Candidate's Name		Assessment Number	
School Name		School Code	
Candidate's Signature		Date	

KENYA JUNIOR SCHOOL EDUCATION ASSESSMENT

912/1   **PRETECHNICAL STUDIES** (theory)

PAPER 1   **TERM 2 ENDTERM 2025**

Time: 1 hour 40 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and assessment number in the spaces provided above.
2. Write the name and code of your school in the spaces provided above.
3. Sign and write the date of the assessment in the spaces provided above.
4. This paper consists of two sections: **A** and **B**.
5. Section A comprises **Multiple Choice Questions**.
6. Section B comprises **Short Structured questions**.
7. Answer **ALL** the questions in section A on the separate **ANSWER SHEET** provided.
8. Answer **ALL** the questions in section B in the spaces provided in this question paper.
9. Do **NOT** remove any page from this question paper.
10. Answer all questions in English.

For official use only: SECTION B

Task	Question	Candidate's Score per Question	Maximum Score per Question	Candidate's Score per Task
Task 1	31		4	20
	32		3	
	33		4	
	34		4	
	35		5	
	Subtotal Task 1		**20**	
Task 2	36		3	15
	37		3	
	38		2	
	39		4	
	40		3	
	Subtotal Task 2		**15**	
Task 3	41		2	15
	42		3	
	43		1	
	44		2	
	45		2	
	46		2	
	47		1	
	48		1	
	49		2	
	Subtotal Task 3		**16**	
TOTAL			**51**	**51**

This paper consists of 13 printed pages. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A (30 marks)

Answer All questions in this section on the answer sheets provided.

1. Pre-Technical Studies equips learners with valuable skills for future careers. Which of the following best describes a key outcome of learning Pre-Technical Studies?
   A. Memorizing historical facts about technology.
   B. Acquiring practical skills for problem-solving and innovation.
   C. Becoming an expert in theoretical physics.
   D. Developing solely academic research abilities.

2. A learner is about to mark out the shape of a new shelf on a piece of timber before cutting it. Which one of the following tools is most appropriate for precisely marking the timber?

| A. | B. | C. | D. |

3. In technical drawing, different lines have specific meanings. Identify the type of line that is correctly matched with its description.

Types of line	Description
A. Hidden detail line	Continuous thin line
B. Cutting plane line	Long chain thin line, thickened at ends
C. Dimension line	Thin short dashes
D. Centre line	Continuous thick line

4. A designer is planning to create lightweight, durable, and corrosion-resistant parts for an aircraft. She is considering various materials. Which material is best suited for this purpose?
   A. Cast iron.   B. Mild steel.   C. Aluminum alloy.   D. Copper.

5. A Grade 9 learner needs to securely join two pieces of metal temporarily for welding. He needs a tool that can hold them firmly in place. Choose from the following, the appropriate tool to use for holding the metal pieces.

| A | B | C | D |

6. Learners in a workshop are using power drills. To prevent eye injuries from flying debris or dust, their teacher insists they wear protective gear. What is the most important personal protective equipment they should wear in this situation?
   A. Safety gloves.
   B. Safety goggles.
   C. Dust mask.
   D. Ear defenders.

7. A construction worker is mixing materials to create concrete for a foundation. He knows he needs aggregates, binding material, and water. Which of the following is the essential binding material used for making concrete?
A. Sand.
B. Gravel.
C. Cement.
D. Water.

8. A Grade 8 learner has finished using a chisel to carve wood. To protect the sharp edge and ensure safety, she needs to store it correctly. Which of the following is the correct way of protecting the sharp edge of the chisel when storing?
A. Leave it exposed on the workbench.
B. Store it in a tool box with other sharp tools. C. Cover the cutting edge with a guard or sheath.
D. Place it in a drawer with the blade facing up.

9. A potter is explaining how various products like teacups, floor tiles, and sanitary ware are made. He mentions they all originate from a specific category of materials. Which one of the following combinations consists only of **ceramic materials**?
A. Rubber, glass, plastics.
B. Clay, bricks, concrete.
C. Porcelain, glass, tiles.
D. Wood, steel, cement.

10. A learner needs to cut a thin, flexible plastic sheet for a model. He selects a tool that resembles large, heavy-duty scissors designed for cutting sheet materials.

The tool shown above is used to cut:

A. Wood planks.   B. Thick metal rods.   C. Sheet metal.   D. Fabric.

11. During a safety audit in a manufacturing plant, several potential fire hazards were identified. The manager wants to address causes related to human action. Which of the following is a possible cause of a fire outbreak related to worker action?

A. Spontaneous combustion of chemicals.
B. Faulty electrical wiring.
C. Leaving flammable materials near heat sources.
D. Lightning strike.

12. Firefighters are battling a fire in a building. They are explaining their strategy to a new recruit, mentioning the principles of putting out fires. Which one of the following shows the correct methods of putting off fire by removing elements of the fire triangle?
A. Cooling, fanning, igniting.
B. Smothering, cooling, adding fuel.
C. Starving, smothering, cooling.
D. Heating, starving, smothering.

13. In a plumbing workshop, a learner needs to hold pipes firmly while joining them. He is looking for a tool specifically designed to grip and turn pipes. The following are general-purpose holding tools **except**:
A. Vice. B. Pliers. C. Pipe wrench. D. Clamp.

14. Many companies are now collecting used plastic bottles and converting them into new products like fleece jackets or outdoor furniture. The primary reason for recycling these materials is to:
A. Increase the cost of new products.
B. Deplete natural resources faster.
C. Reduce environmental pollution and conserve resources.
D. Create more waste for landfills.

15. A carpenter is choosing timber for outdoor decking. He needs wood that is durable and resistant to decay, even if it grows slowly. Which of the following are characteristics of the type of wood he should choose (hardwood)?
A. Needle-like leaves, faster growth, light weight.
B. Broad leaves, slow growth, dense structure.
C. Conical shape, fast growth, soft texture.
D. Easily absorbs moisture, quick to dry, pale colour.

16. Kevin has just graduated and wants to start his own mobile repair business. He is naturally creative, takes initiative, and is not afraid of challenges. Which one of the following characteristics is most essential for Kevin to become a successful entrepreneur?
A. Being highly risk-averse.
B. Relying heavily on others for decisions.
C. Possessing strong leadership and risk-taking abilities.
D. Preferring stable, predictable routines.

17. Jane wants to open a small bakery. She is considering two locations: one in a busy town center with many competitors and high rent, and another in a quiet residential area with fewer potential customers but lower rent. Which of the following factors would most likely discourage Jane from choosing the busy town center location?
A. High demand for bakery products.
B. Good access to suppliers.
C. High operating costs (e.g., rent, competition).
D. Availability of skilled labour.

18. Biashara Limited provides IT services. As of 31st December 2024, their assets included Computers (Ksh 200,000) and Cash (Ksh 50,000). Their liabilities were a Bank Loan (Ksh 80,000). Which of the following represents the owner's capital for Biashara Limited?
A. Ksh 200,000
B. Ksh 250,000
C. Ksh 170,000
D. Ksh 80,000

19. Mr. Omondi receives regular payments from his tenants for a house he owns. This income does not require his active daily involvement. This type of income, where one receives earnings without directly working for it, is classified as:
A. Active income.
B. Passive income.
C. Salary.
D. Wages.

20. Sarah and David are discussing their personal spending habits. Sarah noticed that David often buys things impulsively and ends up borrowing money before his next allowance. From the following practices, identify what Sarah could have observed in David that indicates an unethical budgeting or spending practice. He:
A. Saved a portion of his allowance first.
B. Created a shopping list before going to the supermarket.
C. Spent money without tracking where it went.
D. Compared prices before making a purchase.

21. A small hardware shop in a rural area needs to replenish its stock of tools and building materials. They rely on a larger supplier who offers various benefits to small businesses. Which one of the following services offered by a wholesaler is the retailer most likely to benefit from to minimize upfront costs and manage cash flow?
A. Providing consumer feedback reports.
B. Offering credit facilities.
C. Conducting market research for the retailer.
D. Setting the retail prices for the goods.

22. Amina wants to start a small online business but is struggling to come up with unique product ideas. She has limited funds but a lot of free time to research. Which of the following is a key source of business ideas Amina can explore?
A. Ignoring what competitors are doing.
B. Analyzing trends and identifying unmet customer needs.
C. Only focusing on expensive, high-profit products.
D. Waiting for an investor to give her an idea.

23. A user is interacting with a computer, moving a cursor on the screen to select items and open programs. He is using a device that fits in his hand. The following pictures show computer input devices. Which one is a **pointing device**?

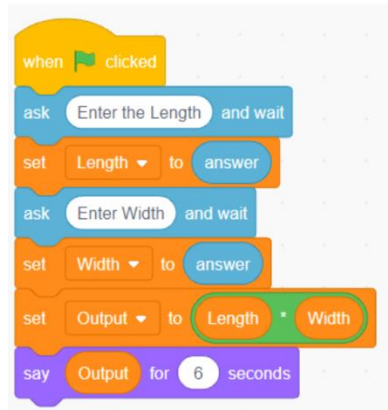| **A**	**B**	**C**	**D**

24. A learner needs to buy a computer primarily for graphic design, video editing, and complex simulations. She needs something with powerful processing and large memory, but portability is not a primary concern. The computer that is most appropriate for this use is a:
A. Laptop computer.   B. Tablet computer.   C. Desktop computer.   D. Smartphone.

25. Learners are on a school trip visiting a computer lab used for server management. The lab contains many sensitive electronic components. Their teacher gives them safety instructions. The following are safety precautions they should observe while in the lab **except**:

A. Avoiding eating or drinking near the computers.

B. Touching exposed wires or components.

C. Keeping the workstation tidy.

D. Reporting any faulty equipment immediately.

26. Mr. Ben, an online entrepreneur, regularly receives payments and sends money through his mobile phone. He wants to protect his financial transactions from unauthorized access. Which one of the following measures can Mr. Ben use to secure his transaction details from cybercriminals?

A. Sharing his mobile PIN with a trusted friend.

B. Using complex, unique passwords and two-factor authentication.

C. Connecting to public Wi-Fi networks for all transactions.

D. Ignoring software updates for his mobile banking app.

27. A learner is typing a formal letter in a word processor. She has just finished a paragraph in lowercase and wants to start the next paragraph with a capitalized word, then continue with small letters. Which key on the computer keyboard should the learner press once to capitalize only the first letter of the next word, without affecting the rest of the text?

A.	Caps Lock.
B	Shift key.
C	Ctrl key.
D	Alt key.

28. The school librarian wants a computer program that can help her organize the school's book inventory, track borrowed books, and generate overdue reports. Identify the category of computer software that the librarian needs for this specific task.

A. System software.   B. Programming software.   C. Application software.   D. Operating system.

29. A Grade 8 learner is learning to program a simple game. She uses a visual block-based interface where she drags and connects blocks like "move 10 steps" and "repeat until" to create actions.

The instructions created by the learner are part of a:

A. Text-based programming language.

B. Command-line interface.

C. Visual programming environment.

D. Database management system.

30. A Pre-Technical Studies teacher is showing different computer icons on a projector. She asks the class to identify the icon used for saving a document after making changes. Which icon would be used to **save** a document in word processing?

| A | B | C | D |

SECTION B (50 marks)

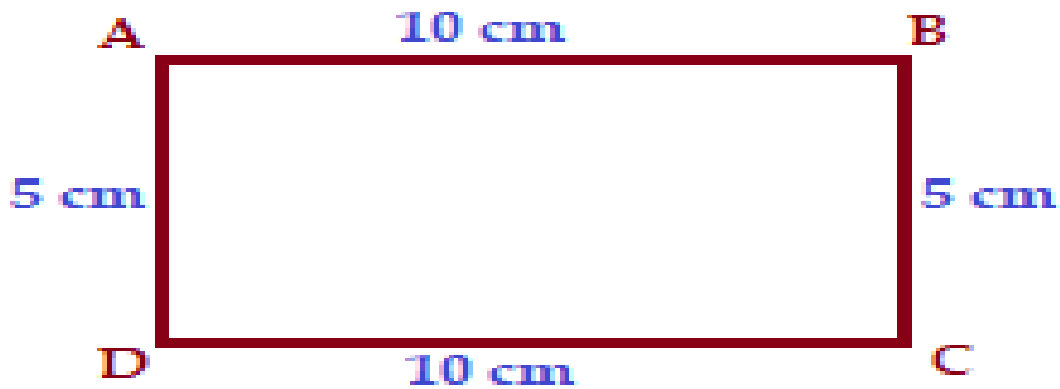*Answer **ALL** the questions in this section in the spaces provided.*

Task 1: Technical Drawing & Materials (20 marks)

31. *A Grade 9 learner is comparing two types of woods for use in furniture work.* State two differences between **softwood** and **hardwood.** (4 marks)

Softwood	Hard wood
1.	1.
2.	2.

a) Mention two examples of hard wood trees in Kenya. (2 marks)

_____.

_____.

32. *Your teacher has given you a rectangular piece of paper measuring 10 cm by 5 cm and asked you to draw a smaller version of it accurately for a model.*

Reduce the rectangular shape above to a scale of 1:2. (3 marks)

33. *Your Pre-Technical Studies teacher introduces a workshop tool that has two distinct parts, often used for gripping and cutting wires.*

a) Identify the parts labeled P and Q. (2 marks)

P: _____ Q: _____

b) State two uses of the tool shown above. (2 marks)

_____

_____

34. *Your school is participating in a recycling initiative to help the environment. They have collected various waste materials from classrooms.*

a) Give two non-metallic materials that can be recycled. (2 marks)

_____

_____

b) Name one item that can be made from each material identified in 34(a). (2 marks)

_____

_____

35. *As part of a design project, you need to quickly sketch a basic 3D shape without using any drawing instruments, showing its depth.* Make a freehand sketch of a cube whose side is 3.0 cm in oblique projection. (5 marks)

36. *A timber dealer explains to a customer that timber must be **'seasoned'** before it can be used for building furniture.* State three reasons for seasoning timber. (3 marks)

_____

_____

_____

37. *You are designing a square-shaped decorative tile for a craft project. You need to ensure all sides are exactly 4 cm.* Construct a square of length 4 cm. (3 marks)

38. *Grade 7 learners visited two different factories in their town, one small and one very large, and wanted to describe their differences in size.* State two factors that the learners considered when comparing the size of the factories. (2 marks)

_____

_____

39. *Kamau, a fruit vendor, wants to know if his business was profitable in the past year. He collected the following financial information for the year ending 31st December 2023.*

Item	Ksh
Revenues for the year	50,000
Cost of sales	20,000
Rent	6,000
Salaries	10,000
Transport expenses	1,500

Prepare a simple Income Statement for Kamau for the year ending 31st December 2023. (4 marks)

40. *Some consumers have reported that a few businesses in their area are selling products at excessively high prices or with hidden charges.* State two ways in which the government of Kenya protects consumers against such exploitation. (3 marks)

_____

_____

_____

41. *Mwanesi is an upcoming entrepreneur specializing in juice processing. She wants to sell her juice in a specific location or to a particular group of customers.* Outline two factors Mwanesi should consider when selecting a suitable market for the juice. (2 marks)

_____

_____

42. *Abel plans to buy a smartphone worth Ksh.18,000 in four months. He has targeted to save at least Ksh 5,000 per month to raise the amount required.*

a) Use the information above to formulate Abel's financial goals by filling in the following table. (2 marks)

Goal	Time frame	Amount required	Action plan

b) Outline one benefit that Abel will get from setting his financial goal. (1 mark)

_____

43. *The deputy headteacher would like to display information stored in a computer, such as a presentation, during a parent's day meeting for a large audience to see clearly.* State one computer hardware device that the deputy headteacher may use to display the information. (1 mark)

_____

44. *Your teacher shows you different computer parts and asks you to identify their function. You need to categorize them based on whether they put information into the computer, store it, or show it out.* Match each of the following computer hardware devices with their respective category. (2 marks)

Input

Output

Storage

45. *Mwengo Company wants to engage directly with its customers online, share updates, and receive feedback instantly. They are exploring popular online platforms.* Name two social media platforms that the company may use for networking with its customers. (2 marks)

_____

_____

46. *Your computer is off, and you need to use it to complete an assignment. You remember the steps taught in class but need to put them in the correct sequence.* The following instructions were written to guide learners on how to start up and use a computer. They are not arranged in the correct order.

(i) Shut down the computer after use.

(ii) Press the power button on the computer.

(iii) Wait for the computer to start up.

(iv) Use the computer to perform a task.

Arrange the instructions in the correct order. (2 marks)

1. _____

2. _____

3. _____

4. _____

47. *You want to create simple animations or games using a block-based coding environment that allows you to drag and drop commands rather than typing code.* State one example of a **Visual Programming Application** that can be used to create such instructions. (1 mark)

_____

48. *Benard has discovered that someone has created a fake social media account using his name, photos, and other personal details, pretending to be him.* State the type of **online threat** Benard is experiencing. (1 mark)

_____

49. *Grade 9 learners prepared the following shopping list in a spreadsheet application to calculate the total cost automatically.*

A	ITEM NAME	UNIT COST	NUMBER OF ITEMS	TOTAL COST
1	Ruler	50	5	250
2	Drawing book	100	10	1000
3	Pencils	30	5	150
4	Rubber	20	2	40
5	**GRAND TOTAL COST**			**1440**

Write the formula that the learners would use to calculate the grand total cost in cell **D6**. (2 marks)

_____

50. *A Pre-Technical Studies teacher created a basic program to categorize learner performance in an assessment. The program's logic is shown below, with conditions for "meeting expectation" and "approaching expectation".*

```
Start
Enter score
If score > 50
    Output X
Else
    Output Y
End
```

Complete the instructions by writing the correct output for X and Y based on the given criteria: Scores > 50: learner is meeting expectation. Scores < 50: learner is approaching expectation.

X: _____ (1 mark)

Y: _____ (1 mark)

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