

ANSWERS TO ASSESSMENT QUESTIONS

GRADE 7

1.1 Introduction to pre-technical studies

SECTION A

1. B
2. C
3. C
4. B
5. A.
6. D

SECTION B

7. a) Making simple items – Technical Studies
Advertising them online – Computer Studies
Selling them to the community – Business Studies
b) Technical Studies – Develops practical skills for making quality products.

Computer Studies – Enables learners to advertise and communicate using digital technology.

Business Studies – Teaches learners how to market, sell products, and make profits.
8. Components involved
 - Drawing - Technical Studies
 - Using a computer/digital device - Computer Studies
 - Using tools for repair – Technical studies
9. Business Studies
10. Technical Studies
11. Developing practical skills through repairing furniture.
Developing digital literacy by using computers.
Promoting entrepreneurship and business skills.
12. Computer Studies
Business Studies
13. Equips learners with practical and technical skills.
Develops entrepreneurship and employability skills.
14. Develops practical problem-solving skills.

15. Develops digital literacy and ICT skills.
16. Carpenter, Electrician, Computer Technician, Entrepreneur (Businessperson)
17. a) Pre-Technical Studies equips learners with practical and technical skills. True
- c) Technical Studies involve handling tools and materials safely. True
- d) Business Studies helps learners understand entrepreneurship and trade. True

1.2 SAFETY IN AN IMMEDIATE ENVIRONMENT

SECTION A

1. A
2. A
3. B
4. A
5. A

SECTION B

6. It leaves a hidden, active risk of electric shock, electrocution, or fire that could injure or kill an unsuspecting coworker or student who touches them or spills liquid near them.
7. a) Heavy-duty protective gloves
- Gumboots (or sturdy closed shoes)
- Face masks
- High-visibility aprons/jackets
- b) Sharp objects (broken glass, rusty nails, razor blades)
- Toxic waste, rotting matter, or harmful chemicals
- Airborne dust and pathogens
8. The head of the hammer could fly off or cause injury.
9. Slippery surface / Slip and falling hazard.
10. Water is a good conductor of electricity. Plugging in an appliance with wet hands can cause electric shock or severe electrocution.

11. Cyberbullying, Malware / Viruses / Ransomware, Phishing scams (fraudulent links/emails), Online predators / Grooming, Identity theft / Loss of personal data.

12. i) Exposed electrical wires

ii) Slippery or wet floors

iii) Open pits, trenches, or manholes

iv) Sharp objects lying around (e.g., broken glass, nails)

v) Poorly lit pathways or corridors

vi) Unsecured heavy objects that could fall (e.g., loose roofing sheets, leaning trees)

13. i) To protect eyes from flying debris: Safety goggles shield the eyes from metal sparks, filings, and sharp debris that could cause blindness or severe injury.

ii) To prevent hand injuries: Gloves protect hands from sharp metal edges, burns, and cuts during handling.

iii) To promote overall personal safety: Wearing Personal Protective Equipment (PPE) minimizes the severity of potential workplace accidents.

14. i) Panicking instead of staying calm during an emergency.

ii) Running toward a blocked exit instead of using alternative clear emergency routes/exits.

Importance of keeping exits clear:

i) Ensures quick and smooth evacuation without delays.

ii) Prevents crushing, tripping, or dangerous overcrowding at exit points during panic situations.

15. Safety increases efficiency, productivity, and timely completion of work by preventing downtime caused by accidents.

I. Prevents workplace injuries, illnesses, and fatalities.

II. Increases productivity and prevents delays caused by accidents.

III. Reduces financial losses from medical costs and equipment repairs.

IV. Boosts morale and confidence among workers.

V. Protects tools, equipment, and property from damage.

16. i. Prevents trip and fall accidents: Keeps pathways clear of obstructions.

ii. Ensures quick emergency evacuation: Allows unhindered movement if an emergency occurs.

iii. Saves time: Makes tools, materials, and equipment easy to locate.

iv. Protects materials and property: Reduces the risk of damage or loss of construction items.

17. i. Cuts, punctures, or physical injuries from sharp or misused tools.

ii. Eye injuries from flying debris, sparks, or metal chips (due to lack of safety goggles).

iii. Burns or chemical spills on skin/clothing (due to lack of protective wear).

iv. Electric shocks from misusing electrical tools or equipment.

18. i. Alert the teacher/supervisor immediately: Inform an adult without touching anything.

ii. Evacuate the area: Move away safely and quietly from the school kitchen.

iii. Do not touch the socket or switch: Avoid using water or touching the electrical outlet.

19. i. Proper wire management: Tie, bundle, or run loose wires along walls/under cord covers to prevent tripping.

ii. Regular inspection: Check equipment, cables, and outlets frequently for wear or damage.

iii. Keep the area clean and dry: Ensure floors are free of clutter and liquids.

iv. Proper storage: Store tools, cables, and devices safely in designated areas after use.

20. i. Warn others: Immediately tell nearby classmates to stay away from the spilled water and cables.

ii. Report to the instructor: Inform the teacher or supervisor right away.

iii. Turn off power safely: Disconnect the main power source if safe and instruct to do so.

iv. Clean the spill safely: Carefully wipe up the water only after the power source is confirmed off/disconnected.

1.3 COMPUTER CONCEPTS

SECTION A

1. D

2. A
3. C
4. A
5. C
6. B
7. A
8. C
9. A
10. B
11. C
12. C
13. B
14. A
15. C

SECTION B

16. Size, purpose and functionality.



- 17.
18. A computer is an electronic device that processes data into information.
19. Special purpose computer
20. a) Speed – computers perform tasks faster than human beings.
 b) Accuracy – computers perform tasks without errors.
 c) Versatility – a computer can perform many different types of tasks.
 d) Reliability – computers give consistent output for similar tasks
 e) Diligence – a computer can perform the same task repeatedly without getting tired or bored.
 f) Storage – a computer can store large amounts of data and information that can be retrieved quickly upon need by the user.
 g) Consistency – a computer can perform the same task repeatedly and produce the same correct result each time if the input and instructions remain the same.
21. General purpose computers are computers that can perform different tasks such as word processing, calculations, drawing, playing music and games and sending emails. For example the desktop while the special purpose computers are computers that are designed for a specific task only. For example, ATM machines,

22. TRUE, FALSE, FALSE

23. Data is raw facts that are not processes and have no meaning to the user while information refers to processed data that is meaningful to the user.

24. Texts, symbols and images

25. Special purpose computer

26. Laptop, smartwatch.

27. a) Reliability

b) A computer is reliable when it can perform tasks accurately and consistently without frequent failures.

c) Consistency ensures that a computer can perform tasks accurately and reliably every time. This helps users complete their work without errors, interruptions or unexpected failures.

28. a) Special purpose computer

b) The computer specifically monitors patients' heart rates and stores the readings digitally for later use.

29. a) Microcomputer

b) It enable him to create documents, presentations and spreadsheets, It is portable because of size thus he can use it anywhere.

30. a) Speed and accuracy

b) Speed helps the school save time and produce results quickly, allowing teachers and students to access results sooner while accuracy helps the school produce reliable examination results and reduces mistakes that may occur during manual calculations.

2.1 INTRODUCTION TO DRAWING ANSWERS

SECTION A

1. D

2. C

3. B

4. C

5. A

6. B

7. A

8. C

9. A

10. D

11. B

- 12. A
- 13. C
- 14. B
- 15. B

SECTION B

16. a) Planning and Visualization: It allows the learner to visualize the final look, shape, and structure of the table before cutting or assembling materials.

b) Accuracy and Estimation: It helps in taking precise measurements and accurately estimating the amount of material needed, reducing waste.

c) Error Prevention: It serves as a guide or blueprint to identify and correct potential design flaws early, saving time and costs during production.

17. Type: Technical drawing (or a floor plan).

It provides a clear layout of the house structure, showing the precise spatial relationships between rooms, doors, and windows to guide builders during construction.

18. Construction lines (or guidelines).

They are drawn lightly so that they can be easily erased or modified if errors are made, without leaving permanent marks or smudges on the paper.

19. a) T-square: Used for drawing precise horizontal lines and aligning other drawing instruments like set squares.

b) Pair of Compasses: Used for drawing accurate circles, arcs, and measuring or transferring distances.

c) Set square: Used for drawing vertical or angled lines

d) Protractor: Used for measuring angles.

20. a) Clarity and Readability: A neat drawing ensures that all lines, dimensions, and details are clear and easily understood by anyone interpreting the blueprint.

b) Professionalism and Accuracy: It prevents confusion or misinterpretation that could lead to costly manufacturing or construction errors.

21. Computer-Aided Design (CAD)* or Computer-Aided Drawing.

22.

ARTISTIC DRAWING	TECHNICAL DRAWING
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It expresses ideas, emotions and creativity.	It communicates precise technical information.
Does not adhere to the rules of dimensioning.	Adheres to the rules of dimensioning.
Interpretation depends on the person perceiving the drawing.	Interpretation is the same everywhere.
Can be drawn on any material.	Drawn on a specific material of a computer screen.
Does not require drawing instruments	Requires drawing instruments to be drawn

23. a) Ensures Perfect Fit: It shows that precise measurements are critical so that individual machine parts fit together seamlessly during assembly.

b) Reduces Material Waste: Accurate drawing prevents manufacturing mistakes, which saves money and prevents the wasting of raw materials.

c) Guarantees Functionality and Safety: A part built with exact measurements functions correctly, ensuring the machine operates safely without breaking down.

d) Saves Time: It provides a direct, error-free blueprint, eliminating the need for trial-and-error adjustments in the workshop.

24. a) Visualization of Ideas: It helps learners transform abstract, mental design concepts into concrete, visible shapes.

b) Blueprint for Production: It serves as a reliable guide or instruction manual during the actual fabrication or construction of items.

c) Cost and Resource Planning: It allows learners to calculate dimensions accurately, helping them estimate the exact amount of materials needed.

d) Problem-Solving and Modification: It allows learners to test their design layouts on paper and easily spot and correct flaws before wasting physical materials.

e) Universal Communication: It serves as a standardized language that allows technical ideas to be shared clearly across different fields, such as engineering and woodworking.

25. a) Overcomes Language Barriers: Drawings use universal shapes, symbols, and lines that anyone can understand, regardless of the language they speak.

b) Simplifies Complex Ideas: It breaks down complicated technical mechanisms or spatial layouts into simple visual representations that are easier to digest than verbal descriptions.

c) Eliminates Ambiguity: A drawing clearly shows exact shapes, dimensions, and positions, leaving no room for guesswork or misinterpretation.

d) Provides a Permanent Record: It creates a lasting visual reference that group members or builders can look back on at any point to keep everyone aligned.

26. a. DRG: Drawing

b. A/C: Across Corners (Often used when specifying dimensions for hexagonal/square nut profiles or components)

c. CM: Centimetre (s)

d. A/F: Across Flats (Used in technical drawings to show the distance between two parallel flat surfaces)

27. a) Diameter ($\varnothing$): Represented by a circle with a slanted line through it, used to indicate the diameter of a circular feature.

b) Radius (R): Capital letter 'R', used to indicate the radius of an arc or circle.

C) Center line (CL): A line that passes through the center of a symmetrical figure.

d) Square  : used to show that a feature is a square or has a square cross-section.

e) Perpendicular $\perp$: Used to show that two lines meet at angle of 90 degrees.

28. a) Continuous Thick Line: Used to show the visible edges and surfaces of an object.

b) Continuous Thin Line (Dimension/Extension/Leader lines): Used to indicate dimensions, projection limits, or to point to a specific feature.

c) Dashed Thin Line (Hidden line): Composed of short, evenly spaced dashes; used to show hidden edges or contours that are not visible from the current viewpoint.

d) Chain thin line: used to indicate central axes of symmetrical objects, holes, or circles.

e) Continuous Thin Freehand/Zigzag Line (Break line): Used to show where a part or long object has been broken or shortened visually.

29. This is a Caricature (Artistic drawing).

Examples of Artistic Drawing:

a) Portrait

b) Illustration

c) Graffiti

30. Technical Drawing (Architectural Drawing).

2.2 FREE HAND SKETCHING

SECTION A

1.D

2.B

3.B

4.C

5.C

6.C

7.B

8.C

9.B

10.A

11.C

SECTION B

12. (a,b) Mark if all steps are accurately followed and accurate measurements indicated.

13.To get marks, ensure:

- The drawing looks real and proportional in appearance.
- The image has a 3D pictorial view.
- The drawing has all functional design features displayed e.g. the frame, the base used to filter and the handle
- The dimensions are accurate, well indicated, reasonable and used standard drawing units.
- The lines are drawn with bare hands without the use of a ruler and are clean and reasonably straight with hidden lines not affecting the main shape of the sieve.

14.i. Hatching and shading help create texture, depth and realism in a sketch.

- ii. Hatching and shading conveys mood, energy and movement in a sketch.
- iii. Hatching guides the viewers to the key components of the sketch.

15. i. DRG-Drawing

- ii. A/F-Across flats (used to indicate measurements between two parallel faces of an object.
- iii. A/C- Across corners. (Used to indicate measurements taken diagonally from one corner of an object to the opposite corner.)
- iv. I/D -Inner diameter (used to indicate the internal circular measurements of a cylindrical object.)

16. Dashed lines are used to indicate hidden features in free hand sketching.

17a) Ellipse lines.

- b) Wavy lines
- c) A perpendicular relationship

18. A Pencil. Eraser, Sharpener, Drawing materials like a book or tablets

19. Cross-hatching technique. Used to create shading and texture in drawing.

20. i. Accurate proportions

- ii. Prospective and depth
- iii. Shading
- iv. Texture and shading

21. Free hand sketching is the process of drawing without the use of measuring tools but relying purely on bare hands, imagination and hand control.

22. i. Proportion and scale.

- ii. Line quality and control.
- iii. Practice and iteration
- iv. Perspective
- v. Observation and understanding.

23. 3D. These drawings are drawings with length, width and heights e.g. Cubes and cuboids.

2D. These are drawing with only length and width but lacks heights e.g. a circle

1D. These are drawings with only one dimension and mostly length and with no width or height. E.g. a line.

24. i. Draw two diagonal lines, or a vertical line and a horizontal line. Mark the point of intersection as the Centre of your purported circle.

ii. Estimate the radius of the circle by making a mark on each line at equal distance from the marked Centre.

iii. Connect the four marks made on lines using a free hand to make circumference of the circle

25. Hatching is a sketching technique which involves the use of parallel lines drawn close to each other to create shading, depth and texture. It brings in the volume concepts in drawing.

26.. i. Straight line. Spokes are perfectly straight.

Intersecting lines. Lines cross to the hub.

Radial lines. Spokes radiate outwards from a central point

ii. Closed loop lines. The chain connects back to its starting point.

Elliptical lines. The chain forms coiled loop around the gears

iii. Parallel lines. The two edge of the handle forms parallel lines.

Curved lines. The metal bar bends to change direction

27. Provide a staircase drawing

a) zigzag/jagged lines.

b) They don't cross each other. The relationship is parallel relationship.

c) They make an angle of 90 degrees and have a perpendicular relationship.

28. i. Draw a horizontal line to form the base of the rectangle.

ii. Draw two equal vertical lines from the ends of the base line drawn above.

iii. Draw a horizontal line on the tip of the vertical lines drawn and ensure its parallel to the base horizontal line and darken the final lines to complete.

29. Observation and visualization principles which emphasize studying the subject to help break complex subjects to basic shapes.

30. i) Hidden line.

ii) Object line.

iii) Centre line

iv) Leader line.

v) Section line.

Vi) Extension/dimension line.

31.True.

2.3 ICT TOOLS

SECTION A

1. B
2. A
3. A
4. B
5. B
6. A
7. A
8. B
9. C

SECTION B

10. a) Email can be used to send documents electronically and also share attachments. **True**
b) Mobile phones are only used for making voice calls. **False**
c) Zoom is mainly used for conducting live virtual meetings online. **True**
d) ICT tools cannot be applied in any form of learning activities. **False**
e) Google Docs allows multiple users to work together on the same document online. **True**
f) Social media platforms are only used for sharing videos and images, not messages. **False**
g) Computers are used only for playing games and entertainment purposes. **False**
h) ICT tools help learners communicate effectively even when they are far apart. **True**
i) Web conferencing tools allow both audio communication and live video interaction. **True**
j) ICT tools generally slow down communication between people. **False**

11.

- | | |
|-------------------------------|---|
| (a) Email | Sending electronic messages and documents |
| (b) Mobile phone | Making calls and sending text messages |
| (c) Web conferencing tool | Conducting virtual meetings |
| (d) Online collaboration tool | Working together on shared tasks |
- online

12. Email
13. Mobile phone
14. Online collaboration tools
15. Web conferencing tools
16. YouTube, TikTok, Instagram, WhatsApp, Facebook
17. Online collaboration tools
18. a) Online collaboration tools
 - b) Enables learners to make voice calls and send text messages to classmates and teachers.
- Allow learners to share learning materials, photos, videos and documents through messaging applications.
 - Supports virtual meetings and online discussions.
 - Provides quick access to emails for communication.
 - Enables communication regardless of distance.
19. a) Help learners follow instructions during practical activities.
 - Promotes teamwork during projects.
 - Facilitates sharing of ideas and information.
 - Improves understanding through discussions.

3.1 INTRODUCTION TO MATERIALS

SECTION A

1. B
2. A
3. B
4. C
5. A
6. D
7. B
8. C
9. A
10. C

SECTION B

11

- i. Metallic materials
- ii. Ceramic materials
- iii. Wood materials.

12. Production is the creation of goods and services.

13

- i. Electrical and thermal conductivity.
- ii. Strength and density.
- iii. Resistance to corrosion.
- iv. Color and texture.

14. Natural materials are materials that are found in nature, occur without human efforts and can be sourced directly from the environment e.g. stones, soil, plant materials while man made resources are goods and services that are made out of human initiative and cannot be found in the natural environment. They are created through chemical reactions e.g. plastics

15. These are inorganic, non-metallic materials that are hard, heat-resistant and durable materials that can break when they fall or are exposed to a strong force. Examples include cowries, clay pots, porcelain, silicon nitride etc.

16.

- i. Materials are important for building and constructions as they are main factors in the process.
- ii. Materials are key technology drivers as they are fundamental for any technological advancement.
- iii. Materials provide basics for human life as basic human needs are formed from the materials including food, clothes, etc.
- iv. Materials are used in the manufacturing of locomotives, for example light-weight materials are used in the manufacture of airplanes.
- v. Materials are used in manufacture of medicines which are important to both humans and animals.

17. Gold. It does not corrode and can be shaped to different shapes(malleable).

18. Mercury.

19.

- 1. Re-using materials to ensure maximum utility from the material.
- 2. Reducing the usage of resources and ensure materials are used only when necessary.
- 3. Recycling materials after making new ones instead of creating from new materials.

4. Use of the right quality and quantity of farm chemicals.
5. Proper disposal of waste materials to avoid pollution of the environment and water bodies.
6. Replacing the already cut tree to protect the natural environment and water catchment areas.

20.

- i. Steel is hardest.
- ii. Steel does not rust easily

21. Mercury is liquid in room temperature.

22.

- a) Plasticity. This is the ability of a material to undergo permanent, irreversible change when subjected to external force.
- b) Durability. This is the materials ability to withstand pressure and stay functional for over a period of time without need for maintenance and repairs.
- c) Malleability. This is the property of the materials that allows it to be hammered into thin sheets without breaking or cracking.

23.

- i. Used in making building bricks.
- ii. Used in making tiles.
- iii. Used in making ventilations.

24. (a)

- i. Spoons.
- ii. Class widows.
- iii. Metallic containers.
- iv. Nails.
- v. Roofing sheet.
- vi. Metallic plates.

(b).

- i. Aluminum to make cooking utensils.
- ii. Steel to make nails.
- iii. Iron to make roofing sheet.

25.

- i. Agricultural farm.
- ii. Rivers and water bodies.
- iii. Trees and forests.
- iv. Human resources.

26.

- i. Copper is resistant to corrosion and durable.
- ii. Copper is good conductor of electricity.

3.2 METALLIC MATERIALS

SECTION A

- 1. C
- 2. C
- 3. B
- 4. B
- 5. C
- 6. A
- 7. B
- 8. C

SECTION B

- 9. Metallic materials are strong and durable.
- 10. Good conductor of electricity.
- 11. Steel is strong and durable.
- 12. Copper.
- 13. Steel.
- 14. Aluminium.
- 15. It is a good conductor of heat and is corrosion resistant.
- 16. They are strong and durable.
They are recyclable.
- 17. Corrosion resistance

18. Iron (*or Steel*).

19. It is shiny (lustrous) appearance.

20. It conserves natural resources. (*Accept: reduces waste, saves energy, reduces pollution.*)

21. Matching Metallic Materials with Uses

(a) Copper — Making electrical wiring

(b) Steel — Making strong tools and building structures

(c) Aluminium — Making aircraft bodies and cooking utensils

(d) Iron — Making magnetic materials and machine parts

22. True or False

a) Metallic materials are poor conductors of electricity. — False

b) Aluminium is commonly used in making aircraft bodies because it is lightweight. — True

c) Copper and Aluminium are used where magnetism is required. — False

d) Some metallic materials such as iron and steel are magnetic. — True

3. 3 NON -METALLIC MATERIALS

SECTION A

1. B

2. B

3. C

4. D

5. C

6. C

7. B

8. B

9. C

10. B

11. D

12. A

13. D

SECTION B

14. Natural non-metallic materials are materials that are found directly in nature and require little or no processing. Man-made non-metallic materials are the materials that are created by human being because of chemical reaction in their formation.

15.

- i. Fire resistance -fire-they do not burn easily or at all.
- ii. Malleability and ductile-they can be twisted without breaking.
- iii. Non-lustrous-they are dull and do not shine.
- iv. Brittle-they can break easily.

16. Plastics act as insulators since they are poor conductors of heat.

17.

- i. Natural non-metallic materials
- ii. Synthetic non-metallic materials.

18.

- i. Electric and thermal conductivity.
- ii. Physical appearance and texture.
- iii. Shape and colour.
- iv. Fire resistance.
- v. Hardness and density.

19. Fire resistance and non-flammability.

20.

- i. Plastic materials
- ii. Ceramic materials like glass, ceramic plates, ceramic tiles

21.

- i. Natural materials e.g. plants provide food for animals and human beings.
- ii. Natural materials provide medicinal values for human beings.

- iii. Natural materials for example, stones and trees provides materials necessary for building and constructions of human shelter.

22. Non-metallic materials are materials that do not contain metallic elements in them or as a major constituent in its composition.

23.

- i. Thermal and electrical conductivity.
- ii. Strength and density.
- iii. Color and texture.
- iv. Fire resistance.
- v. Luster: metals are shiny and reflective while non- metals are dull.
- vi. Ability to rust or resist rusting.

4.1 Measuring and Marking Out Tools

SECTION A

- 1. B
- 2. A
- 3. C
- 4. A
- 5. B
- 6. C
- 7. D

SECTION B

- 8. Measuring and marking out tools - are tools used to take measurements and mark lines, points, or shapes when performing practical tasks.
- 9. Measuring tools.
 - Ammeter
 - Voltimeter
 - Calipers
 - Measuring tape
 - Weighing balance
 - Try square
- 10. Marking out tools.
 - Divider
 - Dot punch
 - Scriber

- Pencil
- Marking gauge

11. Vernier caliper

12. Try Square.

13. It is used to make small indentation on metals before drilling.

14. Clean tools after use.

Store tools properly in a toolbox, rack, or shelf.

Use tools correctly and for their intended purpose.

Keep metallic tools dry and lightly oil them to prevent rust.

Inspect tools regularly for damage or wear.

15.

- They improve accuracy when making items.
- They help reduce errors during construction and production.
- They save materials by ensuring correct measurements.
- They improve neatness and quality of work.
- They make work easier and more efficient.

16. A try-square is used to mark parallel lines **False**

Measuring and marking out tools help improve accuracy during work. **True**

A tape measure is suitable for measuring long distances. **True**

A scribe is mainly used for drawing fine lines on metal surfaces. **True**

A weighing balance should be washed with running water **False**

A steel rule should be stored hanging vertically on a wall **True**

4.2 COMPUTER HARDWARE

SECTION A

1. C

2. D

3. B

4. B

5. C

6. B

7. B

8. A

9. D

10. C

11. B

12. D

SECTION B

13.

- i. Computer hardware system.
- ii. Computer software system.

14. A microphone.

15. Hardcopy output devices are devices that give information from computers in form of physical media while softcopy output devices are hardware peripherals that give information from the computer in form of audio, visual or audio-Visual.

16. Audio-visual form.

17.

- i. Risk of loss.
- ii. Risk of attack by the virus.
- iii. Risk of data theft/exfiltration.
- iv. Risk of physical damage.

18.

- A. Speakers
- B. Plotters

19.

Device	Category of device
Flash disk	storage
Printer	output
Scanner	input

20. RAM-Random assessment memory.

ROM-Read only memory.

21.

- i. Fixed storage devices are cost effective.
- ii. Fixed storage devices are safe and cannot be lost easily.
- iii. Fixed storage devices offer high performance and speed which is associated with high speed that utilizes fast interface connection.

22.

- a. Keyin devices. These are hardware tools used to enter data, text and instructions in the computer system. e.g. Keyboard, touchpad.
- b. Voice input devices. These are devices that captures spoken words and sounds, converts them into digital signals and drive them into the computer system. E.g. smart speakers and microphones.
- c. Pointing devices are hardware devices that controls the movements of cursor and pointer on a screen of a computer.

23. A mouse is used as a pointing device in a desktop computer.

24.

- i. Cost of buying, installation and maintenance.
- ii. Ease operation and use.
- iii. Performance specification.
- iv. Mobility and portability.
- v. Upgradability.
- vi. Compatibility with the existing peripherals.
- vii. The purpose of the devices.

25.

- i. Control unit.
- ii. Arithmetic logical unit.
- iii. Register.

26.

- A. Hard disk drive.
- B. Optical disk.

27.

- i. They enhance users' interaction as some hardware devices is gateway that allow one to input commands and view of output result.
- ii. Computer hardware devices enable system connectivity since they link every internal component together.
- iii. Hardware devices facilitate data storage for a long period of time.
- iv. Computer hardware devices enhance speed and enable multitasking.
- v. CPU acts as the brain of the computer and performs arithmetic's.

28.

Computer hardware devices are the physical parts of a computer that enables it in its operations while computer software refers to the set of intangible programs and digital instructions that interpret and execute commands and instructions from the hardware devices. Software system serves as the brains of the computer.

29.

- i. When multimedia outputs are required. e.g. audio, video or animation.
- ii. When instant delivery needs and information must be shared globally without waiting for hardcopy.
- iii. When frequents content update is needed on the material.
- iv. When one aims at promoting environmental sustainability by reducing pollution that might result from papers or deforestation that might occur during paper manufacturing.
- v. When the volume of output needed is large, softcopy output is preferred.

30.

RAM	ROM
It loses data when power is lost	It retains data without power.
It allows reading and writing	It only allows reading but no writing.
It has a higher storage capacity	It has a low storage capacity compared to RAM
It is faster compared to ROM	It is not as fast as RAM
It stores open apps and active data	It stores start code and basic system firmware.

5.1 INTRODUCTION TO ENTREPRENEURSHIP

SECTION A

1. B
2. A
3. B
4. A
5. B
6. C
7. B
8. A
9. B
10. B
11. A
12. B
13. C
14. A
15. C

SECTION B

16. Vocational training and education
17. a. Hobbies and personal interest
 - b. Vocational training and education
 - c. Market gaps and customer needs
 - d. Mass media and the internet
 - e. Business exhibitions and trade fairs
18. a. Creative and innovative
 - b. Risk taker
 - c. Self – confident
 - d. Has good communication skills
 - e. Persistent and hardworking
19. a. Creating job opportunities. Setting up new ventures provides employment opportunities for local community members.
 - b. Provision of goods and services. Business brings essential products closer to consumers, saving them travel time and costs.

c. Utilization of local resources by making productive use of locally available raw materials which reduce wastage.

d. Invention and innovation. They introduce new technology, products or smarter ways of solving daily community problems.

e. Promotion of national and local growth by paying taxes that circulate wealth within the country.

20.

a) They increase market competition, which helps keep prices affordable and improves the overall quality of products.

b) They offer a reliable supply of diverse products, saving community members from walking long distances to look for supplies.

c) They contribute to the growth of the local market's economy by paying market fees and trading with local suppliers.

d) They can offer direct or indirect employment to others in the market, such as loaders, transporters, or assistants.

e) They inspire other aspiring youth and community members to start their own businesses.

21. An entrepreneur

22.

a. Hobbies or personal interests (enjoying baking).

b. Friends and family (encouragement from her friends).

23.

a. Lack of capital (inadequate funds to run or expand the business).

b. Stiff competition (competing with larger, established businesses like supermarkets).

c. High operating costs (expenses like rent, license fees, and electricity).

24.

a. To earn an income and make a profit.

b. To achieve financial independence and meet personal needs.

25.

a. A service-based business idea (specifically, an equipment rental service arising from an identified market gap).

26.

1. Job creation: It provides employment opportunities for the youth and community members.

2. Resource utilization: It promotes the use of locally available raw materials and resources.

3. Economic growth: It boosts the country's economy through the circulation of money and wealth creation.

4. Government revenue: Businesses pay taxes and fees, which the government uses to develop infrastructure.

5. Innovation: It encourages the introduction of new products, services, and better technologies to satisfy consumer needs.

27.

a. Unavailability of goods or services in a local area (e.g., the complete absence of a nearby pharmacy).

b. Inconvenience or long distance required for consumers to access essential supplies.

5.2 PRODUCTION UNIT

SECTION A

1. B
2. C
3. B
4. D
5. B
6. A
7. C
8. B

SECTION B

9. A production unit is a business enterprise that uses economic resources to provide goods and services for sale with the aim of making profit.
10. Volume of output, Number of employees, Area covered by the premises, Methods of production, Capital invested, Volume of sales, Size of the market controlled.
11. I) Market proximity
 - ii) Availability of labour
 - iii) Access to electricity and water supply
 - iv) Security
 - v) Transport and communication
12. When demand of goods is high and the market is large, producers can increase output because they expect to sell more goods. When the market is small, production is usually limited to avoid unsold stock.
13. Volume of output, Capital invested, Number of employees, Volume of sales, Area covered by the premises.
14. Limited funds and Poor road network
15. I) Transport and communication
 - ii) Security
 - iii) Access to electricity and water supply
 - iv) Government policies
 - v) Availability of labour.

5.3 FINANCIAL GOALS ASSESSMENT

SECTION A

1. D
2. A
3. A
4. B
5. B
6. B
7. B
8. A
9. C
10. C
11. B
12. B
13. A
14. C
15. B

SECTION B

16. it helps determine the best way to save, invest and spend your money. Different financial goals require different strategies depending on when you will need the funds.
17. This is the ability to manage your money responsibly by considering making choices that support your financial goals, even when it is tempting to spend unnecessary.
18. I) They provide directions.
 - ii) Enables one track progress towards the goal over time.
 - iii) Helps in planning.
 - iv) Helps one set priorities and focus on them.
 - v) Increases motivation to keep moving forward even when faced with challenges.
19. I) Internet
 - ii) Family and friends
 - iii) Business magazines and newspapers
 - iv) Attending business fairs and exhibitions
 - v) Talk to businesspeople around him.
20. I) Prioritize needs and wants in order of importance
 - ii) Time frame
 - iii) Use the SMART goal setting strategy
 - iv) Prepare for obstacles.
21. Short term goals are achieved within a short period, usually less than three years while long term financial goals are achieved over a longer period usually more than three years.
22. I) Poor budgeting
 - ii) Impulse buying
 - iii) Low or irregular income
 - iv) Lack of financial discipline
 - v) Lack of financial knowledge.
23. The internet, financial advisors, financial institutions, newspapers and magazines, educational videos and documentaries.
24. I) Builds financial discipline
 - ii) Reduces unnecessary spending
 - iii) Helps achieve future needs
 - iv) Increases financial security
 - v) Measures of progress
25. I) Helps control spending by limiting unnecessary spending
 - ii) Encourages regular saving for short term and long-term financial goals
 - iii) Ensures money is allocated wisely
 - iv) Prepares for emergencies
 - v) Prevents overspending and debt by helping you live within your means.

26. Specific, Measurable, Achievable, Relevant, Time bound
27. Financial goals should be prioritized because resources such as money and time are limited. Prioritizing helps you focus on the most important goal first, making the best use of your money, meeting important needs first, and achieving your financial objectives more efficiently.
28. I) Provides direction
- ii) Reduces unnecessary spending
 - iii) Encourages saving
 - iv) Builds financial discipline
 - v) Improves budgeting
29. I) Provides financial security
- ii) it reduces financial stress
 - iii) Leads to improved money management skills
 - iv) Enables one to achieve personal dreams
 - v) Promotes increased savings and wealth accumulation
30. I) Teaches individuals to manage money carefully and make responsible financial decisions.
- ii) Helps individuals set priorities and plan for their future.
 - iii) Encourages regular saving, budgeting and controlled spending habits.
 - iv) Encourages independence.
 - v) Supports personal growth.

GRADE 8

1.1 FIRE SAFETY

SECTION A

1. B
2. B
3. C
4. A
5. D
6. C
7. D
8. B
9. A
10. A

- 11. C
- 12. B
- 13. B
- 14. A

SECTION B

- 15. a) Cooling method - This is when the temperatures of the burning materials is reduced to slow down the burning. A good example is using water to put out a fire. This method is best for fires on paper, wood, clothes and furniture.
 - b) Smothering method - This is when the supply of oxygen to the burning object is cut out to slow down the burning process. This can be done by covering a burning object with a fire blanket, sand, foam extinguishers or carbon dioxide extinguishers. Covering the fire prevents oxygen from reaching it. This method is suitable for flammable liquid fires and small kitchen fires.
 - c) Starvation method - This is where we remove combustible materials from the vicinity of the fire or removing parts of the burning material from mass of burning material. This is an ideal method to use in gas fires, chemical storage areas and industrial workplaces.
 - d) Interrupting method - This is the use of chemical sprays to stop burning. This method interrupts the chemical reaction of the fire. The dry chemical powders stop the combustion process. This method is ideal for electrical fires, flammable liquid fires and gas fires. Example is the dry powder extinguisher.
16. Fire blanket, sand
17. Covering the fire prevents oxygen from reaching it and therefore the fire goes off because oxygen supports burning.
18. Naked electrical wires, Overloaded sockets, Faulty electric equipment
19. i) Keeping a work environment clean and tidy
- ii) Labelling hazardous substances clearly
 - iii) Having all electrical equipment serviced and maintained
 - iv) Always being cautious when performing tasks
 - v) Storing and handling flammable materials and liquids with care.
20. Starvation method is where we remove combustible materials from the vicinity of the fire or removing parts of the burning material from mass of burning material.
21. Smothering, Interrupting, Cooling and Starving methods.
22. Heat, fuel and oxygen
23. Water should not be used in putting out oil fires because oil floats on water. When water is poured onto burning oil, it sinks below the oil and quickly turns into steam due to the high heat. The steam expands rapidly and can cause the burning oil to splash and spread, making the fire larger and more dangerous.

24. No smoking sign, Fire exit sign, Fire extinguisher sign, Assembly point sign, Warning: flammable materials.
25. Human error, overloaded sockets, faulty electrical gadgets, Carelessness while carrying out tasks, improper storage of flammable materials
26. I) not overloading sockets.
 - ii) Proper storage of flammable materials
 - iii) Regular inspection of electrical gadgets
 - iv) Keeping homes neat and tidy
27. Cooling method and Smothering method
28. Ensuring that the computer lab has adequate sockets to prevent overloading.
29. I) Promotes safety awareness
 - ii) Reduces panic during emergencies
 - iii) Teaches evacuation procedures
 - iv) Prevents fire accidents
 - v) Protects lives and property
 - vi) Provides first aid and fire-fighting skills
30. Pull the pin to unlock the extinguisher, aim at the base of the fire, squeeze the handle and sweep from side to side.

1.2 DATA SAFETY

SECTION A

1. B
2. C
3. B
4. C
5. A
6. B
7. C
8. B
9. C
10. C
11. B
12. B
13. A
14. C
15. B
16. B

17. C

18. A

19. C

20. B

SECTION B

21. **Data** is raw facts that have not yet been organized or processed.

Information is processed and organized data that has meaning.

Jane's raw temperature readings are data; when she organizes and calculates them to find the average temperature, they become **information**.

22. An electronic device is a device that uses electronic components to receive, process, store or transmit data.

Examples: computer and tablet.

23. **Data safety** allows Achieng to access her assignments from her smartphone without losing them.

Backing up data ensures that she can continue working even if the original device is lost or damaged.

24. Protects data from unauthorized access.

Ensure assignments are not lost or damaged during transmission.

Allows learners and the teacher to share and access information safely.

25. Processed data helps Otieno calculate marks faster.

It reduces mathematical and calculation errors.

Reports give Amina accurate information about textbook needs.

This helps her make better decisions when purchasing textbooks.

26. The technical threat is malware or a computer virus.

Signs include:

- a) Files take a long time to open.
- b) Unusual error messages appear.
- c) The computer becomes slow.
- d) The computer shuts down unexpectedly.

27. **Malware/virus** – unfamiliar graphics appearing on the screen may be caused by malicious software.

Hacking/unauthorized access – someone has gained access to Michael's email without permission.

These threats can lead to loss, damage or theft of data.

28. Loss of important files and schoolwork.

Unauthorized people may access private information.

The stolen device and data may be misused, causing financial or personal loss.

29. Hardware failure such as a hard disk crash can cause loss or damage of stored data.

It may make files inaccessible.

It differs from environmental threats because hardware failure occurs due to a problem with the device, while environmental threats such as floods, fire and earthquakes come from the surroundings or nature.

30. Accidental deletion is the unintentional removal of important files or data.

Data safety protocols can protect against it by:

- a) Making regular backups.
- b) Using the recycle bin before permanently deleting files.
- c) Confirming files before deleting them permanently.

31. A strong password prevents unauthorized people from accessing private files.

It should:

- a) Be long enough.
- b) Contain letters and numbers.
- c) Include special characters such as @, # or %.

32. a) Click File.

b) Select Info.

c) Click Protect Document.

d) Select Encrypt with Password, enter the password and confirm it.

33. a) Open the antivirus software.

b) Select Scan.

- c) Choose Quick Scan or Full Scan.
- d) Start the scan and wait for it to finish.
- e) Remove or quarantine any detected threats.

Quick scan checks the most important areas of the computer and takes less time.

Full scan checks the whole computer and takes longer.

34. a) Connect the external flash disk to the computer.

b) Open Control Panel.

c) Select System and Security.

d) Select Backup and Restore, choose the external disk and start the backup.

35.a) Open Settings.

b) Select Windows Update.

c) Click Check for updates.

d) Download and install the available updates, then restart the computer if required.

36. 1234 is very easy to guess.

It does not provide enough security against unauthorized access.

37. Install and regularly update antivirus software.

38. The threat is an environmental threat caused by water.

It can damage computer keyboard and render the keyboard unusable.

39. It prevents unauthorized people from accessing the computer and its data.

40. It provides backup copies in case the original data is lost.

It protects data from device failure.

It makes data easy to store and retrieve.

It provides additional storage space.

It helps prevent permanent loss of important business records.

41. The five threats are:

a) Viruses/malware

- b) Unauthorized access/hacking
- c) Accidental deletion
- d) Hardware failure
- e) Environmental threats such as floods and fire.

42. Someone may use the password to access the learner's private information without permission.

43. To prevent loss of important data.

To protect data from unauthorized access.

To prevent viruses and malware from damaging data.

To protect data from accidental deletion.

To ensure data remains available and safe when needed.

2.1 Plane Geometry

SECTION A:

1. **C**
2. **C**
3. **B**
4. **C**
5. **B**
6. **D.**
7. **B**
8. **B**
9. **A**
10. **D**
11. **B**
12. **B**

SECTION B

13. Features of a Good Drawing Environment

Flat drawing surface.

Proper margins

Title block

14. **Compass** – Drawing circles and arcs.

Ruler – Drawing straight lines or measuring lengths.

15. **Different pencil grades:** Produce different line thicknesses.

Importance in plane geometry: Enables accurate technical drawings.

16. Plane geometry helps people to communicate ideas clearly and understand technical information.

Answer: T-square – Draws accurate parallel horizontal lines.

17. Drawing Instruments

- (a) Drawing circles and arcs Compass
- (b) Measuring and drawing angles Protractor
- (c) Drawing horizontal lines T-square
- (d) Measuring and transferring measurements Divider

18. It keeps drawings neat and well organized.

19. True or False

- a) A T-square is mainly used for drawing horizontal lines. **True**
- b) Plane geometry can be applied using both manual and digital tools. **True**
- c) The title block is used for measuring angles in drawing. **False**

20. Correct use of drawing instruments improves accuracy in technical drawings. **True**

21. Importance of Plane Geometry

- Communicates design ideas clearly.
- Guides accurate construction and production.

2.2 DIMENSIONING

SECTION A

- 1. B
- 2. C
- 3. C
- 4. B
- 5. C
- 6. C
- 7. D
- 8. B
- 9. C
- 10. B
- 11. C

12. D

13. C

14. B

SECTION B

15. Linear dimensioning (30), arc dimensioning (40)

16. a) $\varnothing 25 \rightarrow$ Diameter dimensioning

b) R15 $\rightarrow$ Radial dimensioning

c) $60^\circ \rightarrow$ Angular dimensioning

17. A – Dimension line

B – Extension line

C – Leader line

18. Parallel Dimensioning

19. Combined Dimensioning

20. Ensures accurate construction of objects.

21. Ensures accurate manufacturing, reduces production errors and minimizes material wastage.

22. Produces accurate products.

2.3 PLAIN SCALE DRAWING

SECTION A

1. B

2. A

3. C

4. B

5. D

6. C

7. B

8. A

9. A

10. B

11. C

12. B

13. A

14. D

15. A

SECTION B

16. a. Zero-Mark Location: The zero mark (0) is placed after the first main division, not at the extreme left end.

b. Main Divisions: These are drawn to the right of zero to show large, whole units (like whole meters or kilometers).

c. Subdivisions: The first block (to the left of zero) is divided into smaller equal parts to measure fractional units (like centimetres or decimetres).

d. Representative Fraction (R.F.) or Scale Ratio: The scale usually shows the ratio comparing drawing distance to real-life distance.

e. Units Stated: The units being measured (e.g., meters, kilometres) are clearly labelled on the scale.

17. Determining the Scale Used

Given:

* Map distance = 16 cm

* Real-life distance = 8 km

Step-by-step Workings:

* Convert kilometres to centimetres so both measurements use the same unit (1 km = 100,000 cm)

8 multiply by 100,000 = 800,000cm

* Write the scale as a ratio (Map Distance: Actual Distance):

16cm:800,000

* Simplify the ratio by dividing both sides by 16:

$800,000/16 = 50,000$

* Ratio Scale (R.F.): 1: 50,000

18. Actual Distance Represented by 12 cm

Given:

5cm represents 25km

Step-by-step Workings:

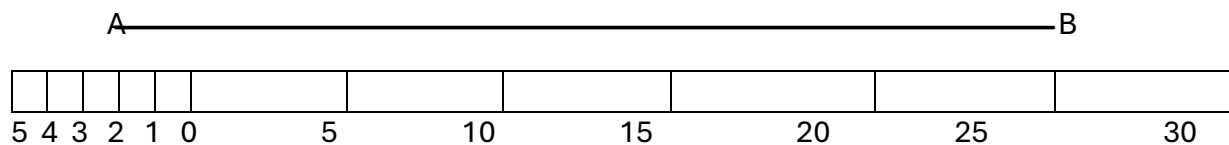
* If 5cm rep 25km

What about 12cm?

12 multiplied by 25/5

The actual distance is 60 km.

19. Drawing a Plain Scale (up to 30 m in 5 m intervals, showing 27 m]



20. Line PQ .

Looking at the plain scale diagram:

* Right side of zero (Main units): Point Q aligns with mark 25.

* Left side of zero (Subdivisions): Point P aligns with subdivision mark 2.

Step-by-step Workings:

(Assuming the units on the scale represent centimetres based on the question prompt:)

Answer:

The length of line PQ is 27 cm.

21. Standard Engineering Plain Scale Problem

(a) Distinct unit values read from main divisions versus subdivisions:

* Main divisions: Read whole meters (m).

* Subdivisions: Since 1 meter is divided into 10 equal parts, each subdivision represents 1 decimetre or 0.1 meters (10 centimetres).

(b) Calculate the total measurement value:

* Main divisions: 3 divisions = 3 meters

* Subdivisions: 7 subdivisions = 0.7 meters

Answer:

The total measurement value is 3.7 m or 3 m.

22. John's Architectural Blueprint

Given;

Actual court length = 28 m

Drawing length = 14 cm

(a) Compute the Representative Fraction (RF)

First, convert 28 m into centimetres:

$$28\text{m} = 28 \text{ times } 100 = 2800$$

Formula:

$$\text{RF} = X/Y$$

14/2800 then simplify to get 1/200

(b) Express the scale as a ratio in the form X: Y

1:200

b. Plain Scale

23.

(a) A plain scale is a scale that represents measurements in two units: a major unit and its smaller subdivision.

(b) Two professional uses of a plain scale

1. Surveying – for measuring distances on site plans and maps.

2. Architectural/engineering drawing – for representing and measuring lengths on building or structural drawings.

24. Peter's Plain Scale

Given:

Ground distance = 8 km

Drawing distance = 16 cm

Maximum distance to be measured = 12 km

(a) Find the RF

Convert 8 km into centimetres:

$$1\text{ km} = 100,000\text{ cm}$$

Therefore:

$$8\text{ km} = 800,000\text{ cm}$$

Formula:

$$\text{RF} = \frac{\text{Drawing distance}}{\text{Actual distance}}$$

$$\text{RF} = \frac{16}{800,000}$$

$$\text{RF} = \frac{1}{50,000}$$

(b) Determine the Length of Scale (LOS)

Maximum distance = 12 km

Convert 12 km into centimetres

$$12\text{ km} = 1,200,000\text{ cm}$$

LOS = RF times maximum actual distance

$$\frac{1}{50,000} \text{ times } 1,200,000$$

$$\text{LOS} = 24\text{ cm}$$

25. Mary's Scale Line

Given:

1 cm on drawing represents 2 m on ground.

Maximum ground length = 30 m.

(a) Total physical Length of Scale (LOS)

Since:

$$1\text{ cm} = 2\text{ m}$$

We need to represent 30 m.

$\text{LOS} = \text{Maximum ground distance} / \text{Ground distance represented by 1 cm}$

$$\text{LOS} = 30/2$$

$$\text{LOS} = 15\text{ cm}$$

Answer: 15 cm

(b) Number of 5-metre main unit segments

Maximum distance = 30 m

Each main segment = 5 m

Number of segments = $30/5$

6 segments

Answer: 6 main unit segments

26. Tom's Scale drawing

Scale factor = 1:250

This means:

1 cm on drawing = 250 cm on ground

(a) True physical ground distance

Drawing length = 14.6 cm

Actual length = 14.6×250

=3650 cm

Convert centimetres to metres:

$$3650 \div 100 = 36.5\text{ m}$$

36.5 m

(b) Reduction scale, because 1 unit on the drawing represents 250 units.

27. a) 225 cm

(b) Representative Fraction (RF) formula is:

$RF = \text{Length on drawing} \backslash \text{Actual length}$

For this enlargement:

$RF = 225/45$

$RF = 5$

$RF = 5/1$

28. (a) Physical Length of Scale (LOS)

First convert metres to centimetres:

$75\text{m} = 75 \times 100$

$= 7500 \text{ cm}$

Using: $RF = \text{LOS} / \text{Actual maximum distance}$

Therefore: $\text{LOS} = RF \text{ times} \backslash \text{Actual maximum distance}$

$\text{LOS} = 1/500 \times 7500$

$\text{LOS} = 7500 \div 500$

$\text{LOS} = 15\text{cm}$

(b) Final three practical construction actions

After calculating the LOS, the final practical construction steps for the plain scale are:

1. Draw the 15 cm scale line on the drawing sheet.
2. Divide the scale line into equal main units according to the required ground measurements.
3. Subdivide the first main unit into smaller divisions to represent the smaller unit, then label the main and subdivisions appropriately.

29. Right-Angled Triangular Bracket

Given:

Base = 12 units

Height = 5 units

Scale: 1 unit = 10 cm

(a) True physical length of the base and height

Base:

12 times 10=120 cm

Base = 120cm

Height:

5 times 10=50 cm

Height = 50cm

30. 180 cm

(b) 36 units

31. 60 km

(b) 12cm

32. (a) Millimetres (mm).

(b) Should be divided into 10 equal subdivisions.

Each subdivision represents 1 mm.

Have the zero mark/reference point clearly indicated.

Have the subdivisions clearly marked and labelled for accurate measurement.

33. 25 cm

(a) 1250 cm

(b) 12.5m

34. a) 240cm

b. 24 units

35 a) 12000

b) $\frac{1}{2}$ times base times height

2.4 Visual Programming

SECTION A

1. B
2. D
3. C
4. D
5. B
6. C
7. B
8. C
9. B
10. A
11. B
12. B
13. C
14. B
15. D
16. C
17. D
18. B
19. B
20. A
21. B
22. C
23. D
24. B
25. D
26. D

SECTION B

27. a) Scratch

b) Coding blocks, Sprites

28. Check the Event block (e.g., *When Green Flag Clicked*) because it starts the program.

29. *When Sprite Clicked*

Say "Hello"

30. a) Sprites – Represent the characters.

b) Backgrounds – Show the different scenes.

c) Animations – Show movement and actions.

31.

- Makes learning more interesting.
- Demonstrates processes clearly.

32. a) Score

b) Stores and updates the player's score.

33. They show different scenes in a project.

34. a) Input – User enters their name.

b) Output – Personalized welcome message.

35. Repetition statement. Repeats actions until all objects are collected.

36. Scratch code blocks

Input statement B

Selection statement A

Repeating Statement E

Variable declaration D

Output statement C

37. Gives immediate feedback.

Makes the game more engaging.

38. Application is Scratch

Reasons:

- Supports user interaction.
- Allows animations and coding blocks.

39. Input–Processing–Output

Input – User enters age.

Processing – Program checks whether the user qualifies.

Output – Displays the result.

40. a) When the Green Flag is clicked. The programs start by greeting the Driver, ask the driver to enter his distance travelled and time taken. It stores the variables and calculates the speed and displays it.

b) Input statement – *Ask ... and wait*

c) Output statement – *Say..... for 2 seconds*

d) Variable –*Distance* and *Time*

e) Effect- *think Hmmmmm*

f) Processing – Calculation *Distance / Time*

41. The program checks whether a user-entered number is **even or odd** and gives feedback with text and sound.

b) ask [what is your Random number] and wait

c) say [That's an EVEN number] for [2] seconds

say [That is an ODD number] for [2] seconds

d) if <answer mod 2 = 0> then ... else ...

e) play sound [Meow] until done

play sound [An Electric Guitar] until done

f) answer mod 2 = 0 (the modulo operation that determines even or odd)

42. Scratch block palettes

a) Move 10 steps — Motion

b) When green flag clicked — Events

c) Play sound until done — Sound

d) Ask "What is your name?" and wait — Sensing

e) Repeat 10 times — Control

f) Change x by 10 — Motion

g) Switch costume to costume2 — Looks

h) Forever — Control

i) Pick random 1 to 10 — Operators

j) When space key pressed — Events

k) If then else — Control

l) Set score to 0 — Variables

m) Touching mouse-pointer? — Sensing

- n) Join apple banana — Operators
- o) Broadcast message1 — Events
- p) Controls movement of sprites — Motion
- q) Starts a program when an event occurs — Events
- r) Repeats instructions in a program — Control
- s) Detects user input and interactions — Sensing
- t) Plays audio effects and music — Sound
- u) Changes the appearance of a sprite — Looks
- v) Stores values such as scores and counters — Variables
- w) Performs calculations and comparisons — Operators

3.1 COMPOSITE MATERIALS

SECTION A

1. D
2. D
3. B
4. C
5. B
6. C
7. B
8. C
9. C
10. C
11. B
12. B
13. B
14. C

SECTION B

15. Composite materials are materials formed by combining two or more materials of different characteristics to produce stronger or more useful material.
16. Mud, rubber, concrete, mortar, papier mache

17. Matrix and reinforcement
18. The matrix binds the composition together.
19. Cement, sand, water and sand aggregate.
20. I) corrosion resistance
 - ii) Durability
 - iii) High strength and low weight
 - iv) They can be modelled into complex shapes that may be difficult to make with traditional materials.
21. Reinforcement improves the strength of the composite materials.
22. Papier mache is considered a composite material because it is made by combining two or more different materials that work together to produce properties that are better than either material alone.
23. Concrete, fiberglass, plywood/chipboards
24. I) Making furniture
 - ii) Construction of buildings, bridges and roads
 - iii) Making boats, water tanks
 - iv) Making gumboots, shoes, gloves
25. Concrete, Papier mache, rubber, plywood
26. Cement, sand
27. Flower vases, toys, animal models, bowls and trays, dolls, fruits and vegetables (for display).
28. I) construction of buildings, roads, bridges
 - ii) Manufacturing car bodies, aircraft parts
 - iii) Producing safety protective equipment like helmets
 - iv) Manufacturing water tanks and pipes
 - v) Making insulation materials
29. Fire extinguisher
30. a) Manufactured boards: making doors, wall panels, furniture, interior partitions, decorative items, constructing cabinets and kitchen units.
b) plastic coated paper: For food packaging, gift wrapping, Book and magazine covers, Shopping and carrier bags, Making disposable cups and bowls.

3.2 Ceramic Materials

SECTION A

1. B
2. C
3. B
4. A

- 5. C
- 6. B
- 7. B
- 8. C
- 9. D
- 10. C
- 11. B

SECTION B

- 12. Ceramic materials are hard, non-metallic materials made by heating clay or similar materials at high temperatures.
- 13. Clay pot, tile, glass bottle, toilet sink.
- 14. Cup, plate, toilet sink, floor tile.
- 15. Corrosion resistance – ceramics do not rust or react easily with moisture and chemicals.
- 16. Ceramics are suitable because they can withstand high temperatures without melting or burning easily.
- 17. They are water resistant.

They are easy to clean and maintain hygiene.

- 18. Ceramics resist heat and corrosion from chemicals.
- 19. Used to make household and construction items.

Promote cleanliness and hygiene because they are easy to clean.

20.

- (a) Fire resistance → Making fireplaces and kilns
- (b) Heat resistance → Making kitchen utensils such as cups and plates
- (c) Water resistance → Making sinks and bathroom tiles
- (d) Corrosion resistance → Making laboratory containers and pipes

21.

- a) Ceramic materials are metallic materials. — **False**
- b) Ceramics are commonly used in making tiles and sanitary ware. — **True**
- c) Ceramics can resist high temperatures without burning easily. — **True**
- d) Ceramic materials rust easily when exposed to moisture. — **False**
- e) Glass bottles are examples of items made from ceramic materials. — **True**

f) Ceramic materials do not break easily. — **False**

4.1 CUTTING TOOLS

SECTION A

1. D

2. D

3. C

4. B

5. C

6. D

7. C

8. D

9. B

10. B

11. C

12. B

SECTION B

13.

- i. To protect learners from injuries that may result from use of damaged tools.
- ii. To save on energy needed to work on a certain task using the tool.
- iii. To prevent damage on the tool which in turn could lead to financial strain due to replacement and repair.
- iv. To ensure efficiency in working which improves productivity and improves morale.
- v. Creating a safe working environment since well-maintained tools assures workers of their safety in the workplace.

14.

- i. Using the cutting tool for a different purpose or to cut materials that is not meant to.
- ii. Not repairing the broken and damaged parts of the tool.
- iii. Not sharpening their sharp edges and working with blunt tools.
- iv. By not oiling the moving parts of the cutting tools to reduce friction which might cause wear and tears.
- v. Disabling the safety features such as anti-kickback that are meant to improve users' safety.

15.

- i. Bolt cutter- used to cut through hard materials like chains, bolts and steel rods.
- ii. Snip-used to cut sheet metals and other tough, thin materials.
- iii. Stripper-used to remove plastic insulations from electric wires.

16.

- i. The specific purpose for the tool.
- ii. The cost of buying and maintaining the tool.
- iii. The durability of the tool.
- iv. Availability of repairs and maintenance services.
- v. Chemical reactivity.
- vi. The user's knowledge and skills on the usage of the tool.

17.



Used to curve and shape hard materials like wood.

18.

- i. Gloves.
- ii. Goggles.
- iii. Apron and helmet.

19.

(a) Single -point cutting tools - These are cutting tools with one cutting edge. e.g. planes and sharpeners.

(b) multi-point cutting tools – These are tools which has two or more working edges that works the same time to allow fast working on the material.

20.

Description of the use

A tool used for cutting and slicing – Knife

A tool used for cutting metal rods, pipes and sheet- Hacksaw

Drawing of a tool Used for cutting a workpiece along a straight- Handsaw.

21. Cutting tools are the sharp-edged tools that are used for slicing, shaping, smoothening and removing excess materials from the workpiece.

22.

- i. Always wear safety gear, especially gloves when working with cutting tools.
- ii. Always repair the broken handles of cutting tools to prevent damage on the hands.
- iii. Ensure the cutting tools are sharp and with well straightened blades.

23. A scrapper is used to remove old paintings and decorations.

24.

- i. Always sharpen the blunt edges to prevent damage.
- ii. Always use the right tools for the right purpose to avoid damaging the tool.
- iii. Inspect the tools frequently to notice any broken part and repair them before further damage.

25.

- i. Cutting tools help promote geometric accuracy and high-quality precision.
- ii. Cutting tools enable effective time management as it allows faster cutting and reduces labor hours.
- iii. Cutting tools helps reduce wastage and ensures maximum utilization of resources.
- iv. Cutting tools enables increased production output as cutting tools makes work easier and faster.
- v. Cutting tools ensure cleanness and enhance beauty by removing rough surfaces and old paintings.

26. Holding tools are the tools that are used to hold materials firmly in a position when they are worked on. Examples include vices, clamp, tongs. Cutting tools are sharp edged tools that are used to slice, separate, shape or remove excess materials from the surface of other materials. e.g. Knives, snips, cutters etc.

27. i. Using the cutting tool for a different purpose or to cut materials that is not meant to.

- ii. Not repairing the broken and damaged parts of the tool.
- iii. Not sharpening their sharp edges and working with blunt tools.
- iv. By not oiling the moving parts of the cutting tools to reduce friction which might cause wear and tears.
- v. Disabling the safety features such as anti-kickback that are meant to improve users' safety.

28. A – Plane, B – Handsaw, C – Stripper, D – Steel of bolt cutter, E - Scraper

29.

- i. Always use the right tools for the right purpose.
- ii. Always repair the damaged parts of the cutting tool.
- iii. Always wear personal protective equipment's when working with sharp tools.
- iv. Observe distance while working with the cutting tools and ensure you keep appropriate distances from the work mates.
- v. Always store sharp tools in their right toolbox and carry them with their edges facing down.

4.2 Computer Software

SECTION A

- 1. C
- 2. C
- 3. B
- 4. B
- 5. D
- 6. B
- 7. B
- 8. C

9. C

10. B

11. (a) Microsoft Word → Typing and formatting documents

(b) Microsoft Excel → Performing calculations and organizing data

(c) Microsoft PowerPoint → Preparing slide presentations

(d) Android → Managing computer hardware

SECTION B

12.

a) Application software is mainly used to perform specific tasks for users. — True

b) Microsoft Power Point is an example of spreadsheet software. — False

c) System software helps a computer to start and run properly. — True

d) Spreadsheet software can be used to draw charts and graphs. — True

e) Word processing software is used for typing and formatting documents. — True

13. Computer software is a set of programs and instructions that tells a computer what to do.

14. System software and Application software

15. A) Microsoft Word → Application software

B) Microsoft Windows → System software

16. Application software helps users perform specific tasks such as typing, calculations, and preparing presentations.

17. Word processing software

18. Ctrl + C – Copy

Ctrl + U – Underline

Ctrl + V – Paste

Ctrl + P – Print

Ctrl + S – Save

19. a) Microsoft Excel

b) SUM (D2:D4)

c) PRODUCT(B2, C2)

20. System Software

21. It helps users create, edit, and save documents efficiently.

22. Increase speed and efficiency of work.

Improves accuracy and record keeping.

5.1 BOOKKEEPING

SECTION A

1. C
2. D
3. B
4. A
5. C
6. B
7. C

SECTION B

8.

Statement	Description
Statement of financial position	It shows the list of assets, capital and liability of the business at a particular time.
Cash flow statement	It is a statement that shows the movement of money in the business.
Profit and loss statement.	It is a statement that shows the business revenue, cost, expenses, profit and loss at a given period.

9. Bookkeeping is the systematic way of recording, organizing and maintaining business transaction records for present and future information about the business.

10. Gross profit is the revenue received by the business before factoring in the expenses while net profit is the revenue after all business expenses have been factored.

11.

- i. Cash transaction. This is a transaction where payment is made immediately or shortly after goods and services have been delivered.
- ii. Credit transaction. This is a transaction where payment is made in later days after the delivery of goods and services. e.g. payment one month after delivery of goods and services.

12.

- i. Bookkeeping records are useful to the government to determine the amount of money in form of tax that the business should pay.
- ii. Bookkeeping records are used by investors and financiers to determine the right investment venture.
- iii. Bookkeeping records are useful to the management during decision making as it helps make data driven decisions about the business.
- iv. Bookkeeping ensures that there are organized records which enhance clear and easy communication on the performance of the business.

13.

- i. Fixed assets. These are properties owned by the business and are not meant to be sold but used by the business in its operations for a long period of time. e.g. buildings, machinery, plants, vehicles.
- ii. Current assets. These are properties owned by the business for the purpose of reselling and can easily be liquidized into cash. E.g. Stock.

14.

JASPER FRUITS

INCOME STATEMENT

FOR THE PERIOD ENDING 30 JULY 2024

INCOME

Sales Revenue.	450,000
Cost of goods sold.	(270,000)
Gross profit.	180,000

EXPENSES.

Transport cost.	2,500
Electricity bill	3,000
Salaries for employees.	40,000

Rent expenses	14,000
Total expense	(59, 500)

NET INCOME. 120,500

15.

USHINDI PUBLISHERS LIMITED

STATEMENT OF FINANCIAL POSITION

DR	AS AT 31 DEC 2021		CR
ASSETS		CAPITAL	1,579,000
FIXED ASSETS			
VEHICLE	734,000		
CURRENT ASSETS		LIABILITY	
		LOAN	300,000
Cash at bank	660,000	Creditors	159,000
Stock	296,000	Accumulated deficit	(98,000)
Debtors	250,000		
Cash at bank	98,000		
	<u>1,940,000</u>		<u>1,940,000</u>

16.

ASSETS =CAPITAL +LIABILITY

325,000=95,000 + LIABILITY

LIABILITY=ASSET-CAPITAL

LIABILITY=325,000 - 95,000

LIABILITY= Shs 230,000

17.

MORNING GLORY HOTEL

STATEMENT OF CASH FLOW

FOR A PERIOD ENDING 31ST DECEMBER 2022

Cashflow from operational activities

Payment to suppliers	(100,000)
Sale revenue	600,000
Payment of tax	(20,000)
Salaries payment	(200,000)
Interest payment	(20,000)
Net cash from business operation	Ksh 260,000

Cashflow from investing activities

Purchase of investment.	(50,000)
Purchase of a pickup.	(300,000)
Sales of an equipment	200,000
Net cash from investing activities.	Ksh - 150,000

Cashflow from financing activities.

Sale of shares	100,000.
Bank loan repayment.	(80,000)
Payment of dividends.	(10,000)
Net movement of cash	Ksh 120,000

18.

- i. Liability. This is the money owned by the business to other people. (it's money demanded from the business by other people or business)
- ii. Invoice. This is a written document that is prepared containing the list of goods and services delivered and total amount due to request for the payment of goods already supplied.
- iii. Creditors. These are the people to whom business owe money for goods and services supplied on credit.
- iv. Debtor. These are people who owe business money from supplies of goods and services.

19.

- i. Used by investors to determine the right investment opportunity by checking on the financial status of the business.
- ii. Bookkeeping is important for financiers to determine if it's safe to put in their money or if there is a risk of loss.
- iii. Bookkeeping helps create a transparent stakeholder relation by creating detailed financial reports that outline all the business transactions which help business owners highlight the business financial standing.

20.

- i. Fixed costs.
- ii. Variable costs.
- iii. Direct costs.
- iv. Indirect costs.

21.

KANGARU ENTERPRISE

INCOME STATEMENT

FOR THE PERIOD ENDING 31 DEC 2020

INCOME

Revenue for the year	50,000
----------------------	--------

Cost of sales	20,000
Gross profit	<u>30,000</u>

EXPENSES

Transport	1500
Salaries	10,000
Rent	6,000

NET INCOME **12500**

5.2 INCOME AND BUDGETING ANSWERS

SECTION A

1. B
2. C
3. B
4. C
5. A
6. C
7. B
8. C
9. C
10. D

SECTION B

11.

a) It tracks cash flow: It helps him know exactly how much money is coming into his shop (income) and how much is going out (expenses).

b) It prevents overspending: It guides him to spend only what he has, preventing him from falling into unnecessary debt.

c) Prioritizes business needs: It helps him focus on buying essential stock and paying business bills before spending on non-essential items.

d) Encourages saving: It allows him to set aside money to grow his business or handle emergencies.

e) Aids decision making; It provides clear financial records to help him plan future business goals.

12. a) Salaries or wages: Money earned from employment or doing a job.

b) Business profits: Money made from selling goods or offering services.

c) Pension: Money paid to a retired person after leaving employment.

d) Rent: Money received from renting out land, houses, or equipment.

e) Gifts or allowances: Money given by parents, guardians, or well-wishers

f) Interest and dividends: Money earned from savings in a bank or cooperative society (SACCO).

13. a) Income: The total amount of money they raised or have available for the tour.

b) Estimated Expenses: A list of items they expect to spend money on (e.g., transport, entry fees, meals).

c) Total Cost (Allocations): The specific amount of money assigned to each expense item.

d) Savings: A small amount of money set aside for emergencies or unexpected tour costs.

e) Balance: The final calculation showing if total income equals, exceeds, or falls short of the total expenses.

14. a. Identify the total income: Find out the exact amount of money available to spend.

b. List all expected expenses: Write down all the items or services that require money.

c. Prioritize expenses (Needs vs. Wants): Separate essential costs (needs) from non-essential costs (wants).

d. Allocate money to each item: Distribute the available income among the listed expenses.

e. Balance the budget: Ensure the total planned expenses do not exceed the total income.

f. Review and adjust: Check the budget to make sure it is realistic and adjust where necessary.

15. Simple budget. (10MKS)

Category	Ksh.	Ksh.
INCOME		
Business income	80,000	
Daycare income	30,000	
TOTAL INCOME		110,000
EXPENSES		
Household expenses	8,000	
Car fuel	5,000	
School fees	10,000	
Loan repayments	5,000	
Insurance premiums	3,000	
Rent	12,000	
TOTAL EXPENSES		43,000
SURPLUS/BALANCE		67,000

16. a) Promotes financial discipline: It teaches them how to plan before spending rather than buying things on impulse.

b) Encourages prioritization: It helps them identify and rank their immediate needs (like stationery) over wants (like snacks).

c) Prevents shortage of funds: It ensures they do not spend all the money at once and run out before buying essential items.

d) Cultivates saving habits: It encourages them to allocate a portion of the Ksh.1,000 for future use or emergencies.

e) Builds accountability: It makes them responsible and answerable for how they use money given to them.

17. a) Ensures balanced spending: By dividing her money into specific categories (food, school needs, transport, savings), she ensures no single area is neglected.

b) Guarantees security for essentials: It ensures vital costs like transport to school, and food are fully covered before any impulse spending.

c) Enables consistent saving: Setting aside a portion of her vegetable sales every month helps her build a safety net for emergencies or future goals.

d) Reduces financial stress: Knowing exactly where her money is going prevents anxiety and the fear of running out of cash.

e) Tracks business success: It helps her see if her vegetable business is making enough profit to comfortably cover her living and schooling expenses.

18. a) Highlights wasteful spending: A budget will clearly show them exactly how much money they are losing to unnecessary luxury items.

b) Prioritizes essential goals: It helps them put school fees first as a primary "need" before allocating money to entertainment or luxuries.

c) Controls impulse buying; It acts as a strict guide that limits spontaneous shopping trips and unnecessary purchases.

d) Improves cash flow management: It aligns their monthly income with their payment deadlines, ensuring school fees are paid on time.

e) Encourages family cooperation: It allows the family to sit down together, agree on financial limits, and work toward shared household goals.

19. a) Identify her total income: She must estimate or calculate the exact amount of money she earns from her beadwork.

B) Determine the cost of the school bag: Find out the exact price of the bag she wants to purchase.

c) List other necessary expenses: Write down any other costs she might have, such as buying more beads/supplies for her work.

d) Allocate and save: Decide how much of her beadwork earnings will go toward the bag and how much will be saved or reinvested in supplies.

e) Monitor and adjust: Track her beadwork sales over time to make sure she is on target to buy the bag when she needs it.

20. a) Total amount available (Ksh.3,000): He must budget within his strict limit of Ksh.3,000 without planning for more than he has.

b) His savings goal: He needs to decide what percentage of the Ksh.3,000 he wants to save (e.g., Ksh.1,000) before planning his expenditures.

c) Urgency of personal needs: He must distinguish between urgent needs (e.g., school stationery or transport) and non-urgent wants (e.g., toys or games).

d) Future tutoring expenses: He should consider if he needs to buy any materials (like pencils or books) to keep tutoring and earning money.

e) Emergency buffer: He should set aside a small amount of cash for unexpected personal needs that may arise during the holidays.

21. a) Prevents cash shortages: A budget ensures Peter only buys raw materials (fruit, cups, sugar) he can afford, keeping his business active.

b) Controls operational costs: It helps him find the cheapest supplies and avoid overspending on non-essential equipment.

c) Helps in pricing products: By knowing his exact expenses, he can price his fruit juice correctly to ensure he makes a clear profit.

d) Tracks business profits: It allows him to compare his sales income against his expenses to see if his business is growing.

e) Facilitates reinvestment. It helps him reserve a portion of his profits to buy more stock for the next school event.

22. a) Provides an emergency cushion: It ensures there is money available for unexpected expenses, like sickness or sudden repairs, without disrupting the main budget.

b) Helps achieve future goals: It allows a learner to buy larger items later (like a bicycle, book, or phone) that cannot be bought using a single day's pocket money.

c) Reduces financial stress: Knowing that some money is safely set aside gives peace of mind and financial security.

d) Builds financial independence: It teaches the habit of relying on one's own accumulated funds rather than borrowing from others.

23. a) Leads to chronic debt: Failing to budget often forces someone to constantly borrow money to cover basic needs, leading to a dangerous cycle of borrowing.

b) Neglect of essential needs: Money is easily wasted on wants (like entertainment) while necessities (like food, shelter, or school fees) are left unpaid.

c) Financial insecurity and stress: Living without a financial plan leads to constant worry, anxiety, and panic whenever money runs out before the next income.

24. a) Ensures smooth operations: It guarantees that money is always set aside to buy raw materials (fabric, threads, buttons) so work never grinds to a halt.

b) Guarantees timely payments: It helps the owner plan and allocate funds to pay workers' wages on time, keeping them motivated and productive.

c) Supports business growth: Setting a dedicated budget for advertising helps attract new customers and expand the business.

d) Prevents business overspending: It acts as a guide to prevent the owner from spending business profits on personal items or unnecessary equipment.

e) Helps in calculating accurate profits: By keeping track of expenses (fabric, labour, marketing), the owner can price their tailored clothing correctly to secure a steady profit.

25. Simple Personal Budget for Jane

CARTEGORY	KSH	KSH
INCOME		
Selling snacks	15,000	
Selling tomatoes	18,000	
TOTAL		33,000
EXPENSES		
Transport	2,000	
Electricity bill	1,000	
Household expenses	5,000	
Loan repayment	4,000	
TOTAL		12,000
SURPLUS		21,000

5.3 MARKERTING PF GOODS AND SERVICES

SECTION A

1. C

2. C

3. D

4. D

5. D

6. D

7. A

8. A

9. B

10. D

11. C

12. B

SECTION B

13. Marketing is the process of promoting a product in the market with the aim of increasing sales.

14. i. A market is a place where people meet to buy and sell goods and services.

ii. Market is a group of potential customers for goods and services.

15.

- i. To persuade the customers that your goods are best on the market.
- ii. To convince people to choose your goods ahead of others in market.
- iii. To remind people about the availability of goods in the market.
- iv. It helps create awareness about the availability of goods and services to potential customers

16.

- i. Government data on public records and census facts.
- ii. Carrying effective market research.
- iii. Getting feedback from customers and their recommendations.
- iv. Newspapers and magazines.
- v. Organizing and participating in trade fairs and exhibitions.
- vi. Radio and television advertisements provide sufficient information about market.

17.

- i. The level of competition in the market.
- ii. The government policies regulating the market.
- iii. The security in the area.
- iv. The levels of infrastructure development.
- v. The financial needs and capital requirements.

18.

- i. Email marketing.
- ii. Video conferencing app.
- iii. Instant social messaging app.

19.

- i. Not disclosing the side effects of the product.
- ii. Lying on the ingredients and components of the product.
- iii. Not disclosing the right price for the commodity.
- iv. Lying on the performance, quality and quantity of the products
- v. Not advising on the right way to dispose of waste products from their products.

20.

- i. Poor customer target.
- ii. Poor choice of marketing tools.
- iii. Language barriers.
- iv. Lack of proper market research.
- v. Poor timing
- vi. Ignoring data and analytics.

21.

- i. Lack of marketing and poor marketing strategies.
- ii. Poor or declining quality of products.
- iii. Technological advancements which might be causing market shift.
- iv. Poor customer services which might be expelling customers from their commodities.
- v. Unfriendly prices for the products compared to the prices of the competing brands.
- vi. Customers change preferences.
- vii. Lack of innovation from the producer where the company might sell the same old goods without new upgrade or variety.

22.

Digital marketing is a type of marketing which uses internet supported services to promote brands, products or services to connect with potential customers e.g. use of social media marketing while traditional marketing is marketing which utilizes offline physical, broadcast and print channels to connect with potential customers. e.g. Radio, television, newspapers

23.

- i. It enables the business to reach its target and existing customers instantly across the world.
- ii. It enables the business to react only to the target customers to prevent resource misappropriation and time wastage with the wrong people.

- iii. ICT helps the business to easily collect data on customers on what buyers like by conducting online surveys which gives clear information regarding the market.
- iv. ICT Makes it easy for team members to work together in their efforts to promote the product even when they are in different geometrical locations.
- v. ICT Marketing is cheaper compared to physical marketing, which involves long distance travels which might be costly and tiresome.

24

- i. Market. This is a group of potential customers.
- ii. Marketing. This is process of finding what customers need, creating products to satisfy those needs, and promoting them to build lasting relationships
- iii. ICT-Information communication and technology.

25.

- i. Government rules and policies.
- ii. Level of competitions in the market.
- iii. Customer tastes and preferences.
- iv. The security status of the location.
- v. The amount of capital available.
- vi. The target group of customers.

26.

GOODS	SERVICES
Goods are tangible as they are physical	Services cannot be seen or touched.
Can be separated from the owner	Can not be separated from the owner.
Can be quantified in monetary terms	Can not be quantified in monetary terms.
Can move from one place to another place.	Can not move unless the service provider moves.
Goods can be stored	Can not be stored

27.

- i. It helps enhance better understanding of customers, their needs, their preferences, and their financial abilities.
- ii. It lowers chances of failure as Market search enables the business to first try ideas to prevent financial loss by preventing waste of resources on strategies that may fail.

- iii. It enables the business to beat its competitors since during the market search, one can identify the competitors, study their strength and their weakness.

28.

- i. Reminding. This is the act of ensuring that customers do not forget about the existence of the product in the market.
- ii. Persuading. This is the act of making one believe that the products are the best in market ahead of the competing brand.
- iii. Convincing. This is the act of trying to win potential customers by showing them the benefits of your products and showing what makes your product stand out amongst others.

29.

- i. Email marketing.
- ii. Search engine optimization.
- iii. Social media management.

30.

- i. It helps the company identify the quality gap in the market.
- ii. It helps the company to know the right price for the commodity depending on the customers' comments.
- iii. It helps the company identify locations where there are distribution deficits and untapped opportunities.
- iv. It helps the company to know the quality of goods needed by the customers.

5.4 DISTRIBUTION OF GOODS AND SERVICES

SECTION A

- 1. B
- 2. C
- 3. B
- 4. C
- 5. C
- 6. B
- 7. C
- 8. B
- 9. D
- 10. B
- 11. C

SECTION B

12. Producer → Wholesaler → Retailer → Consumer
13. Transporting goods, storing goods.
14. Producer → Retailer → Consumer (School) or Producer → Wholesaler → Retailer → Consumer (School).
15. Retailer (Supermarket)
16. Transport goods and store goods, sell genuine goods, charge fair prices, give accurate product information, supply goods to retailers.
17. Causes health problems; Loss of consumer confidence.
18. Service Provider → Agent → Consumer
19. John gets higher profits as a producer.
20. Concept Tested: Matching Channels
 - (a) Producer → Consumer → A farmer sells vegetables directly to customers at the market.
 - (b) Producer → Retailer → Consumer → A furniture maker sells chairs through the local furniture shop.
 - (c) Producer → Wholesaler → Retailer → Consumer → A bakery supplies bread to a wholesaler, who distributes it to shops where customers buy it.
 - (d) Service Provider → Agent → Consumer → A tour company uses travel agencies to sell holiday packages to tourists.
21. Make goods available to consumers; creates employment opportunities.
22. True or False
 - a) Distribution ensures goods reach consumers in the right condition. — **True**
 - b) Retailers and wholesalers are examples of intermediaries. — **True**
 - c) Ethical distribution encourages sale of counterfeit goods. — **False**
 - d) Distribution helps create employment opportunities in the community. — **True**
 - e) A producer must always use intermediaries when selling goods. — **False**

GRADE 9

1.1 SAFETY ON RAISED PLATFORMS

SECTION A

1. B
2. B
3. B
4. A
5. D
6. B
7. B
8. B
9. B
10. C
11. B
12. A
13. C
14. C
15. B

SECTION B

16. a) Ladder, trestle, ramp, stand, steps, stairs, workbench

b) i) Adverse weather conditions

ii) Platform collapse

iii) Falling of tools and equipment

iv) Slips and trips

v) Falling from heights

17. a) False

b) False

c) True

d) True

18. i) The tools on the workbench to be well organized.

ii) The workbench to be secured with proper guardrails or safety barriers to prevent the tools from falling over.

19. Have the ladder inspected and repaired before the workers can start using it.

20. Adverse weather conditions – The rain can hinder visibility making working on the ladder more dangerous by affecting balance and stability.

21. I) inspect the raised platform he intends to use before use.

ii) Ensure the raised platform is stable on the ground.

iii) He should wear appropriate PPE's

22. Educate the work on the possible consequences by taking the worker through the risk he is exposed to in that situation. The worker should be educated about the risks associated with working on raised platforms.

23. Helmet. Harness, safety boots, safety gloves, overall.

24 i) (a)Falling from heights because overstretching makes the ladder unstable.

(b) Overstretching which may lead to fatigue and exhaustion.

ii) Get down the ladder and move it near the wall to reduce the distance between the ladder and the wall so as not to overstretch.

25. i) Using safety gear

ii) Regular inspection of the raised platforms

iii) Keep the working environment clean

v) Not overloading the platforms

vi) Using guardrails

vii) Watching out for weather conditions

26. Falling of tools and equipment, falling from heights, slips and trips, platform collapse

27. a) Ramp

b) They help move luggage and heavy loads more efficiently.

c) i) Keep the ramp free of obstacles such as debris and water.

ii) Ensure the ramp has a non-slip surface to reduce the risk of slipping.

iii) Inspect if the ramp is stable and not damaged before use.

iv) Do not exceed the ramp's weight capacity.

v) Wear appropriate footwear with good grip.

28. i) Slippery or wet floors, disorganized/disarranged tools

ii) Working near or in contact with naked electrical wires.

29. i) Provides a portable way for reaching elevated areas such as shelves or high walls.

ii) Serves as an elevated surface for performing tasks like assembling, cutting or working with materials as at a comfortable height.

iii) Used to support work surfaces or planks for tasks like painting or construction giving workers a stable elevated surface.

30. i) Ladder, workbench, trestle, ramp

ii) a) Workers wearing PPE's

b) Raised platforms being inspected before use

c) Guardrails installed on the raised platforms

iii) a) Wear PPE's like helmets for safety.

b) Move only under supervision and guidance from the supervisor.

c) Not to touch anything unless with permission

1.2 HANDLING HAZARDOUS SUBSTANCES

SECTION A

1. A

2. C

3. D

4. D

5. B

6. C

7. D

8. D

9. D

10. D

11. A

12. C

13. B

SECTION B

14.

- i. Chemical and industrial waste.
- ii. Some electrical wastes.
- iii. Laboratory and healthcare waste.
- iv. Agricultural chemical remains.

15.

- i. Always wear personal protective equipment's.
- ii. Always ensure workers are well trained on handling of hazardous substances to prevent accidents related to hazardous materials.
- iii. Always read the label and manual to understand the products and how to handle them.
- iv. Ensuring that hazardous substances are stored safely following strict safety procedures.
- v. Ensuring safe disposal of waste materials and empty containers from hazardous substances to prevent contamination.

16.

- i. Product name and manufacturers details.
- ii. Components of the products and ingredients used to make the product.
- iii. Expiry date and information on when and how the product should be used.
- iv. The hazard statement to warn users of the potential health or environmental hazard.

17.

- i. Petroleum products.
- ii. Spirits, paints and turpentine.
- iii. LPG gas.
- iv. Cooking oil

18.

- i. Suspended heavy weight materials.
- ii. Open ditch and uncovered holes.
- iii. Slippery surfaces.
- iv. Uncovered electrical cables and naked wires.
- v. Hot surface and open flames.
- vi. Presence of sharp tools in the field.

19.

- i. Wears safety mask while working with gases in laboratory.
- ii. Always wear gloves while handling corrosive substance.
- iii. Ensure their room is well ventilated.
- iv. Do not taste or eat anything while in the lab.

20. A hazard is anything that has potential to cause harm or danger while a risk is a situation that involves being exposed to danger.

21. A sharp tool. e.g. a knife

A hot surface and open flame. e.g. kitchen fire

Poisonous and corrosive substance. e.g. pesticides.

22. Name of the substance

Instructions for safe ways of keeping and storing the substance

First aid that can be administered in case the accident is mishandled

The type of hazardous material presented

23.

- i. It helps prevent injuries and possible death.
- ii. It helps avoid pain and damages to the body tissues.
- iii. It helps save the cost that would have been incurred for treatment in case of the occurrence of accidents.
- iv. It promotes safety and ensures productivity since workers feel secure in their duties.

24. A label is a short and fast read set of instruction attached to the products which guides the use of the product, ingredients and simple rules about the product while a manual is a booklet set to give extended details of the products and explains how the products work step-by-step.

25.

- i. Avoid using lit fire around petrol stations since petroleum products are highly flammable.
- ii. Always ensure there is ready and available fire extinguisher in petrol station to help contain fire in case of fire outbreak.

- iii. Always have absorbent materials like sand ready to quickly contain and clean accidental fuel spills.
- iv. Always use the approved containers to carry and store petroleum products and always ensure that the container is placed flat on the ground.
- v. Always turn off the car engine during the fueling process to prevent electrical sparks that can cause fire.

26. labelling helps avoid confusion during storage and retrieval for usage.

27.

- i. In laboratories.
- ii. In manufacturing companies.
- iii. In hospitals and medical facilities.
- iv. In construction sites.
- v. In the farm and agricultural areas.

28.

- i. Petroleum products.
- ii. Spirit products such as sanitizers, paints and turpentine.
- iii. Liquefied petroleum gas. (LPG)

29. Wear safety masks.

30. Avoid occurrence of accidents and injuries.

1.3 SELF-EXPLORATION AND CAREER DEVELOPMENT

SECTION A

- 1. C
- 2. B
- 3. B
- 4. A
- 5. B
- 6. A
- 7. B
- 8. A
- 9. A
- 10. A
- 11. B
- 12. A

- 13. C
- 14. C
- 15. D

SECTION B

- 16. Racheal has a talent in singing and that is why she does it beautifully without training while Mike has an ability in Maths, he can only solve the problems after practice.
- 17. a) Leadership
 - b) Management, Business administration, guidance and counselling
 - c) Good leadership enhances communication, builds teamwork, increases problem-solving ability, boosts confidence and improves decision-making; which are essential to career success.
 - d) i) Seeking guidance from a mentor
 - ii) Joining groups or clubs where people have leadership skills
 - iii) Take a course to learn more about leadership
 - iv) Organizing and planning frequent group projects.
- 18. I) To seek guidance, form a mentor
 - ii) join problem-solving groups or clubs
 - iii) Take a course to learn more on problem solving.
- 19. Graphic designer, Artist and Architect

Both careers allow Mary to use her artistic abilities while building rewarding professional skills.
- 20. a) Problem-solving skills, technical talent, Mechanical aptitude
 - b) Electronics engineering, Electrical engineering, electronic equipment repair.
- 21. Strong communication skills will enable teachers and journalists to share information effectively, build positive relationships and perform their jobs successfully.
- 22. To practice performance skills or seek training on performance skills to perfect them for career development.
- 23. a) Communication skills, public speaking skills, Leadership ability, Persuasion skills
 - b) Law, Teaching, Journalism, Politics, Public relations
 - c) i) Practicing public speaking regularly
 - ii) Joining a debate club to gain more experience
 - iii) Participating in speech and debate competitions
 - iv) Listening to skilled speakers and learning from their presentation techniques.
 - v) Seeking feedback from teachers, mentors and peers to identify areas for improvement.
- 24. Finance and accounting (Involves working with numbers, solving mathematical problems, preparing budgets and analysing financial information) or Engineering (engineers use mathematics to design, build and solve technical problems)

Explanation – Since Juma enjoys mathematics and working with numbers, these career pathways match his talents and interests and can lead to successful careers.

25. School clubs and extracurricular activities help students grow their talents, gain useful skills and prepare for future careers
26. a) True
b) False
c) False
d) True
e) True
27. The athlete might face challenges like injuries, strong competition, balancing education and sports, financial challenges, pressure and stress.
They can overcome the challenges by staying committed, working hard and seeking guidance.
28. Leadership skills, Communication skills, problem-solving skills, Financial management skills and Teamwork skills.
Developing these abilities through education, practice, training and experience can help someone become an effective business manager.
29. Self-exploration helps one to understand who they are, what they enjoy and what they are good at. This knowledge guides one in choosing a career that makes them happy and successful.
30. a) Journalism and news presenter, Lawyer, Teacher, Business manager, Motivational speaker, public relations officer.
b) i) Join debate clubs and public speaking activities, participate in leadership roles at school or in the community, practice giving speeches and presentations regularly, take part in competitions and events that involve speaking and leadership.

2.1 OBLIQUE PROJECTION

SECTION A

1. **B**
2. **B**
3. **B**
4. **C**
5. **B**
6. **B**
7. **A**
8. **C**
9. **B**
10. **D**
11. **B**
12. **D**
13. **B**
14. **C**

SECTION B

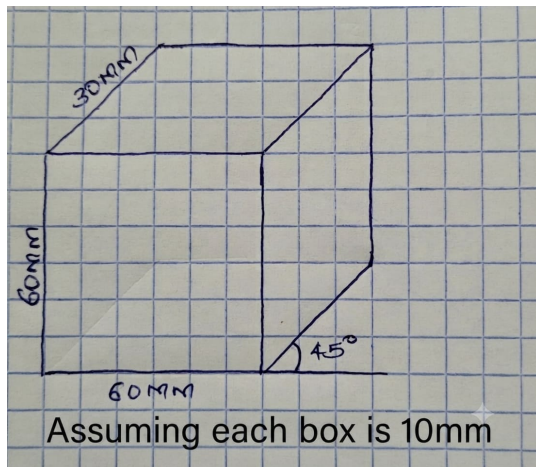
15. Oblique projection.

16. A freehand cabinet projection of a cube measuring **60 mm** with:

Front face drawn as a **60 mm square**.

Receding lines drawn at **45°**.

Depth drawn at **30 mm (half depth)**.



17. **B** The drawing showing the **front face in true shape with receding lines at 45°**.

18. The **front face is drawn in its true shape and size**.

19. Cavalier projection.

20. Cabinet projection.

21.

- Draw the front view in true shape and size.
- Draw receding lines at **45°**.
- Measure the required depth along the receding lines.
- Join the ends of the depth lines to complete the object.

22. **30 mm** because depth is drawn at full size.

23. Front view.

24.

- Help communicate design ideas clearly.

- Helps visualize the object before production.

25. Grid paper helps maintain correct proportions and improves accuracy.

26. **40 mm** ($\frac{1}{2} \times 80$ mm).

27. They show the **depth** of the object.

28. Easy and quick to draw.

Clearly shows the three dimensions of an object.

29. Column A

Answer

(a) Front view	Actual size and shape
(b) Cabinet projection	Drawn at half depth
(c) Cavalier projection	Drawn at full depth
(d) Receding line	Shows depth of an object

30. True or false

Oblique projection is used to represent three-dimensional objects on a two-dimensional surface. — **True**

In cabinet projection, depth is drawn at full scale. — **False**

The front face of an oblique drawing is drawn in its true shape and size. — **True**

Receding lines in oblique projection usually remain parallel to each other. — **True**

Oblique projections are commonly used in engineering and architecture. — **True**

A cabinet projection generally looks more realistic than a cavalier projection. — **True**

2.2 VISUAL PROGRAMMING

SECTION A

1. B

- 2. B
- 3. B
- 4. A
- 5. C
- 6. B
- 7. A
- 8. A
- 9. B
- 10. A
- 11. D
- 12. D
- 13. A
- 14. A
- 15. A

SECTION B

16. Scratch is a visual programming application that creates programs by joining graphical coding blocks together.

17. Scratch

Blockly

Microsoft MakeCode

18. Programming blocks/block palette, Script Area, Stage, Sprite list

19. A programming block is a graphical instruction used to perform a specific action in a program.

20. Education, Entertainment, Business, Communication

21. It develops problem-solving skills.

It encourages creativity.

It makes programming easier for beginners.

It allows programs to be created by joining blocks.

22. Identify the problem or purpose of the animation.

Select suitable sprites and backgrounds.

Join the required programming blocks.

Test the program.

Correct errors and improve the animation.

23. Creating educational applications.

Developing games for entertainment.

Creating health education applications.

Creating stories and animations.

Developing applications that provide information to the community.

24. Sprite: A character or object that performs actions in a visual programming project.

Background: The scenery or setting behind the sprites.

25. Uses graphical blocks.

Uses drag-and-drop programming.

Blocks can be joined easily.

Reduces the need to type code.

Makes programming easier to understand.

26. a) Events block: Starts or triggers actions in a program.

b) Motion block: Controls the movement of a sprite.

c) Control block: Controls the flow of a program, such as repeating instructions or making decisions.

27. Makes learning more interesting.

Helps learners understand ideas easily.

Encourages learner participation.

Improves creativity.

Makes information easier to remember.

28. Identify the purpose of the game.

Select suitable sprites and backgrounds.

Arrange the required programming blocks.

Add controls, sounds and other features.

Test the game.

Correct errors and improve the game.

29. Save work regularly.

Test the program regularly.

Correct errors before completing the project.

Use suitable and safe content.

Protect personal information.

Avoid using harmful or inappropriate content.

30. It is easy to learn.

It allows learners to create interactive applications.

It encourages creativity.

It develops problem-solving skills.

It can be used to create educational applications.

It allows information to be presented in an interesting way.

3.1 Wood

SECTION A

1. **B**
2. **C**
3. **B**
4. **D**
5. **C**
6. **B**
7. **A**
8. **C**
9. **C**
10. **C**

- 11. C
- 12. C
- 13. C
- 14. B
- 15. C
- 16. C

SECTION B

- 17. Pine, Spruce, Cypress, Cedar.
- 18. Mahogany, Oak, Walnut, Teak.
- 19. Hardwood because it is strong, durable, and long-lasting.
- 20. The timber was not properly seasoned, causing cracking and warping.
- 21. Physical characteristics - Attractive appearance (colour and grain).
- 22. Picture 1 – **Softwood**; Picture 2 – **Hardwood**
 - b) **Property:** Appearance – wood differs in colour. Picture 1 softwood has lighter colour while Picture 2 Hardwood has Dark colour
- 23. Softwood is lighter, easier to work with, and more economical for roofing.
- 24. Seasoned timber is less likely to shrink, warp, crack, or be attacked by fungi and insects.
- 25. Seasoning removes excess moisture, making timber stronger, more durable, and less likely to warp or crack.
- 26. Air drying (Natural seasoning).
- 27. Wood Preparation
 - Answer:**
 - Felling the trees.
 - Wood conversion-Sawing the logs into timber by quarter sawing or plain sawing.
 - Wood seasoning by Kiln drying or Air seasoning.
- 28. Artificial seasoning; Because it dries timber quickly using controlled heat.
- 29. It is light and easy to work with.
- 30. Differences between hardwood and softwood.
 - Answer:**
 - Mahogany is heavier, while pine is lighter.
 - Mahogany is harder and more durable, while pine is softer and easier to work.

- Mahogany has an attractive fine grain, while pine has a straighter, less decorative grain.
- Mahogany grows slowly, while pine grows faster.
- Mahogany is commonly used for high-quality furniture, while pine is commonly used for roofing and paper production.
- Mahogany is more expensive, while pine is less expensive.

31. Create employment opportunities.

Provides raw materials for industries such as furniture and construction.

32. Air drying (Natural seasoning).

33. Classification of wood.

Column A	Answer
(a) Mahogany	Hardwood
(b) Pine	Softwood
(c) Walnut	Hardwood
(d) Cedar	Softwood
(e) Oak	Hardwood
(f) Spruce	Softwood

34. True or false

- a) Hardwood is generally heavier and more durable than softwood. — **True**
- b) Seasoning increases the amount of moisture in timber. — **False**
- c) Pine and oak are examples of softwood. — **False**
- d) Conversion involves cutting logs into usable timber sizes. — **True**
- e) Artificial seasoning takes longer than natural seasoning. — **False**
- f) Texture and appearance are physical characteristics of wood. — **True**
- g) Wood is used only for making furniture. — **False**
- h) Proper seasoning helps prevent attacks by insects and fungi. — **True**

3.2 HANDLING OF WASTE MATERIALS

SECTION A

1. D

2. B

3. C

4. D

5. B

6. B

7. D

8. C

9. A

SECTION B

10. Re-using.

11.

- i. Can be used to make innovative kitchen garden to grow vegetables.
- ii. Can be used asked to make household storage facilities e.g. to store washing soap, and store water.

12.

- i. Electronic waste.
- ii. Kitchen waste.
- iii. Farm waste.
- iv. Metallic waste.
- v. Glass waste.
- vi. Construction waste.
- vii. Plastic waste.

13. Hazardous waste is any discarded material that poses risks to human health or the environment due to its dangerous properties e.g. electronic waste like old batteries, farm chemical waste and motor vehicle waste. While non-hazardous waste are materials that do not pose risk to human waste or to the environment. e.g. kitchen waste.

14. Biodegradable materials are substances that can be broken down naturally by microorganism into simpler substances while non-biodegradable materials are materials that cannot be broken down by living organisms and can lead to pollution.

15. These are waste materials that result from discarded electrical or electronic devices that are no longer useful, functional or wanted.

16. Landfilling is a solid disposal method where waste materials are compacted in a pit and covered with layers of earth.

17.

- i. Proper waste management significantly reduces pollution and conserve natural resources.
- ii. Proper disposal prevents the spread of diseases and reduces exposure to hazardous substances.
- iii. It promotes the efficient use of resources where recycling and reusing reduces the need for raw materials extraction, conserving forest, water and fuel.
- iv. Proper waste management can generate significant economic advantages by reducing disposal costs, creating jobs and stimulating local economies.
- v. Proper waste management enhances community wellbeing by creating cleaner and safer living environment.
- vi. Proper waste management helps prevent climate change by reducing emissions from decomposition.

18.

- i. Resources efficiency and sustainability.
- ii. Collection, segregation and treatment.
- iii. Resource efficiency and sustainability.
- iv. Safe disposal and environmental protection.
- v. Hierarchy and life cycle approach.

19.

- i. It ensures that waste handlers and public are aware of the type of waste they are handling to prevent confusion and mishandling of hazardous waste.
- ii. Labelling ensures compliance with the legal requirements which helps avoid fines, penalties and legal consequences.
- iii. It ensures efficiency in waste managements as clear and consistent Labeling assist in segregation of waste to determine recyclable ones and determine proper waste disposal methods

20.

- i. Manufacturing industries.
- ii. Agricultural farms.
- iii. Hospital and medical facilities.
- iv. Construction sites.
- v. Home kitchen.

21. i. Incineration. This is the process of burning waste materials to reduce its volume.

- ii. Landfilling. This involves disposing of the waste materials in a well-prepared pit and covering them with soil. Materials covered should be capable of decomposing.
- iii. Re-using. Reusing involves getting an alternative use of the material without tampering with its initial form.
- iv. Re-cycling. This involves transforming waste materials into different usable products by first tampering with its original form and processing.
- v. Composting. This involves decomposing organic waste material into nutrient-rich soil.

22.

- i. Waste generation. This is the process through which unwanted materials are created.
- ii. Waste separation. This is the process of sorting out waste materials to their respective class depending on various factors such as their origin and their severity to enable recycling, reusing and responsible disposal.

23.

- i. Improper waste management and disposal lead to environmental pollution and soil contamination which affects the ecosystem and in turn leads to poor agricultural productivity.
- ii. Poor waste management and disposal expose people to harmful substances, pollution of water bodies and air which leads to health issues such as respiratory issues and also provides a friendly environment for the breeding of diseases causing organisms.
- iii. The release of greenhouse gases from landfill and open burning contributes to climatic change and extreme weather events.
- iv. Improper waste management leads to high economic costs of cleanups and unnecessary medical costs due to disease outbreaks which in turn brings low-quality living standards.

24. Incineration is the process of burning the waste materials at high temperatures to reduce their volume in a controlled environment to ensure that combustion is controlled and emissions are minimized.

25. a) Dust bin b) It is used to collect and waste before disposal.

26.

- i. Batteries
- ii. Waste oils
- iii. Laboratory solvents.

27.

(a)

- i. Plastics
- ii. Papers

(b)

- i. A plastic chair.
- ii. Tissue papers

4.1 HOLDING TOOLS

SECTION A

1. C
2. A
3. C
4. C
5. D
6. A
7. B
8. A
9. B
10. B
11. A
12. C
13. B
14. C

15. B

SECTION B

16.[a] Beaker tongs

- i) Used to hold and lift hot beakers.
 - ii) Protects the hands from burns.
 - iii) Provides a firm grip on the beaker.
- b) Using a piece of cloth is not safe because it can slip or become too hot.

Using a Beaker tongs :

- a) Give a firm grip.
- b) Keep the hands away from the hot beaker.
- c) Reduce the risk of burns.
- d) Reduce the chance of dropping and breaking the beaker.
- e) Give better control when moving the beaker.

17. a) Combination pliers

They can be used to:

- i) Grip objects.
- ii) Compress materials.
- iii) Bend wires.
- iv) Twist wires.
- v) Cut wires.

b) Using pliers to hammer a nail can:

- i) Bend or damage the jaws.
- ii) Damage the cutting edges.
- iii) Make the jaws loose or misaligned.
- iv) Reduce their ability to grip properly.

✓ Maintenance rule: A tool should only be used for its intended purpose.

18. a) Water-pump pliers (tongue-and-groove pliers) because:

i) Used to grip round objects such as pipes.

ii) Have adjustable jaws.

iii) Provide a firm grip on the pipe.

b) long nose pliers are not suitable because:

a) Their narrow jaws may slip from the round pipe.

b) They do not provide enough grip to hold the pipe firmly.

c) They are mainly used for gripping and bending small wires.

d) They make it difficult to keep the pipe steady.

(correct holding tool) Water-pump pliers because:

a). Hold the pipe firmly.

b) Provide better control.

c.) Reduce slipping.

d) Improve accuracy during the work.

19. (a)

Long-nose pliers

a) Used for electrical and electronics work.

b) Can reach into narrow and deep spaces.

c) Used for holding thin wires and bending small loops.

b)

a) They have long, narrow jaws that can reach hidden spaces.

b) The narrow jaws give better control when handling small objects.

c) They allow the learner to bend thin wires accurately.

25. (a)

Locking pliers (vice-grip pliers)

a) Grip materials tightly.

b) Lock their jaws in position.

c) Can hold objects firmly while loosening or tightening bolts.

b)

- i) The jaws lock firmly onto the material.
- ii) They prevent the material from moving.
- iii) The learner can use both hands to apply force.
- iv) They provide better control and support during work.

21. (a) **Bench vice**

- a) It is mounted on a work bench.
 - b) It holds workpieces firmly.
 - c) It is used during drilling, filing and cutting.
- b)
- a) A bench vice holds the workpiece securely.
 - b) It keeps the hands away from the cutting tool.
 - c) It prevents the workpiece from moving.
 - d) It makes the work safer and more accurate.

22. (a) **Pipe vice**

- a) It is used for holding pipes.
 - b) It has jaws designed to grip cylindrical objects.
 - c) It holds the pipe firmly during threading and cutting.
- b) A flat-jawed vice may:
- a) Damage or dent the pipe.
 - b) Allow the round pipe to slip.
 - c) Fail to hold the pipe firmly.

A pipe vice:

- a) Grips the pipe securely.
- b) Prevents the pipe from rotating or slipping.
- c) Reduces damage to the pipe.
- d) Provides better support during threading.

23. (a) **Hand vice**

- a) Used for holding small objects.
- b) Suitable for small screws, rivets and other small items.

- c) Allows the items to be held firmly while working on them.
- b) i) Holds small objects securely.
- ii) Makes the work easier and faster.
- iii) Prevents small objects from slipping or getting lost.
- iv) Gives better control when filing or working on small components.

24.(a) **G-clamp**

b) i) It is C-shaped.

- ii) Used to hold pieces firmly together.
- iii) Commonly used during woodworking, drilling and gluing.

25. a) **Sash clamp**

- a) Used to hold large pieces of wood.
 - b) Suitable for large woodworking jobs.
 - c) Can hold large workpieces during screwing, gluing or bolting.
- b) Forcing a G-clamp beyond its capacity may damage the clamp, handle or jaws.

The workpiece may not be held securely.

The clamp may break or slip.

The correct clamp should be selected according to the size of the workpiece.

Check that the handle and jaws are in good condition before use.

26. (a) **Sash clamp**

- a) Has a long bar for holding large workpieces.
 - b) Used in woodworking.
 - c) Suitable for large frames such as beds and doors.
- b) It provides strong support to large materials.

Its long bar allows it to hold large frames.

It keeps the parts firmly in position during assembly.

An F-clamp is smaller and may not have enough capacity to hold a large frame.

27 .(a) **Paper clip**

- a) Used to hold small amounts of paper together.
- b) It is small and easy to use.
- c) It can be removed without damaging the papers.

b) It is suitable for a small number of papers.

It is lightweight.

It is less likely to damage or mark the papers.

An industrial spring clip may apply too much pressure to delicate schoolwork.

28. (a) **Bulldog clip**

- a) Used to hold large amounts of paper together.
- b) Has two folding metal handles or ears.
- c) Provides a strong grip on thick documents.

b) Holds many papers securely.

Saves time when arranging bulky documents.

Reduces the need to use many paper clips.

Makes documents easier to handle and organise.

29.(a) **Drawing clips**

- a) Used to hold paper firmly on a drawing board.
- b) Can be removed and reused.
- c) Hold the paper without damaging the drawing board.

b) Keeps the paper flat.

Prevents the paper from moving.

Helps in drawing straight and accurate lines.

30.

Tool	Care and
Stiff, squeaky and difficult to open tongs	Lightly oil the moving parts regularly
Dirty moist vice	Clean to remove dirt and keep it in a dry clean place
Overstretched clips	Use the correct clip depending on the size of the papers

4.2 DRIVING TOOLS

SECTION A

1. B
2. C
3. C
4. B
5. C
6. B
7. B
8. D
9. B
10. C
11. B
12. C
13. B
14. B
15. B
16. C

SECTION B

17.

a) Hammer

b) It is designed for driving nails into wood safely and efficiently.

18.

Mary: Screwdriver – used for driving and removing screws.

John: Spanner – used for tightening and loosening nuts and bolts.

19.

a) Punch

b) It makes an indentation that prevents the drill bit from slipping, improving drilling accuracy.

20.

a) Mallet

b) It strikes wood without damaging the surface. A hammer may dent or split the wood.

21. Type of material being worked on (wood) / avoiding damage to the workpiece.

22. Inspect tools regularly before use.

Clean and store tools properly after use.

Replace or repair damaged tools.

23. Correct size to fit the screw.

Correct tip type

24. It identifies damaged or worn-out tools before use.

Prevents accidents and improves work efficiency.

25. Importance of proper tool selection

Improves efficiency and saves time.

Reduces damage to materials and tools.

Enhances safety by reducing accidents.

26. a) Adjustable Spanner

b) Clean after use, oil moving parts and store them in a dry toolbox.

27. They make work easier and faster.

They improve accuracy and quality of work.

They reduce effort and increase productivity.

28. Column A

Answer

(a) Carpenter driving nails into timber

Hammer

(b) Mechanic tightening car nuts

Spanner

(c) Metal worker marking a drilling point

Punch

(d) Learner assembling furniture using screws

Screwdriver

(e) Carpenter fitting wooden joints

Mallet

29. Activity

Factor

(a) Tightening a large bolt

Size of bolt or fastener

(b) Working on metal

Material being worked on

(c) Using a tool in a crowded workspace

Safety requirements

(d) Driving a nail

Type of task

30. True or False

A punch is used to mark drilling points on metal surfaces. **True**

A mallet is mainly used to tighten screws. **False**

Using the correct driving tool improves efficiency. **True**

Driving tools should be cleaned after use. **True**

Damaged tools should continue being used until they completely fail. **False**

Regular inspection helps identify tool damage early. **True**

5.1 FINANCIAL SERVICES

SECTION A

1. C

2. D

3. A

4. C

5. D

6. D

7. A

8. C

9. B

10. D

SECTION B

11.

- i. Commercial banks offer loans and credit facilities to their members which are used as source of capital for investments.

- ii. Commercial banks create job opportunities for a large group of people enhancing better living standards.
- iii. Commercial banks offer investment advisories and trainings to their members which promotes entrepreneurial culture to the country.
- iv. Commercial banks offer safe storage of money and other valuables which promotes investments and trade.
- v. Commercial banks serve as intermediaries between savers and borrowers as they accept deposits from those willing to save and provide loans which helps allocate capital efficiency within the economy.

12.

- i. Money market offers stable returns on the investment which provides sense of security to the investor and allows investors to have better financial planning.
- ii. Money market funds offer higher returns compared to traditional saving accounts which gives an investor a highly competitive return.
- iii. Money market provides a wide scope of investment opportunities which provides more exposure to various types of short-term debt securities.
- iv. Money market funds provide a high liquidity investment plan since one can withdraw their money easily and anytime without long and tiresome procedures.
- v. Money market funds provide a low-risk investment plan since it is a short-term investment instrument which makes them safe investment plan compared to other volatile plans.

13.

- i. Central bank dictates lending interest rates for the commercial banks which affects the profitability of commercial banks.
- ii. Central bank of Kenya sets policies requirements for commercial banks ensuring they operate within the framework of required standards.
- iii. Central bank advises commercial banks on matters concerning money, economy and investment.
- iv. Central bank offers loans to commercial banks and banks money on behalf of commercial banks.
- v. Central bank regulates the amount of money in circulation, which limits the lending capacity of the commercial banks.
- vi. Central bank supervises commercial banks to ensure they adhere to regulatory standards and maintain upright financial practices.

14.

- i. Loans services offer an opportunity for one to have immediate access to funds, which provides a sense of stability during the unexpected period of financial challenges without disrupting one regular budget.
- ii. Interest earned from loans is one main source of income for financial institutions.
- iii. Loans help the receiver to achieve some financial goals earlier than he/she could have achieved due to inconsistent incomes and low incomes.
- iv. Loans have predictable repayment schedules which help the borrower to plan their budgets and manage finances effectively.
- v. Loans are vital in building credit history where responsible repayments improve one's credit history, making it easier to secure future loans and mortgages.

15.

Description	Financial institution
They offer deposit, withdrawals and loan services to their members	Commercial banks
They provide financial support to business and individuals who cannot get loan from banks and sacco	Microfinance
They are formed by people with a similar source of income and goals	Sacco
They cover you from risk	Insurance

16.

- i. It is fast and convenient since it's a self- service activity.
- ii. Mpesa services are readily available and can be accessed anytime unless other financial institutions which works on strict time.
- iii. A Mpesa transaction is cheaper when transacting some small amount of money and also offers free transaction fees for some amounts.
- iv. Mpesa services have revolutionized access to financial services and bridged the gap between the unbanked and underbanked population especially in regions where traditional banking is limited.
- v. Mpesa transactions offer enough security for customers finances as personal details are kept private and encrypted and requires personal identification number to access the money.

17. Banking financial institutions are institutions licensed to offer deposits and withdraws services and loan services. They act as a link between the borrower and the lender e.g.

commercial banks, while non-banking financial institutions are institutions that offers specialized financial services such as insurance, investment, Markert brokering and are not licensed to offer banking services

18.

- i. Determination and patience with desire to achieve.
- ii. Effective problem solver.
- iii. Effective time manager.
- iv. A calculative risk taker.
- v. Creative and innovative in the industry.

19.

- i. Commercial banks. Example include: KCB Bank, Family bank, National bank etc.
- ii. Micro finance financial institutions for example Faulu microfinance, Bimas microfinance, Kenya women microfinance.
- iii. Insurance companies. Examples include: Britam insurance, Jubilee insurance, Direct line insurance.
- iv. Savings and credit cooperatives organizations (SACCOS), for example Mwalimu Sacco, Stima Sacco, Police Sacco

20.

- i. Efficiency and convenience.
- ii. Cost friendly.
- iii. Availability.
- iv. Safety and security of money.
- v. Speed and timely.

21.

- i. Financial institutions such as commercial banks and saccos encourage savings from individuals and businesses which helps accumulate a pool of funds that are channeled to important productive investment opportunities in the economy.
- ii. Financial institutions provide their members with affordable loans which are channeled to investments and even monitor their loans to ensure loans are used for productive businesses in the economy.
- iii. Insurance companies as a financial institution bear the financial risks on behalf of the investors which creates confidence to the investors and encourages them to invest more in the economy.

- iv. Financial institutions offer their members training about investments and enlighten them with the skills to identify good investments opportunities in the market.
- v. By accepting deposit and giving out loans, financial institutions act like an intermediary and bridge the gaps between those willing to store their money and those willing to invest without necessarily them meeting or strike a deal.

22.

A

- i. Banks offer safe keeping of valuable items for their members in their safe to ensure safety of their properties. Example Title deeds, academic certificates and even golds.
- ii. Financial institutions offer loans to their members and accept deposits and savings.
- iii. Banks institutions offer foreign exchange services which in turn facilitate international trade.
- iv. Banks guarantee their members to secure assets on loans from other suppliers.
- v. Banks offer financial and investment advisory services to their members and public through their financial experts and consultancy services.

B.

- i. Insurance takes financial risks and bears financial loss on behalf of its customers in case of the occurrence of the loss.
- ii. Some insurance companies offer credit and loan services to their members at a small interest rate.
- iii. Insurance companies offer saving schemes such as education and health schemes to their members.

23.

- i. Saccos are owned by members while microfinances are privately owned or owned by the non-governmental organizations.
- ii. Saccos are mostly meant to encourage savings among their members while Micro finances are focused on providing loans to the members and public.
- iii. Saccos are democratically managed by their members and correct members views through the organized forums to collect members views while micro finances are governed by the appointed board of staffs.

24.

- i. Central bank does not allow deposits from public but acts like a government bank and a banker to other banks while commercial banks offer banking services to the public only.
- ii. The Central bank set policies and controls the operatives of the commercial banks.
- iii. The Central bank offer loans and lenders last resorts to the commercial banks while commercial banks offer loans services to the public.

25.

- i. Central bank acts as government advisors on matters of economy and finance.
- ii. Central bank prints and distributes money on behalf of the government.
- iii. Central bank acts as the government bank as it stores governments money.
- iv. Central banks control the supply of money in the economy on behalf of the government.
- v. Central banks renders the last resorts on matters concerning money on behalf of the government.

26.

- i. Insurance companies encourage saving by boosting investors' confidence to even spend more in the economy.
- ii. Insurance companies create employments for thousands of people in the country and enable them to earn a reasonable living.
- iii. Insurance companies accumulate a pool of money by mobilizing their members premiums which they invest directly in the economy through trades, buying and building assets and even investing through the transport industries.

27.

Institution	Types of financial institution
Kenya commercial bank	Banking
Agricultural finance corporation.	Non-banking
Kenya planters' co-operative union	Non-banking
Kenya re-insurance cooperation	Non-banking

28.

- i. A Sacco is formed by people with a common goal and possibly working together while a commercial bank is formed by private investors, non- governmental organizations or by the government.

- ii. Saccos are controlled and activities monitored by SASRA while activities of commercial banks are monitored and controlled by the central bank of Kenya.

29.

- i. E-Banking is fast compared to traditional banking.
- ii. E-Banking is convenient and reliable as it offers services all the time without limits of days and hours.
- iii. E-Banking is cheaper compared to traditional banking.
- iv. E-Banking is safer and more secure compared to traditional banking.
- v. E-Banking creates diverse financial services for members where even people from far places where normal banking services are not available can access them without necessarily travelling long distances.

30.

- i. Favorable government policies and political stability in the country support growth of financial institutions.
- ii. Enhanced security and safety measures which support investors.
- iii. Sufficient power supplies which support banking services and other online services.
- iv. Technological advancement in the country such as adoption of mobile banking and online banking services which has greatly impacted the growth.
- v. Infrastructure development such as transport networks, communication networks, technological platforms support the efficient functioning of the financial institutions

5.2 GOVERNMENT AND BUSINESS

SECTION A

- 1. B
- 2. B
- 3. C
- 4. B
- 5. B
- 6. C
- 7. B
- 8. A
- 9. D
- 10. B

11. B

12. C

13. B

14. B

15. B

SECTION B

16. (a) To protect the environment

To control environmental degradation and pollution.

To protect the community's health and safety.

(b) Enforcing legislation and environmental standards.

The government, through environmental protection bodies (such as NEMA) can set strict anti-pollution laws.

Impose legal penalties.

Shut down non-compliant factories.

Imposing green taxes or fines.

Imposing heavy pollution taxes or fines ("polluter pays" principle) makes it financially unprofitable for the factory to dump toxic waste.

Requiring waste treatment facilities.

Mandatory licenses

Mandating that the factory install proper effluent treatment plants (ETP) before issuing or renewing their operating license. (Any two fully explained)

17. (a) Business Registration / Licensing (or Obtaining a Trade Permit).

(b) Regulation and standard control to ensure that businesses adhere to set standards of safety, quality, and consumer protection.

Taxation and revenue collection to keep accurate records of operating businesses for income tax, VAT, and local municipal levy collection.

Maintaining law and order to prevent illegal or harmful commercial activities in the community.

Planning and statistical purposes help the government gather data for economic planning, resource distribution, and infrastructure development. (Any three)

18. (a) Infrastructure (or Infrastructure Development / Basic Public Utilities).

(b) i) Reduces operational and maintenance costs: Well-maintained roads reduce vehicle wear and tear and lower fuel consumption for transport businesses.

ii) Enhances business accessibility and efficiency: Good transport networks enable faster delivery of goods and service delivery to customers.

iii) Promotes security and extended working hours: Reliable streetlighting improves safety at night, allowing businesses to operate for longer hours.

iv) Ensures business continuity: Stable power supply prevents costly downtime and equipment damage. (Any three)

19. (a) Monopoly. (Note: The unfair pricing practice being used is known as Predatory Pricing).

(b) i) Enforcing anti-monopoly and competition laws: The government through regulatory bodies (such as the Competition Authority) can penalize predatory pricing practices, enforce fair competition policies, and prevent price-undercutting designed to drive out competitors.

ii) Imposing price controls.

20. (a) To protect workers from exploitation and unsafe working conditions by ensuring business owners treat employees fairly and maintain a safe environment.

(b) i) Enforce Minimum Wage Laws: Require the farm owner to pay all workers at least the government-mandated minimum wage so they receive fair compensation for their labor.

ii) Mandate Occupational Health and Safety (Provide Protective Gear); Require employers to supply essential protective equipment (such as gloves, boots, and masks) to protect workers from harmful farm chemicals and hazards.

iii) Limit Working Hours and Mandate Overtime Pay: Strictly enforce maximum daily/weekly working hours (e.g., standard 8-hour workdays) and ensure workers receive extra pay for any overtime worked.

iv) Mandate Regular Workplace Inspections: Send government officers (labor inspectors) to periodically check the farm and penalize employers who violate labor standards. (Extra point for variety)

21. a) eCitizen platform

b) The platform facilitates:

i) Payment of taxes.

- ii) Filing of annual returns.
- iii) Registration of property rights.
- iv) Registration of businesses.

22. (a) To protect consumers from;

- i) unfair business practices
- ii) unsafe products
- iii) health risks caused by unscrupulous traders.

(b) i) Revoke or Suspend Business License: The government can cancel the seller's operating license to prevent them from selling dangerous items to the public.

- ii) Impose Fines and Legal Prosecution: Take legal action against the business owner through statutory regulatory bodies (like KEBS) and mandate heavy monetary penalties or jail time for endangering public health.
- iii) Order Product Recalls and Destruction: Require the shop owner to immediately recall all affected products from store shelves and destroy expired goods safely.
- iv) Mandate Compensation for Damages: Force the business to refund affected customers and cover medical expenses caused by the unsafe products.
- v) Conduct Regular Quality Inspections: Send public health and standards officers to inspect products, verify expiration dates, and check label authenticity on retail and wholesale stock.

23. a) Pay As You Earn

(b) i) Funding Infrastructure Development: The government uses tax revenue to build and maintain public roads, railways, bridges, and energy networks that support trade and daily transportation.

ii) Providing Essential Public Services: It finances basic public services such as healthcare (funding public hospitals and medicines) and free primary and secondary education.

iii) Paying Salaries of Civil Servants: The revenue pays salaries for public workers who serve citizens, such as teachers, police officers, doctors, and nurses.

- iv) Enhancing Public Security: It helps equip and maintain national security forces to keep communities safe and maintain law and order.

24. a) Subsidies

(b) i) **Lowers Production Costs and Consumer Prices:** Financial support lowers the business's operational costs, enabling them to sell products (like solar panels) at lower prices, making clean energy affordable for citizens.

ii) **Creates Employment Opportunities:** Assisting struggling companies prevents layoffs and allows them to expand, creating job opportunities for local citizens to earn an income.

iii) **Encourages Local Innovation and Industry Growth:** Support helps domestic infant industries grow, reducing reliance on expensive imports and boosting overall economic output.

iv) **Promotes Sustainable Living:** Lower costs for products like solar panels improve citizens' quality of life by providing reliable energy and reducing environmental pollution.

25. a) Stamp Duty

(b) i) **Provides Proof of Ownership (Legal Security):** Official registration guarantees legal ownership via a title deed, protecting Fatuma from land grabbing, fraud, or title disputes in the future.

ii) **Enables Use of Land as Collateral:** A legally registered title deed allows Fatuma to secure loans from banks using the land as security to grow her business.

iii) **Prevents Double Sale and Fraud:** An official land registry record prevents the previous owner from fraudulently selling the same plot to another person.

iv) **Ensures Smooth Future Transfers:** Having clean, registered ownership makes it easy and lawful for Fatuma to sell, lease, or pass down the land to heirs later without legal roadblocks.

26. (a) **Excise Duty** is a tax levied by the government on specific locally manufactured goods or services (such as alcohol, cigarettes, or luxury items) to regulate their consumption or raise government revenue.

(b) i) **Discourage Harmful Consumption:** Raising prices through high taxes discourages citizens from overconsuming health-damaging products like tobacco, alcohol, and sugary drinks.

ii) **To Reduce Public Healthcare Costs:** Lowering the consumption of harmful goods reduces lifestyle diseases (e.g., cancer, diabetes, addiction), saving the government funds spent on public healthcare.

iii) **To Protect Social Welfare:** High taxes reduce social problems linked to substance abuse, such as domestic violence, road accidents, and lost workplace productivity.

- iv) To Generate High Government Revenue: Because these goods are habit-forming and remain in high demand, high tax rates generate substantial tax revenue for the state.

27. To guarantee national security, equal access, and protection of public interest without focusing on commercial profit.

(b) i) Risk of Exploitation and High Costs: Private companies operate primarily for profit, which could make essential services like national defense or security unaffordable for ordinary citizens.

ii) Threat to National Security and Sovereignty: Private security firms could be compromised, corrupted, or bribed by external enemies or private interests, putting the country's safety at risk.

iii) Unequal Access to Services: Private firms might only provide security or services to wealthy areas that can afford them, leaving poor or rural communities unprotected.

28. a) i) Fines and Monetary Penalties: KRA can impose heavy legal fines, interest penalties, or late-filing fees on his tax account.

ii) Closure of Business or License Cancellation: The government can revoke his business operating permit or forcibly shut down his shop until he complies.

iii) Legal Prosecution or Asset Seizure: KRA can take Mwangi to court, freeze his bank accounts, or auction his business assets to recover unpaid taxes.

(b) i) Access to Business Credit and Loans: Banks and financial institutions require tax compliance certificates before approving business loans for expansion.

ii) Opportunity to Secure Government Tenders and Contracts: A tax-compliant business can bid for lucrative government contracts and supply products to formal corporate clients.

iii) Peace of Mind and Business Continuity: Compliance protects his retail shop from sudden closures, fines, or legal embarrassment, allowing him to run operations smoothly.

29. Value Added Tax (VAT)

(b) i) VAT is charged on goods and services, while income tax is charged on earnings.

ii) VAT is an indirect tax, while income tax is a direct tax.

iii) Consumers pay VAT when they make purchases, while workers pay income tax on their salaries.

iv) VAT is collected by businesses on behalf of the government, while income tax is paid directly by individuals and companies.

- v) Everyone who buys taxable goods and services pays VAT, while only those who earn taxable income pay income tax.

30. a) Redistribution of income / Reducing income inequality (or promoting social equity).

(b) i) Provides Free/Affordable Healthcare: Low-income citizens can access treatment and medicines without facing financial ruin from high medical bills.

ii) Increases Access to Quality Education: Subsidizing school fees allows children from poorer households to attend school, improving future employment prospects.

iii) Narrows the Gap Between the Rich and Poor: It ensures that national resources benefit everyone, uplifting vulnerable families and improving overall quality of life.

- iv) Boosts Basic Household Disposable Income: When basic needs like health and education are funded by the state, low-income families can save their earnings for food, housing, and other necessities.

5.3 BUSINESS PLAN

SECTION A

1. B
2. C
3. A
4. B
5. C
6. B
7. C
8. B
9. C
10. A
11. B
12. C
13. A
14. D
15. B

SECTION B

16.

a. A business plan is a written document that outlines the goals of a business and details step-by-step how those goals will be achieved.

b.

- * Business name and contact details.
- * Description of goods or services offered.
- * Financial plan (budget and expected profits).

17.

a. It acts as a guide by setting clear goals, identifying step-by-step activities to undertake, and preventing the business owner from making costly decisions without prior planning.

b.

- * Helps in securing loans from financial institutions.
- * Guides to daily business operations and decision-making.
- * Helps to identify potential risks and problems early.

18.

The plan helps Chidi compare different suppliers by looking at prices, quality, and location outlined in his strategy, ensuring he chooses the most reliable and affordable source for his stock.

19. During the planning stage, Mwangi conducts risk analysis, which helps him anticipate challenges (like feed price spikes or disease outbreaks) so he can prepare backup solutions before starting operations.

20. She compares her actual daily or monthly sales and expenses against the financial projections written in her business plan to see if she is on track.

21. It provides step-by-step instructions on how much capital is needed, the new location's target market, and the timeline required to open and run the new branch successfully.

22. The bank manager needs proof that Joseph's bakery will be profitable enough to pay back the loan with interest.

23. It outlines the exact amount of money, time, and materials required for production, preventing wastage and overspending.

24. It gives a quick overview of the entire business plan so investors or readers can understand the main business ideas quickly without reading the whole document. It includes:

- * Business name and location.
- * The problem the business solves and its products/services.
- * Financial requirements and profitability projection.

25.

- * Name of the business: Gracious Traders
- * Name of owner(s): Grace Mulwa
- * Business Location / Contacts: CBD, Haile Selassie Avenue (P.O. Box 608-00100, Nairobi / Phone: +254119876524)

b. A written document that details how a business will be set up, operated, and managed to achieve its goals.

c. She should include the types of juices offered, ingredients used, packaging sizes, and pricing.

- d. It helps customers understand what benefits the product offers (e.g., fresh, healthy, affordable) and why it is better than alternatives.

26. Who are the buyers (age, gender, income level).

What type of shoes they prefer and how often they buy.

b. Number of competing shoe shops nearby.

Prices charged by competitors and quality of their products.

Weaknesses of competitors that he can exploit.

27. Starting capital: Total money needed to start the business.

Expected revenue: Income expected from sales.

Operating expenses: Daily costs such as rent, transport, and utilities.

28. a. Distributing flyers or posters.

Offering discounts or promotions to first-time buyers.

Using social media platforms to showcase furniture samples.

b. Simple Business Plan Format for Patrick:

1. **Business Description:** Patrick's Carpentry Workshop – makes quality household furniture.

2. Target Market: Homeowners and local schools in the community.

3. **Marketing Strategy:** Social media promotion and displaying finished furniture outside the workshop.

4. **Operational Plan:** Buy timber locally, assemble furniture using basic tools, and deliver to customers.

5. **Financial Plan:** Estimated start-up capital, monthly expenses, and projected profits.

29. A template is a pre-formatted outline or guide with blank sections. It makes planning simple for beginners by showing them exactly what information to fill in step-by-step, so no important detail is left out.

