THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

DIPLOMA IN SECONDARY EDUCATION EXAMINATION

713 GEOGRAPHY

Time: 3 Hours **ANSWERS** **Year: 2009**

Instructions

1. This paper consists of section A, B and C.

2. Answer all questions in section A, two questions from section B and two questions from section C.

1. (a) Define soil

Soil refers to the upper layer of earth, composed of minerals and organic matter, supporting plant growth and agriculture, essential for economic stability and environmental health through resource management.

1. (b) In short, state the soil forming factors

Climate: One factor is climate, affecting weathering. Rainfall and temperature decompose materials, forming soil and supporting agricultural productivity and development through environmental processes.

Parent Material: Parent material, like bedrock, influences soil. Minerals determine soil types, aiding resource management and economic growth through fertile land formation.

Organisms: Living organisms, like plants, shape soil. Roots and microbes enrich land, enhancing environmental health and societal progress through ecosystem stability.

Time: Time allows soil formation through gradual processes. Long-term weathering creates fertile land, supporting economic stability and development through sustained resource availability.

2. Mention the components of population growth

Birth Rate: One component is birth rate, increasing population. Higher births boost labor, impacting economic stability and resource demands through population dynamics.

Death Rate: Death rate affects growth, reducing numbers. Lower deaths extend lifespans, supporting societal progress and development through sustained workforce availability.

Immigration: Immigration adds population, enhancing diversity. New residents increase labor, boosting economic growth and stability through population expansion and resource use.

Emigration: Emigration decreases population, losing residents. Out-migration reduces workforce, challenging economic stability and necessitating strategies for development and progress.

3. The study of population pyramid is very essential to Geography. Give four (4) reasons

This question references Geography specifically, which contradicts the instruction to remove subject-specific mentions unrelated to geography. Since the question cannot be generalized without altering its core, I will adapt it to focus on general population pyramid study reasons, removing the Geography reference but retaining the concept of population analysis.

Demographic Planning: One reason is demographic planning, guiding policies. Studying age structures supports resource allocation, enhancing economic stability and societal development through informed strategies.

Economic Forecasting: It enables economic forecasting, predicting trends. Analyzing workforce ages boosts productivity, supporting economic growth and stability through labor market insights.

Health Resource Allocation: Population pyramids aid health planning, ensuring care. Understanding age-related needs improves health services, enhancing societal progress and development through effective management.

Social Policy Development: They inform social policies, addressing needs. Studying population distributions supports education access, boosting community stability and growth through targeted interventions.

4. (a) What is simple chain survey?

Simple chain survey refers to a basic method using a chain to measure land, determining distances for mapping, supporting resource management and development through accurate spatial data.

4. (b) Mention two uses of simple chain survey

Land Measurement: One use is land measurement, plotting boundaries. Chains assess science plots, enhancing economic stability and development through precise resource allocation.

Infrastructure Planning: It aids infrastructure planning, like roads. Chains map routes, supporting societal progress and stability through efficient development and spatial organization.

5. Identify and explain the major types of volcano

Shield Volcano: One type is shield volcano, with broad, gentle slopes. It erupts fluid lava, supporting environmental studies on landscape formation and resource management for development.

Composite Volcano: Composite volcanoes have steep, conical shapes. Alternating eruptions build structures, necessitating science education on hazards and geographic stability for societal progress.

Cinder Cone: Cinder cones are small, steep volcanoes, forming from ash. Explosive eruptions create landscapes, requiring management for environmental health and economic development through conservation.

6. Many countries in the world are highly dependent on Hydro-electric Power (HEP). To reduce this burden suggest other alternative sources of producing electricity

Solar Energy: One alternative is solar energy, harnessing sunlight. Panels generate power, reducing reliance on water, supporting economic stability and development through sustainable science resources.

Wind Energy: Wind energy, from turbines, produces electricity. It diversifies power sources, enhancing environmental health and societal progress through renewable science technologies.

Geothermal Energy: Geothermal energy uses Earth’s heat for power. It provides reliable electricity, boosting economic growth and stability through science-based energy solutions and development.

Biomass Energy: Biomass, from organic matter, generates electricity. It supports sustainability, enhancing societal progress and development through science-driven resource management and energy production.

7. Contrast between “soil erosion” and “soil conservation”

Soil Erosion: Soil erosion is the removal of topsoil by natural forces, like wind, degrading land and reducing productivity, necessitating management for environmental health and economic stability.

Soil Conservation: Soil conservation involves protecting soil from erosion, like planting trees, enhancing land fertility and supporting development through sustainable practices and resource management.

8. (a) What is meant by global warming?

Global warming refers to the long-term rise in Earth’s average temperature, driven by greenhouse gases, impacting ecosystems and requiring science solutions for environmental stability and development.

8. (b) Identify two effects of global warming

Climate Change: One effect is climate change, altering weather patterns. Rising temperatures disrupt agriculture, necessitating adaptation for economic stability and societal progress through science management.

Sea Level Rise: Global warming causes sea level rise, flooding coasts. Melting ice impacts communities, requiring strategies for environmental health and development through science-based planning.

9. Describe the reasons for the failure of agricultural production

Poor Soil Quality: One reason is poor soil quality, reducing yields. Degraded land limits productivity, challenging economic stability and necessitating science improvements for development.

Lack of Technology: Insufficient technology hinders farming. Outdated tools decrease output, requiring science innovation for economic growth and societal progress through efficient practices.

Climate Variability: Unpredictable weather affects production. Droughts reduce crops, necessitating adaptation for environmental health and stability, supporting development through science strategies.

Inadequate Funding: Limited funding restricts resources. Insufficient investment in science agriculture hampers growth, requiring financial support for economic stability and community advancement.

10. Examine the causes and effects of floods

Causes:

Heavy Rainfall: One cause is heavy rainfall, overwhelming drainage. Excess water causes flooding, impacting environmental health and requiring science management for stability and development.

Deforestation: Clearing forests increases runoff. Removing vegetation worsens floods, necessitating conservation for environmental sustainability and economic progress through science initiatives.

Urbanization: Urban development reduces absorption. Impervious surfaces heighten flooding, requiring planning for environmental health and societal stability through science-based solutions.

Effects:

Property Damage: Floods destroy property, like homes. Structural losses affect economies, necessitating recovery for societal progress and development through science reconstruction efforts.

Health Risks: They increase health risks, like diseases. Contaminated water spreads illness, requiring science health measures for environmental stability and community well-being.

Economic Loss: Floods cause economic loss, disrupting trade. Damaged agriculture reduces income, challenging stability and necessitating science strategies for recovery and growth.

SECTION B: (40 Marks)

Answer two (2) questions from this section.

11. What is the importance of observation method in studying science?

Understanding Phenomena: One importance is understanding phenomena, like ecosystems. Observing pollution clarifies concepts, enhancing science education and teaching effectiveness through direct experience.

Critical Thinking: It fosters critical thinking, analyzing data. Watching resource use develops science skills, improving educational outcomes and teaching quality through inquiry-based learning.

Practical Skills: Observation builds practical skills, like recording. Noting science patterns, like weather, enhances learning, supporting teaching precision and student progress in classrooms.

Engagement: It increases engagement, making lessons interactive. Observing trade processes captivates students, boosting science participation and teaching impact through hands-on education.

12. Proper information recording is essential in studying scientific phenomena in the field. Discuss

Accuracy: One importance is accuracy, ensuring reliable data. Recording science observations on ecosystems prevents errors, enhancing educational outcomes and teaching effectiveness through precise information.

Analysis: It enables analysis, interpreting findings. Documenting science patterns, like pollution, supports problem-solving, improving teaching quality and learning progress through evidence-based strategies.

Decision-Making: Recording aids decision-making, guiding actions. Science logs on resources inform policies, enhancing teaching relevance and societal stability through informed development.

Long-Term Tracking: It supports long-term tracking, monitoring trends. Science records on trade changes track progress, boosting educational impact and teaching precision through consistent data management.

13. (a) What is meant by teaching aids in science?

Teaching aids refer to tools, like charts, enhancing instruction, clarifying concepts like resource management, supporting educational effectiveness and student learning through science-based resources.

13. (b) Comment on the role of teaching aids in teaching and learning science

Engagement: One role is engagement, making lessons interactive. Teaching aids, like models, captivate students, boosting science learning outcomes and teaching effectiveness through visual tools.

Clarity: They ensure clarity, simplifying concepts. Charts on pollution reduce confusion, enhancing educational understanding and science instruction quality through clear communication.

Retention: Teaching aids improve retention, reinforcing memory. Diagrams of ecosystems aid recall, supporting science education progress and teaching impact through memorable learning experiences.

14. To what extent lesson notes are important to a science teacher?

Planning: One importance is planning, organizing instruction. Lesson notes outline science topics, ensuring systematic teaching and educational effectiveness for student progress.

Time Management: Notes ensure time management, scheduling activities. They allocate periods for chemistry, enhancing science teaching productivity and student outcomes in classrooms.

Resource Guidance: They guide resource use, listing needs. Notes specify charts for biology, improving science instruction and teaching quality through available materials.

Assessment Support: Notes aid assessment, evaluating progress. They schedule quizzes on physics, enhancing science teaching strategies and student achievement through structured evaluation.

Extent: Lesson notes are highly important, providing structure and efficiency, but their impact depends on adaptation to student needs, ensuring balanced teaching effectiveness and educational stability.

SECTION C (20 Marks)

Answer two (2) questions from this section.

15. (a) Define field study

Field study refers to research conducted outside classrooms, like observing ecosystems, gathering science data to enhance understanding and support educational outcomes through practical learning.

15. (b) Mention the advantages and disadvantages of using field study in learning science

Advantages:

Practical Experience: One advantage is practical experience, offering hands-on learning. Observing pollution provides real-world science insights, enhancing educational outcomes and teaching effectiveness.

Engagement: Field studies increase engagement, making lessons interactive. Exploring ecosystems captivates students, boosting science participation and teaching impact through experiential education.

Contextual Understanding: They provide contextual understanding, linking theory to practice. Studying trade in nature clarifies concepts, supporting science learning and teaching quality through relevant experience.

Disadvantages:

Time-Consuming: One disadvantage is time consumption, slowing progress. Field trips for chemistry extend lessons, reducing coverage and challenging science teaching efficiency.

Resource Intensive: They require resources, straining budgets. Science equipment for biology demands funding, limiting educational access and teaching scope in classrooms.

Safety Risks: Field studies pose safety risks, like accidents. Observing ecosystems may expose students to hazards, necessitating careful planning for science education safety and stability.

16. Examine the impacts of not utilizing lesson plans in teaching science

Disorganization: One impact is disorganization, lacking structure. Without plans, science lessons on physics become chaotic, reducing teaching effectiveness and student learning outcomes.

Time Wastage: Not using plans wastes time, missing schedules. Unplanned chemistry activities delay progress, challenging science education efficiency and educational stability in classrooms.

Inconsistent Content: It leads to inconsistent content, omitting topics. Science biology lessons miss key concepts, hindering teaching quality and student achievement through uneven coverage.

Poor Assessment: Without plans, assessment lacks focus, reducing validity. Science tests on ecosystems fail to measure goals, undermining teaching precision and educational progress for students.

Low Engagement: It lowers engagement, missing interactive methods. Unplanned science sessions on trade reduce student interest, impacting teaching effectiveness and learning outcomes through lack of structure.

17. The use of Logbook is meaningless to a science teacher. Verify the statement

Support for Organization: One point against the statement is organization, tracking progress. Logbooks record science lesson details, ensuring systematic teaching and educational effectiveness, refuting meaninglessness.

Accountability: They ensure accountability, documenting activities. Logbooks monitor science performance, supporting teaching quality and stability, challenging the idea of their uselessness in education.

Planning Aid: Logbooks aid planning, guiding future lessons. Recording science outcomes supports instructional strategies, proving their value and refuting meaninglessness for teachers.

Verification: The statement is false; logbooks are meaningful, enhancing science education through structure, accountability, and planning, ensuring teaching effectiveness and student progress in classrooms.

18. Account for the guidelines which may be used by a science teacher in the construction of essay type questions

Clarity: One guideline is clarity, ensuring questions are understandable. Science essays on chemistry reactions should be precise, enhancing educational fairness and teaching effectiveness through clear prompts.

Relevance: Questions must be relevant, aligning with goals. Science essays on biology ecosystems should connect to curricula, improving teaching quality and student learning outcomes through meaningful tasks.

Specificity: Specificity ensures focused responses, avoiding vagueness. Science essays on physics laws require detailed prompts, supporting educational precision and teaching impact through targeted assessment.

Variety: Including variety engages students, covering topics. Science essays on trade and pollution diversify questions, enhancing teaching engagement and educational progress through comprehensive evaluation.

Fairness: Ensuring fairness prevents bias, balancing difficulty. Science essays on environmental science should be equitable, supporting teaching equity and student achievement through balanced assessment.