**KENYA JUNIOR *S*CHOOL EDUCATION ASSESSMENT**

**KEJSEA 2025**

**GRADE 9**

**912/2 PRETECHNICAL STUDIES (PROJECT)**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**School: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Duration:** 2 HOURS EACH TASK  
**Total Marks:** 100

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SCORE RANGE | 80-100 | 60-79 | 40-59 | 0-39 |
| LEVEL | EXCEEDING EXPECTATION | MEETING EXPECTATION | APPROACHING EXPECTATION | BELOW EXPECTATION |
| LEARNER’S SCORE |  |  |  |  |
| TICK LEVEL |  |  |  |  |

**Project Overview:**

This project will assess the learner’s ability to apply their knowledge of computer concepts learned. The focus will be on practical skills like programming, problem-solving, digital literacy, and understanding core computer concepts.

**Instructions:**

* **Duration:** 2 hours
* **Tools Needed:** A computer with an internet connection, programming environment (such as Python, Java, or Scratch), and any required software for the project.
* **Resources Allowed:** Reference notes, textbooks, and online resources.
* **Deliverables:** A working project file or program code (for software projects) or digital presentation/report (for non-programming tasks).

**TURN OVER**

**Part 1: Programming Task (60 marks)**

**Task 1: Create a Simple Program**  
Objective: Demonstrate the ability to write and debug a program.

* **Topic Options:**
  + **Create a Calculator:** Write a Python or Java program that can perform basic arithmetic operations (addition, subtraction, multiplication, division). The program should have a user-friendly interface, and allow for repeated operations without restarting the program.
  + **Student Grade System:** Develop a program that takes student grades as input and calculates the average. Based on the average, the program should categorize the performance (e.g., Excellent, Good, Needs Improvement).
* **Requirements:**
  + Program must handle input and output clearly.
  + The user interface should be easy to interact with (CLI or GUI).
  + Include error handling for invalid inputs (e.g., division by zero, invalid data).

**Part 2: Research and Documentation (40 marks)**

**Task 2: Digital Literacy & Ethics in Technology**  
Objective: Demonstrate knowledge of digital literacy and ethical considerations in the use of technology.

* **Assignment:**
  + Write a 1-2 page report or create a digital presentation (slides or document) that discusses:
    - The role of computers and technology in everyday life.
    - How technology can impact education, the workforce, and personal life.
    - Ethical concerns related to technology, such as privacy, cybersecurity, and data protection.
    - Practical ways to stay safe online and avoid cyberbullying.
* **Evaluation Criteria:**
  + Clarity of ideas.
  + Depth of understanding on digital literacy topics.
  + Use of relevant examples or case studies.
  + Neatness and organization of the report or presentation.

**Assessment Rubric:**

| **Criteria** | **marks** |
| --- | --- |
| **Part 1: Programming Task** | 40 |
| Functionality of program | 20 |
| Correct implementation of features | 10 |
| Code readability & comments | 10 |
| **Part 2: Research and Documentation** | 20 |
| Understanding of digital literacy and ethics | 10 |
| Quality of presentation or report | 5 |
| Clarity and structure of ideas | 5 |
| Task 2 | 20 |
| Task 3 | 20 |

**Additional Notes:**

* Ensure that you submit all files as required (e.g., source code, report, presentation).
* Be mindful of time management: allocate enough time for both tasks.
* Plagiarism is strictly prohibited. Ensure all work is original or properly cited.

**Task 2:(20 marks)**

* + **Drawing Exercise:**
    - Draw an oblique projection of a rectangular box with dimensions 5 cm x 3 cm x 2 cm.

**Task 3: (20 marks)**

* + **Project Design:**
    - Design a simple hand tool that can be used to collect rainwater for domestic use. Include a labeled sketch and list the materials required.

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**MARKING SCHEME**

**Task 1: Programming Task (40 marks)**

**Task 1: Create a Simple Program**

* **Rubric for Part 1:**
  + **Functionality (20 marks):**
    - **30 marks:** The program functions as expected without errors, handling edge cases like division by zero or invalid inputs.
    - **20 marks:** The program works but lacks full functionality (e.g., missing some operations or handles errors poorly).
    - **10 marks:** The program is incomplete or contains significant errors, making it unusable.
  + **Correct Implementation of Features (10 marks):**
    - **20 marks:** All required features (input handling, correct calculations, error handling) are fully implemented.
    - **15 marks:** Some features are missing or only partially implemented.
    - **5 marks:** Major features are missing, and the program cannot be used as intended.
  + **Code Readability and Comments (10 marks):**
    - **10 marks:** Code is well-structured, with proper indentation, clear variable names, and appropriate comments.
    - **5 marks:** Code is readable but lacks proper comments or has some indentation issues.
    - **0 marks:** Code is hard to understand, lacking structure or comments.

**Part 2: Research and Documentation (10 marks)**

**Task 2: Digital Literacy & Ethics in Technology**

* **Answer Outline:**
  + - 1. **Role of Computers and Technology:**
  + Computers and technology are central to modern life. They are used in education (online classes, research), in the workforce (office tools, automation), and in daily life (social media, shopping).
  + Example: The rise of e-learning platforms like Coursera and Khan Academy, which provide global access to education.

**2. Impact of Technology:**

* + **Education:** Technology allows access to digital resources, online courses, and interactive learning tools.
  + **Workforce:** Many jobs now require digital skills (e.g., data entry, software development).
  + **Personal Life:** Social media, smartphones, and online services shape how we communicate and shop.

**3. Ethical Concerns:**

* + **Privacy:** Data breaches and surveillance have raised concerns about how personal data is handled (e.g., Facebook data scandal).
  + **Cyber security:** The rise of hacking, phishing, and ransomware attacks poses a threat to both individuals and organizations.
  + **Data Protection:** Laws like GDPR (General Data Protection Regulation) are in place to safeguard personal data.

**4. Staying Safe Online:**

* + Use strong, unique passwords for each account.
  + Be cautious about sharing personal information online.
  + Report any suspicious or harmful behavior (e.g., cyberbullying, fraud).
  + Regularly update software to avoid security vulnerabilities.
* **Rubric for Part 2:**
  + **Understanding of Digital Literacy and Ethics (10 marks):**
    - **20 marks:** The report/presentation provides a deep understanding of digital literacy, with relevant examples and clear explanations of the ethical implications of technology.
    - **15 marks:** The report/presentation covers most marks but may lack depth or detail in certain areas.
    - **10 marks:** The report/presentation covers the basics but lacks understanding of key issues.
  + **Quality of Presentation or Report (5 marks):**
    - **10 marks:** Well-organized, clear structure, with a logical flow of ideas.
    - **7 marks:** Mostly organized, but could use more clarity or better structure.
    - **5 marks:** Disorganized or difficult to follow.
  + **Clarity and Structure of Ideas (5 marks):**
    - **10 marks:** Ideas are clearly expressed and well-supported with examples.
    - **7 marks:** Ideas are clear but lack sufficient explanation or examples.
    - **5 marks:** Ideas are unclear or poorly supported.

**Task 2: Drawing Exercise**

The student is expected to draw an **oblique projection** of a rectangular box with the given dimensions.  
**Dimensions:**

* Length: 6 cm
* Width: 4 cm
* Height: 3 cm

For the correct drawing:

* The length, width, and height of the box should be represented at an appropriate angle (typically 45°) to depict the 3D nature of the box.
* Proper labeling of the dimensions is necessary.
* Ensure that all lines are drawn with appropriate thickness and style.

**Task 3: Project Design**

**Design:** A simple hand tool for gardening

* **Tool Name:** Garden Soil Aerator
* **Purpose:** To aerate soil by creating small holes to allow better water and air penetration for plant roots.

**Materials:**

* Wooden handle (Length: 50 cm)
* Metal prongs (3 prongs, each 10 cm in length)
* Metal shaft (connected to the handle)
* Screws to attach prongs to the shaft

**Description:** The aerator consists of a wooden handle and three metal prongs. The prongs are evenly spaced and attached to a metal shaft. The tool is used to loosen the soil by pushing the prongs into the ground, improving soil aeration for better root growth in gardens.

**Final score Breakdown:**

| **Criteria** | **Marks** | **Comments** |
| --- | --- | --- |
| **Part 1: Programming Task** | 40 | Evaluate functionality, features, and code quality. |
| **Task 2:** |  |  |
| **Part 2: Research and Documentation** | 20 | Evaluate the understanding and clarity of the report/presentation. |
| **Drawing** | 20 |  |
| **Making a hand tool** | 20 |  |
| **Total** | 100 | Total marks for the project. |

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