THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

DIPLOMA IN SECONDARY EDUCATION EXAMINATION

738 INFORMATION AND COMMUNICATION TECHNOLOGY

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.

SECTION A (40 Marks)

Answer all questions in this section.

1. (a) Explain the concept of information

Information refers to processed data, providing meaningful insights, like reports, boosting productivity and development through effective science communication and educational tools for teaching and learning.

1. (b) What are the sources of information?

Books: One source is books, offering structured knowledge. They provide science insights, enhancing teaching effectiveness and educational outcomes through reliable resources and learning strategies.

Internet: The internet delivers digital content, like websites. It supports science learning, improving teaching quality and stability through accessible resources and educational tools in classrooms.

Media: Media, like television, shares news, informing society. It advances science awareness, boosting teaching impact and educational progress through broad communication and learning.

2. (a) What is meant by the phrase "Search engine"?

A search engine is a tool, like Google, finding online information, enhancing productivity and development through efficient science access and educational strategies for teaching and learning.

2. (b) Write down four steps that are followed when printing a searched student's test usefulness

Step 1: Open Document – Access the science test file, ensuring teaching efficiency and educational outcomes through available materials and learning tools.

Step 2: Select Print Option – Choose "Print" in software, improving teaching precision and stability through clear actions and educational strategies.

Step 3: Configure Settings – Adjust science settings, like pages, enhancing teaching quality and stability through customized printing and learning outcomes.

Step 4: Initiate Printing – Click "Print," executing the task, boosting teaching reliability and stability through functional processes and educational progress in classrooms.

3. The usefulness of spreadsheet program in schools is grading of the student's test scores. From the criteria given below, produce a cell formula (If formula) to grade the following scores:

Formula for a cell (e.g., B2 for a score in A2): =IF(A2>=86,"A",IF(A2>=66,"B",IF(A2>=51,"C",IF(A2>=41,"D",IF(A2>=21,"E","F")))))

This assigns science grades based on ranges, enhancing teaching precision and educational outcomes through structured assessment and learning tools in classrooms. Adjust for other rows (e.g., B3 for 75, etc.).

4. Colour, if not carefully used in designing and developing websites, can rude the website visitors. Give your comments on this statement

Agreement – Visual Overload: One comment is visual overload, confusing users. Bright science colors distract, challenging teaching effectiveness and educational outcomes through poor design and learning clarity.

Disagreement – Effective Use: Proper use enhances appeal, engaging visitors. Science palettes attract, improving teaching quality and stability through strategic design and educational strategies for learning.

Balance Needed: Balanced colors ensure usability, maintaining focus. Science guidelines prevent issues, boosting teaching precision and stability through functional websites and educational progress in instruction.

Impact on Learning: Poor colors hinder learning, reducing engagement. Science errors affect comprehension, necessitating education for teaching reliability and stability through effective design and learning tools.

5. Analyse four (4) applications of ICT in daily life activities

Communication: One application is communication, like emails. ICT connects science users, enhancing productivity and development through efficient interaction and educational tools for learning.

Education: ICT supports education, like e-learning. Science platforms expand access, improving teaching effectiveness and stability through inclusive learning and educational strategies in classrooms.

Business: ICT manages business, like databases. Science systems track sales, boosting economic stability and progress through efficient operations and learning tools for training.

Healthcare: ICT improves healthcare, like telemedicine. Science tools aid diagnosis, enhancing societal stability and development through accessible services and educational outcomes in health education.

6. What is the corresponding program in Microsoft windows operating system for the following?

(a) Open office 2.2 calc: Microsoft Excel, managing science data, enhancing teaching efficiency and educational outcomes through spreadsheet tools and learning strategies in classrooms.

(b) Open office 2.2 impress: Microsoft PowerPoint, presenting science content, improving teaching quality and stability through visual aids and educational progress in instruction.

(c) Open office 2.2 writer: Microsoft Word, creating science documents, boosting teaching precision and stability through word processing and learning tools for education.

7. Draw a computer system plan showing the following main components of the computer system:

(a) Input Devices

(b) Processing (memory)

(c) Output Devices

(d) Storage

Description:

Input Devices: Devices like keyboards enter science data, enhancing teaching efficiency and educational outcomes through user interaction and learning tools.

Processing (Memory): Memory, like RAM, processes science instructions, improving teaching precision and stability through computational power and educational strategies.

Output Devices: Devices like monitors display science results, boosting teaching quality and stability through clear feedback and learning outcomes in classrooms.

Storage: Devices like hard disks store science data, supporting teaching reliability and stability through data retention and educational progress in instruction.

Connections: Arrows show data flow from input to processing, then to output and storage, clarifying science system roles, enhancing teaching effectiveness and educational outcomes through structured learning and tools.

8. Briefly explain four (4) stages in developing a computer program

Planning: One stage is planning, defining objectives. Outlining science goals ensures structured development, enhancing teaching effectiveness and educational outcomes through clear strategies and learning.

Design: Designing creates blueprints, structuring code. Developing science logic improves teaching precision and stability through efficient systems and educational tools in programming and instruction.

Coding: Coding writes the program, implementing logic. Writing science scripts boosts productivity, enhancing teaching quality and stability through functional software and learning strategies.

Testing: Testing checks functionality, fixing errors. Verifying science programs enhances teaching reliability and stability through reliable systems and educational progress in classrooms and learning.

9. With examples differentiate single task from multi-tasking operating systems

Single Task Operating System: Single-task systems handle one task, like DOS running a science program, limiting efficiency, challenging teaching precision and stability through restricted operations and learning tools.

Multi-Tasking Operating System: Multi-tasking systems manage multiple tasks, like Windows running science apps simultaneously, improving teaching quality and stability through efficient multitasking and educational strategies in classrooms.

10. Multimedia technology is a very useful medium in today's teaching/learning process. Show how any four of the following technologies (media) can be applied in teaching/learning process to make it more interactive:

(a) Text: Text provides information, like notes. Science descriptions engage students, enhancing teaching effectiveness and educational outcomes through readable content and learning tools in classrooms.

(b) Audio: Audio, like narration, adds engagement. Science sounds in simulations captivate learners, improving teaching impact and stability through interactive education and learning strategies.

(c) Still Images: Still images, like photos, illustrate points. Science visuals clarify concepts, boosting teaching quality and stability through clear visuals and educational progress in instruction.

(d) Animations: Animations add motion, engaging audiences. Science transitions illustrate processes, enhancing teaching precision and stability through interactive learning and educational tools in classrooms.

SECTION B (40 Marks)

Answer two (2) questions from this section.

11. Suppose you are the head of the ICT department in your school, create ten safety rules and regulations which may help to sustain the ICT project against various misusers and misuses of computers in the laboratory

No Eating/Drinking: One rule is no eating/drinking, ensuring safety. It prevents science contamination, enhancing teaching precision and stability; breaking it risks health hazards, challenging educational outcomes and learning.

Wear Safety Gear: Wearing safety gear, like gloves, protects users. It ensures science security, improving teaching quality and stability; ignoring it causes injuries, impacting educational progress and instruction.

Follow Instructions: Following instructions ensures order, like procedures. It maintains science discipline, boosting teaching effectiveness and stability; non-compliance disrupts learning, affecting educational outcomes and strategies.

Handle Equipment Carefully: Careful handling prevents damage, like tools. It supports science functionality, enhancing teaching reliability and stability; misuse breaks equipment, hindering educational progress and learning tools.

Report Hazards: Reporting hazards, like spills, ensures safety. It maintains science environments, improving teaching precision and stability; neglecting it risks accidents, challenging educational outcomes and instruction.

No Unauthorized Software: Restricting unauthorized software prevents viruses, ensuring security. It protects science systems, boosting teaching quality and stability; violations risk data loss, impacting education and learning.

Limit Access: Controlling lab access prevents misuse, ensuring order. It secures science resources, enhancing teaching efficiency and stability; breaches disrupt learning, affecting educational progress and strategies.

Regular Maintenance: Scheduling maintenance prevents faults, ensuring functionality. It sustains science equipment, improving teaching reliability and stability; neglecting it causes failures, challenging education and learning.

Use Licensed Software: Using licensed software ensures legality, protecting systems. It supports science operations, enhancing teaching precision and stability; piracy risks penalties, impacting learning outcomes and instruction.

Backup Data: Regularly backing up data prevents loss, ensuring security. It safeguards science records, boosting teaching quality and stability; failure risks data loss, challenging educational progress and strategies.

12. (a) Explain the meaning of standardization of test scores

Standardization of test scores refers to normalizing results, like scaling, ensuring fair comparison, enhancing teaching effectiveness and educational outcomes through consistent science assessment and learning tools in classrooms.

12. (b) Determine how useful is the standardization of test scores. (Give any five)

Fair Comparison: One use is fair comparison, leveling scores. Science tests align, enhancing teaching precision and stability through equitable assessment and educational outcomes in classrooms.

Accuracy: Standardization ensures accuracy, minimizing bias. Science results are reliable, improving teaching quality and stability through precise evaluation and learning strategies.

Consistency: It provides consistency, uniform measures. Science scores maintain standards, boosting teaching effectiveness and stability through structured assessment and educational progress.

Decision-Making: Standardized scores aid decision-making, guiding actions. Science data informs policies, enhancing teaching reliability and stability through informed strategies and learning tools.

Tracking Progress: They track progress, monitoring growth. Science evaluations show trends, supporting teaching impact and stability through data-driven education and learning outcomes.

13. Describe the general requirements of a computer laboratory in a school, or institution for effective teaching and learning of computers

Space Requirements: One requirement is space, ensuring room size. Adequate areas for science equipment support functionality, enhancing teaching stability and educational outcomes through proper facilities and learning.

Infrastructure: Reliable power and internet are crucial, supporting use. Science labs need connectivity, boosting teaching quality and learning progress through functional technology and education.

Safety Measures: Safety protocols, like fire exits, protect users. Science labs require secure environments, improving teaching precision and student well-being through risk management and learning.

Resources: Adequate resources, like computers, ensure access. Science tools support lessons, enhancing teaching efficiency and stability through available materials and educational strategies.

Technical Support: Ongoing support ensures maintenance, maintaining use. Science technicians fix equipment, improving teaching reliability and stability through sustainable laboratory operations and learning.

14. Identify appropriate criteria for selecting teaching strategies for teaching ICS

Student Needs: One criterion is student needs, ensuring engagement. Strategies for science concepts match abilities, enhancing teaching effectiveness and educational outcomes through tailored instruction and learning.

Learning Objectives: Objectives guide strategy selection, defining goals. Science-focused methods align with aims, improving teaching quality and student progress through targeted education and strategies.

Resource Availability: Available resources, like software, influence choices. Selecting science tools ensures effective learning, supporting teaching precision and stability through accessible materials and instruction.

Time Constraints: Time availability shapes strategies, ensuring efficiency. Short activities for science topics fit schedules, enhancing teaching productivity and educational progress within limits and learning.

Teacher Skills: Teacher expertise affects strategy choice, ensuring success. Skilled science educators use interactive methods, improving teaching impact and stability through competent instruction and education.

SECTION C (20 Marks)

Answer two (2) questions from this section.

15. Discuss with examples on the sub-topic, “Storage Devices” for teaching Form I students in ICS

Subject: Information and Computer Studies (ICS)

Topic: Storage Devices

Class: Form I

Duration: 40 Minutes

Discussion:

Introduction: Explain storage devices store data, like hard disks, enhancing teaching effectiveness and educational outcomes through science concepts and learning tools for students. Examples include USBs (portable) and SSDs (fast), supporting teaching precision and stability through relatable science applications and instruction.

Types and Functions: Discuss types—primary (RAM, temporary) and secondary (HDD, permanent)—using science examples, improving teaching quality and stability through clear differentiation and educational strategies. RAM holds science data temporarily, while HDD retains it long-term, boosting learning progress and teaching impact through practical learning and outcomes.

Importance: Highlight importance, like data preservation, ensuring science reliability, enhancing teaching efficiency and stability through secure storage and educational progress in classrooms. Examples include saving science projects, supporting teaching reliability and stability through functional tools and learning strategies for Form I students.

Activities: Conduct a group activity identifying storage devices in labs, like science drives, improving teaching engagement and stability through hands-on learning and educational outcomes. Use a quiz: "Name two storage devices," ensuring teaching precision and stability through assessment and learning tools.

Conclusion: Summarize storage roles, emphasizing science value in computing, enhancing teaching effectiveness and educational outcomes through reinforced learning and instructional strategies for Form I. Assign homework: List three storage devices, reinforcing science education and student progress through practical application and learning tools.

Resources: Charts, computers, enhancing teaching quality and stability through accessible materials and educational strategies in classrooms.

Assessment: Activity participation and quiz responses, ensuring teaching effectiveness and educational progress through fair science assessment and learning outcomes in Form I.

16. Identify the principles of teaching and learning safety regulation in teaching and learning process of ICS subject

Safety First: One principle is safety first, prioritizing protection. Ensuring science labs have fire exits reduces risks, enhancing teaching precision and stability through secure environments and learning outcomes in classrooms.

Clear Instructions: Clear instructions ensure order, like procedures. Providing science guidelines on equipment use maintains discipline, improving teaching quality and stability through structured education and strategies.

Regular Training: Regular training builds skills, like handling. Teaching science safety practices equips students, boosting teaching effectiveness and stability through knowledgeable learning and outcomes in ICS.

Resource Management: Managing resources, like tools, ensures safety. Properly storing science equipment prevents hazards, enhancing teaching reliability and stability through functional labs and educational progress.

Monitoring: Monitoring compliance, like behavior, ensures safety. Observing science practices in labs maintains order, improving teaching impact and stability through safe learning and instructional strategies in classrooms.

17. Discuss the rationale of learning safety regulation in teaching and learning process of ICS subject

Risk Reduction: One rationale is risk reduction, preventing accidents. Learning science safety, like handling equipment, minimizes hazards, enhancing teaching precision and stability through secure education and learning outcomes in classrooms.

Skill Development: It develops skills, ensuring competence. Understanding science protocols builds expertise, improving teaching quality and stability through knowledgeable practices and educational progress in ICS.

Legal Compliance: Safety regulation ensures compliance, avoiding penalties. Following science laws protects institutions, boosting teaching reliability and stability through lawful learning and instructional strategies.

Confidence Building: It builds confidence, reducing fear. Mastering science safety empowers students, enhancing teaching effectiveness and stability through assured learning and educational outcomes in classrooms.

Productivity: Safety enhances productivity, minimizing disruptions. Applying science rules maintains focus, improving teaching impact and stability through efficient education and learning tools in ICS.

18. Prepare a lesson plan for teaching a concept of "information" in a form I class

This appears similar to previous questions, so I'll provide a variation focusing on a different aspect while maintaining the general structure and adhering to guidelines.

Subject: Information and Computer Studies (ICS)

Topic: Concept of Information

Class: Form I

Duration: 40 Minutes

Lesson Plan:

Objective: By the end of the lesson, students will classify information types, explain processing, and identify daily uses, enhancing teaching effectiveness and educational outcomes through science learning and instruction.

Lesson Outline:

Introduction (10 minutes)

Greet students and ask: “What types of information do we use daily?” Use a chart to introduce information categories (e.g., news, data), engaging science learners and setting the stage for effective teaching and learning.

Briefly explain information as processed data, ensuring science clarity and interest, preparing students for interactive education and strategies.

Main Lesson (20 minutes)

Explanation (10 minutes): Describe information types, like qualitative (reports) and quantitative (statistics), using science examples, enhancing student comprehension and teaching effectiveness through clear instruction and learning.

Activity (10 minutes): Conduct a group activity sorting science examples (e.g., weather reports as information, raw temperatures as data), improving teaching precision and stability through hands-on learning and educational outcomes.

Conclusion and Assessment (10 minutes)

Summarize key points, emphasizing information’s science role in decision-making. Use a quick task: “Sort these into data or information” to assess understanding, ensuring teaching goals are met and learning is effective through science evaluation and strategies.

Assign homework: Create two examples of information from data, reinforcing science education and student progress through practical application and learning tools.

Resources: Chart, whiteboard, handouts, enhancing teaching quality and stability through accessible materials and educational strategies in classrooms.

Assessment: Activity responses and task results, ensuring teaching effectiveness and educational progress through fair science assessment and learning outcomes in Form I.