

**THE UNITED REPUBLIC OF TANZANIA  
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA  
DIPLOMA IN SECONDARY EDUCATION EXAMINATION**

**750**

**EDUCATIONAL MEDIA AND TECHNOLOGY**

**Time: 3 Hours**

**Year: 2023**

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**Instructions.**

1. This paper consists of sections A and B with a total of **Fourteen (14)** questions.
2. Answer **all** questions from section A and **four (4)** questions from section B.
3. Section A carries **forty (40)** marks and section B Carries **sixty (60)** marks.
4. Cellular phones are **note** allowed in the examination room.
5. Write your **examination Number** on every page of your answer booklet(s).

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## **SECTION A (40 Marks)**

Answer all questions from this section. Each question carries 4 marks.

### **1. Support the statement that the current teaching and learning process has been improved by the use of computers.**

The use of computers has made it easier for teachers to access a wide variety of teaching resources. Teachers can download notes, videos, simulations, and online tutorials, enabling them to prepare rich and diverse lesson materials that improve understanding among learners.

Computers have also introduced interactive teaching methods. Teachers now use computer applications and educational software to involve students in activities such as quizzes, virtual experiments, and multimedia presentations, which increase learner participation and interest.

Another improvement is the ability to store and manage large amounts of educational data. Teachers and administrators can easily record student marks, attendance records, and personal details in computer databases, making retrieval and management of information faster and more reliable.

Lastly, computers have enhanced communication and collaboration between teachers and students. Through emails, online forums, and virtual learning platforms, students can consult their teachers outside classroom hours, while teachers can provide timely feedback and support.

### **2. Describe in brief the four distinguishing features of liquid media.**

One distinguishing feature of liquid media is that it takes the shape of its container. Unlike solid media, which retain their form, liquid media spread to fill the base and conform to the shape of whatever container they are placed in.

Another feature is that liquid media have a definite volume but no fixed shape. While the quantity remains constant, the shape adjusts according to the size and shape of the container holding it.

Liquid media also allow easy mixing of components. When different substances are added to a liquid medium, they mix evenly, which is why liquids are often used in experiments, cooking, and chemical preparations where uniform distribution is required.

Lastly, liquid media can easily be poured and transferred from one container to another. This mobility makes them convenient for laboratory use, cleaning, and certain teaching demonstrations where the transfer of materials is necessary.

### **3. Give four factors that hinder educational media and technology to ensure the retention of knowledge among the learners.**

One factor is the lack of proper training for teachers. When teachers are not well-trained in using educational media and technology, they may misuse or underutilize these tools, which reduces their effectiveness in reinforcing knowledge retention among learners.

Another hindrance is the limited availability of educational media resources. In many schools, especially those in rural areas, a shortage of computers, projectors, and audio-visual aids means that students have fewer opportunities to interact with diverse media, affecting their ability to retain information.

Poor classroom infrastructure is also a barrier. Without reliable electricity, secure storage for equipment, and adequately designed rooms for media presentations, the consistent use of educational technology becomes difficult, limiting its influence on knowledge retention.

Lastly, excessive reliance on media without active learner engagement hinders knowledge retention. If media tools are used passively, with students merely watching or listening without participating, the learning process becomes less effective, and students are likely to forget content quickly.

#### **4. Write four important procedures to be followed in preparing the user manual to be used when operating modern educational media.**

The first important procedure is to clearly identify the purpose of the educational media device. The manual should explain what the device is used for, the kind of learning activities it supports, and the benefits it offers to both teachers and learners.

Another key procedure is to list and describe all the parts and components of the media device. This includes labeling each button, port, or connection point and providing clear diagrams or images to guide users in identifying and assembling the equipment.

The third step is to provide detailed, step-by-step operating instructions. These should be organized logically, starting from switching on the device, setting it up, and performing basic operations, all the way to shutting it down safely after use.

Finally, the manual should include troubleshooting guidelines and safety precautions. This section helps users to identify common problems, correct errors, and observe safety measures while operating the equipment, protecting both the user and the device.

#### **5. Explain four aspects to be used in assessing the quality of a good chart as a teaching and learning aid.**

The first aspect is clarity of information. A good chart should present facts, figures, or concepts in a clear, simple, and direct manner, making it easy for learners to understand and remember the content without confusion.

Another aspect is the quality of visual design. The chart should use readable fonts, appropriate color contrasts, and neat, well-organized layouts. Good visual appeal helps attract learners' attention and holds their interest during the lesson.

A good chart should also be accurate and up-to-date. The information displayed should be factually correct, reflecting current knowledge and educational standards to ensure that students learn the right content.

Lastly, the size and visibility of the chart are important. A good chart should be large enough to be seen clearly by all learners in the classroom, whether they are seated near or far from the display, to support effective group learning.

## **6. Explain four types of cleanliness to be used to clean teaching and learning resources available in the school.**

One type of cleanliness is surface cleaning. This involves wiping down desks, whiteboards, models, and other classroom equipment with a clean cloth and disinfectant to remove dust, stains, and germs, keeping the learning environment hygienic.

Another type is electronic device cleaning. Computers, projectors, and calculators should be cleaned using soft, dry or slightly damp cloths, avoiding excessive moisture to prevent electrical hazards and prolong the lifespan of the devices.

Storage area cleanliness is also necessary. Teaching aids stored in cupboards, shelves, or cabinets should be periodically removed, dusted, and neatly arranged to prevent damage and ensure that they remain in good, usable condition.

Lastly, cleanliness of outdoor resources is essential. Equipment used for sports, agricultural lessons, or science fieldwork should be cleaned with appropriate solutions after use, ensuring they are safe and ready for the next learning activity.

## **7. Suggest four ways teachers could use to acquire teaching and learning materials easily with minimum cost.**

One way is to improvise teaching aids using locally available materials. Teachers can create charts, models, and demonstration kits using resources like paper, cardboard, bottle tops, and sticks, which are often free or inexpensive.

Another strategy is to borrow or share resources with neighboring schools. By collaborating, schools can lend and exchange equipment, books, and teaching aids, reducing the need for each institution to purchase everything independently.

Teachers can also download free educational resources from the internet. Numerous websites offer printable charts, digital textbooks, and lesson plans at no cost, making it easier for teachers to access updated and diverse teaching materials.

Lastly, teachers can engage parents and the community in contributing resources. Parents can provide recyclable materials, while local businesses might donate items like old computers, boards, or stationery, supporting classroom needs without major expenses.

## **8. Explain four benefits of using teaching and learning media during lesson presentation.**

One benefit is that teaching media make abstract concepts more concrete. Complex ideas in subjects like science or geography can be simplified using diagrams, videos, or physical models, improving learners' comprehension and interest.

Teaching media also accommodate different learning styles. Visual learners benefit from images and charts, auditory learners from recorded explanations, and kinesthetic learners from interactive simulations, ensuring no learner is left behind.

Another advantage is that media increase learners' motivation. The use of videos, animations, and games creates a lively classroom atmosphere, making students eager to participate and reducing boredom.

Lastly, media improve the retention of knowledge. When learners receive information through multiple senses seeing, hearing, and interacting they are more likely to remember and apply what they have learned in real-life situations.

#### **9. Explain four disadvantages of using printed media during teaching and learning process.**

One disadvantage is that printed media can become outdated. Textbooks and printed charts might contain information that is no longer accurate, and updating them requires reprinting, which can be costly and time-consuming.

Another drawback is limited interactivity. Printed materials present information passively, offering fewer opportunities for learner participation, which can reduce engagement and lower the chances of active learning.

Printed media also lack multimedia features. Unlike videos or interactive software, printed materials cannot incorporate sound, motion, or animation, making it harder to explain dynamic or complex processes effectively.

Lastly, overreliance on printed materials can contribute to environmental problems. Excessive printing uses large amounts of paper, leading to deforestation and waste if not managed responsibly within schools and institutions.

#### **10. Provide four materials to be used by teachers when improvising teaching and learning aids for classroom presentation.**

One useful material is cardboard, which can be easily cut and shaped into charts, models, and diagrams for displaying information visually during lessons.

Paper is another versatile material. Teachers can use plain, colored, or recycled paper for creating flashcards, labels, and instructional posters that support classroom teaching.

Old newspapers and magazines can also be used. They provide images and text clippings that teachers can cut out and use in lessons for storytelling, environmental education, or current affairs discussions.

Lastly, bottle tops and sticks are valuable improvisation materials. They can be assembled into counting aids, games, and models for mathematics, science, or language lessons, reducing the need for expensive store-bought teaching aids.

### **SECTION B (60 Marks)**

Answer all questions from this section. Each question carries 15 marks.

#### **11. Explain reasons for using colours when designing graphic materials for classroom presentation.**

Using colours in graphic materials helps to attract and maintain learners' attention. When colours are applied effectively, they make teaching aids more visually appealing, drawing students' focus to important information and keeping them interested throughout the lesson.

Colours also assist in organizing and categorizing information. Different colours can be used to separate headings, subheadings, and examples, making it easier for learners to follow the structure of a topic and understand how different parts of the lesson are related.

Another reason for using colours is to improve memory retention. Studies have shown that learners are more likely to remember information presented in colour compared to plain text. Colours stimulate the brain and create strong mental associations with the content being taught.

Additionally, colours help to clarify meaning and emphasize key points. Important concepts, definitions, or figures can be highlighted using bright or contrasting colours to signal their significance, ensuring that learners recognize and remember these details.

Lastly, colours enhance the aesthetic value of graphic materials. Attractive and well-designed teaching aids motivate students to participate actively and enjoy the learning process, reducing classroom boredom and making lessons more effective.

## **12. Explain the significance of periodic cleanliness of the teaching and learning resources.**

Periodic cleanliness of teaching and learning resources ensures that these materials remain in good working condition. Regular cleaning prevents the accumulation of dust, dirt, and stains, which can damage teaching aids like charts, models, and electronic devices, thereby extending their lifespan.

Clean teaching resources contribute to a healthy learning environment. When resources such as desks, books, and visual aids are kept clean, they reduce the risk of spreading germs and infections among learners and teachers, promoting good hygiene practices within the school.

Maintaining cleanliness also improves the clarity and effectiveness of teaching materials. Dirty or smudged charts, diagrams, or screens can make it difficult for learners to see or understand information properly, which interferes with the learning process.

Periodic cleaning enhances the general appearance of the classroom. Well-maintained resources and a tidy environment create an orderly atmosphere that encourages learners to take their studies seriously and develop respect for school property.

Lastly, regular cleaning fosters responsibility and discipline among learners. When students are involved in keeping their learning tools clean, they learn to value resources, take care of communal property, and develop a sense of ownership over their learning environment.

### **13. Explain the usefulness of traditional educational media and technology in the teaching and learning process.**

Traditional educational media such as chalkboards, charts, real objects, and storytelling play an important role in simplifying the teaching of abstract ideas. These tools help teachers explain difficult concepts in a familiar and understandable way, especially in schools with limited access to modern technology.

They also support participatory learning. Traditional tools often encourage learners to engage actively in lessons, for instance through role-plays, group discussions, or handling real objects during demonstrations, which improves comprehension and retention of knowledge.

Another usefulness is their affordability and accessibility. Traditional media are often made from locally available materials, making them affordable for schools and teachers, especially in rural areas where modern equipment might be expensive or unavailable.

Traditional educational media also preserve and promote cultural heritage. Using songs, proverbs, and storytelling as teaching tools helps learners appreciate their community values and history, while also connecting lessons to everyday life experiences.

Lastly, these media remain dependable even without electricity or internet connectivity. In situations where modern technologies cannot function, traditional tools ensure that teaching and learning can continue without interruption.

### **14. Elaborate five important guidelines to be followed when using an overhead projector (OHP) in the teaching and learning process.**

One important guideline is to ensure that the projection surface is clean and smooth. The screen or wall where the image is displayed should be free from dirt, wrinkles, or irregularities to provide a clear and sharp display for learners.

Another guideline is to position the overhead projector at the appropriate distance from the screen. The image should be neither too small nor too large, and it should be properly centered to ensure that all learners in the classroom can see it clearly without strain.

Before using the OHP, teachers should organize and check their transparencies. The content should be neatly written or printed in legible fonts and sizes, with important points highlighted to guide learners through the presentation effectively.

Teachers should also avoid blocking the light beam while presenting. Standing in front of the projector or leaning over the transparencies can obscure the display and distract learners. Proper positioning ensures uninterrupted visibility of the projected content.

Finally, the room lighting should be adjusted appropriately. While the classroom should not be completely dark, the lighting needs to be dimmed enough to enhance the visibility of the projected image without making it too difficult for learners to take notes or participate in discussions.