, reducing harvests and leading to economic losses.

Weak extension services mean that many farmers do not receive adequate training or support. Agricultural extension officers are few and often lack resources to educate farmers on best practices.

Despite these challenges, Tanzania has the potential to improve its agricultural sector by investing in irrigation, mechanization, research, and market access. Modernizing agriculture will increase food security, boost exports, and create employment opportunities.

5. Account for the change of the location of steel and iron industries in Germany. Explain four adverse impacts of the iron and steel industry.

The steel and iron industries in Germany initially developed in the Ruhr Valley, mainly due to the availability of raw materials such as coal and iron ore. However, as coal deposits declined and transportation systems improved, industries moved closer to ports and trade centers for easier access to imported raw materials. The demand for high-quality steel and environmental regulations also contributed to the relocation of industries to areas with better infrastructure, skilled labor, and access to international markets. Technological advancements, including the use of scrap metal and electric arc furnaces, reduced reliance on traditional coal-based steel production. This led to a shift in the industry from coal-dominated regions to more energy-efficient locations where renewable energy sources could be utilized. The expansion of global trade also allowed Germany to import iron ore from other countries, reducing the need to remain close to domestic sources.

The decline of heavy industries in traditional steel-producing regions, such as the Ruhr Valley, was also influenced by environmental regulations. Germany's strict pollution control measures forced many industries to modernize their production processes, leading to the closure of outdated plants and the relocation of industries to areas with better sustainability measures.

Adverse impacts of the iron and steel industry:

The steel industry contributes significantly to air pollution, releasing large amounts of carbon dioxide, sulfur dioxide, and nitrogen oxides. These emissions contribute to climate change and increase respiratory diseases among populations living near steel plants.

Water pollution is another major issue, as steel production requires significant amounts of water for cooling and processing. Wastewater from steel factories often contains heavy metals and toxic chemicals, which can contaminate rivers and lakes, affecting aquatic life and human health.

Land degradation occurs due to the extensive extraction of iron ore and coal, leading to habitat destruction and soil erosion. Mining activities and industrial waste disposal reduce land productivity and affect biodiversity.

The industry is also highly energy-intensive, consuming vast amounts of electricity and fossil fuels. This leads to resource depletion and increases the overall carbon footprint of the country, making it a significant contributor to global warming.

6. Explain nine measures taken by the government of Tanzania to promote tourism.

The improvement of infrastructure has been a key priority. The government has expanded road networks, airports, and rail connections to make tourist destinations more accessible. The renovation of Julius Nyerere International Airport and the development of new airstrips in Serengeti and Ruaha National Park have facilitated easier travel.

The promotion of eco-tourism has helped attract environmentally conscious travelers. Tanzania has implemented strict conservation measures to protect wildlife and natural habitats while encouraging responsible tourism. This has made destinations like Ngorongoro Conservation Area popular for sustainable tourism.

The government has invested in marketing and international campaigns to attract global tourists. Tanzania participates in international tourism fairs and uses digital platforms to showcase its attractions, including Zanzibar's beaches and Mount Kilimanjaro.

Visa reforms and simplified entry procedures have been introduced to encourage more tourists. The introduction of e-visas and visa-on-arrival options has made it easier for international visitors to travel to Tanzania.

The government supports public-private partnerships in tourism development. By working with private investors, Tanzania has seen an increase in luxury lodges, hotels, and tour operations that enhance the visitor experience.

The diversification of tourism products has helped attract different types of travelers. In addition to safaris, Tanzania promotes cultural tourism, adventure tourism, and historical sites such as Bagamoyo and Kilwa.

Training and capacity building for tourism workers have been implemented to improve service quality. The government collaborates with institutions to provide training programs for tour guides, hotel staff, and park rangers.

Conservation and anti-poaching efforts have been strengthened to protect Tanzania's wildlife. The government has deployed special units to combat illegal poaching and ensure the long-term survival of endangered species like elephants and rhinos.

Tax incentives and investment-friendly policies have been introduced to encourage foreign and local investors in the tourism sector. Reduced taxes on tourism-related businesses have helped boost industry growth.

7. Describe the role played by the transport and communication sector in the economic development of a country.

Facilitating trade and commerce is one of the primary roles of transport and communication. A well-developed transport system allows businesses to move goods efficiently, reducing costs and increasing market reach. In Tanzania, improved port facilities in Dar es Salaam have enhanced trade with neighboring countries.

Job creation is another significant benefit. The transport sector employs thousands of people, from drivers and pilots to logistics managers. The expansion of the SGR railway project has created employment for construction workers, engineers, and support staff.

Boosting industrialization is possible through efficient transport and communication networks. Industries require raw materials and finished goods to be transported efficiently. The presence of good road networks and reliable internet services supports the manufacturing sector in countries like China and Germany.

Promoting tourism relies heavily on a well-developed transport sector. International and domestic travelers need reliable airlines, roads, and rail services to reach destinations. Tanzania's improvements in air and road transport have helped boost its tourism sector.

Enhancing rural development is made possible by connecting remote areas to major cities. Rural roads and mobile network expansion allow farmers to access markets and sell their produce at competitive prices.

Improving healthcare and education services depends on good transport and communication. Hospitals and schools in rural areas benefit from easy access to medical supplies, teachers, and emergency services. Mobile communication enables remote consultations with specialists.

Encouraging foreign investment is linked to transport and communication development. Investors prefer locations with reliable infrastructure, including roads, internet, and air connectivity. The expansion of Tanzania's broadband network has attracted technology investments.

8. (a) Explain the impacts of mining on the environment.

Deforestation and habitat destruction occur when forests are cleared for mining activities. This leads to the loss of biodiversity and disrupts ecosystems. In areas like Geita and Kahama in Tanzania, large sections of land have been cleared for gold mining, affecting wildlife habitats.

Soil erosion and land degradation are significant issues caused by open-pit mining. The removal of vegetation and topsoil leaves the land vulnerable to erosion, making it unsuitable for agriculture and human settlement.

Water pollution is a major environmental concern in mining areas. Chemicals such as mercury and cyanide, used in gold mining, contaminate rivers and groundwater sources, affecting both humans and aquatic life. The Mara River, which flows through the Serengeti, has been affected by mining-related pollution.

Air pollution occurs due to dust and emissions from mining operations. The release of toxic gases from smelting and refining processes contributes to respiratory diseases and poor air quality in mining regions.

Health hazards to local communities are common in mining areas due to exposure to toxic substances. Many miners suffer from lung diseases caused by inhaling dust and chemicals. In some cases, communities near mining sites experience birth defects and long-term health issues.

(b) Suggest four ways which can be used to minimize the effects of mining on the environment.

Enforcing strict environmental regulations can help reduce mining-related damage. Governments should require mining companies to follow sustainable practices, such as proper waste disposal and land rehabilitation.

Promoting reforestation and land restoration can help reverse the environmental damage caused by mining. Planting trees and restoring vegetation in mined areas can reduce soil erosion and improve biodiversity.

Encouraging responsible mining techniques such as using eco-friendly chemicals instead of toxic substances like mercury and cyanide can prevent water pollution and reduce health risks.

Investing in community awareness programs can help educate miners and local communities on sustainable mining practices. Providing training on environmental conservation can encourage responsible mining behavior.

By implementing these measures, the negative effects of mining on the environment can be minimized while ensuring that mineral resources continue to contribute to economic growth.