

KENYA NATIONAL EXAMINATION AND ASSESSMENT PREDICTION SERIES

ENDTERM 2 ASSESSMENT 2025

GRADE 7

PRETECHNICAL STUDIES PAPER 1

MARKING SCHEME

SECTION A (30 marks)

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

SECTION B: STRUCTURED QUESTIONS (50 marks)

Instructions: Answer ALL the questions in this section in the spaces provided.

31. State two differences between Technical Drawing and Artistic Drawing. (2 marks)

Technical Drawing: Primarily focuses on precision, accuracy, and providing exact information for manufacturing or construction. It uses standardized lines, symbols, and conventions.

Artistic Drawing: Emphasizes expression, aesthetics, and conveying emotion or a visual concept. It allows for creative interpretation and often uses varied styles and techniques.

Another difference: Technical drawing uses specific instruments and rules (e.g., rulers, compasses, scales) to create precise representations, while artistic drawing often relies on freehand techniques and personal style.

Another difference: Technical drawings are objective and universal, aiming for clarity and avoiding ambiguity, whereas artistic drawings are subjective and open to individual interpretation.

b) **Identify the following artistic drawing. (2 marks)**

A-portrait

B-graffiti

32. **Daudi was learning how to draw in pre-technical studies. State two importance of drawing as a means of communication (3 marks)**

- i. **Conveys complex ideas visually:** Drawing can simplify complex technical or design concepts into an easily understandable visual format, which is often clearer than written descriptions.
- ii. **Universal language:** Drawings use symbols and conventions that are understood globally, overcoming language barriers in design, engineering, and manufacturing.
- iii. **Facilitates planning and problem-solving:** Drawing allows ideas to be sketched, refined, and tested visually before actual production, helping to identify and solve potential problems early.
- iv. **Documents and records information:** Technical drawings serve as permanent records of designs, specifications, and construction details for future reference, maintenance, or modifications.
- v. **Aids in creativity and ideation:** The act of drawing helps in brainstorming, developing, and visualizing new concepts and designs.

33. **The picture below shows a common tool found in a workshop.**

a) **Identify the tools shown above. (2 marks)**

Tool 1 : Vernier calipers

Tool 2 : Tape measure

b) **State two uses of the tool below. (2 marks)**

Checking for squareness: Used to check if surfaces or edges are at a perfect 90-degree angle to each other.

Marking lines: Used to mark lines at 90 degrees to an edge on a work-piece.

Setting out: Can be used to set out or measure short distances, especially for perpendicular lines.

34. **During a pre-technical studies lesson, learners were asked to identify metals in their locality.**

a) **Give two uses of iron metal. (2 marks)**

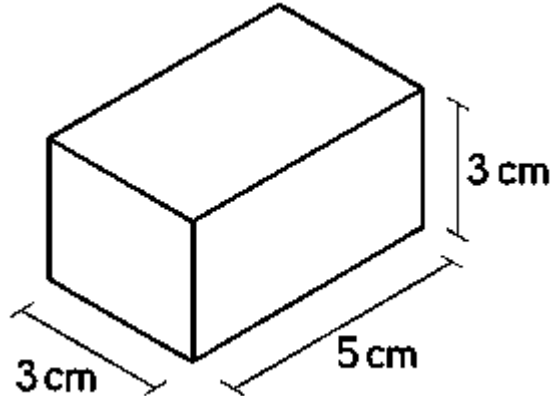
- i. Used in construction for reinforcing concrete (e.g., rebar).
- ii. Used to make tools and machinery (e.g., cast iron parts, steel tools which are iron alloys).
- iii. Used in manufacturing of vehicles, appliances, and various structures.
- iv. Used for making gates, fences, and decorative items (e.g., wrought iron).

b) **Name the metal that has been used to make the following items. (2 marks)**

- i. **Item 1 (Cooking Pot):** Aluminum (often used for lightweight, good heat conductivity cookware) or Stainless Steel (for durability and hygiene).

ii. **Item 2 (Electrical Wires):** Copper (excellent electrical conductivity).

- **Orthographic projection is a common method of representing 3D objects in 2D. Make a free hand sketch of a rectangular prism with dimensions 5cm x 3cm x 2cm in isometric projection. (2 marks)**



b) **Identify the following 3D shapes. (2 marks)**

Shape 1 Cone

Shape 2 Ellipsoid

35. **During a drawing lesson, learners drew different sketches. State two techniques for freehand sketching. (2 marks)**

- i. **Ghosting:** Making light, rapid, tentative strokes in the air above the paper before committing to a line, to build confidence and accuracy.
- ii. **Overlapping strokes:** Building up a line by using several light, overlapping strokes instead of one heavy continuous stroke, which helps in achieving straighter lines and better curves.
- iii. **Using your elbow/shoulder:** Drawing long lines by moving your entire arm from the shoulder or elbow, rather than just your wrist, to produce straighter lines.
- iv. **Grid method:** Using a light grid (either drawn or imagined) to help maintain proportions and alignment when sketching.
- v. **Construction lines:** Starting with very light construction lines to define the basic shape and proportions before adding darker, final lines.

36. **Learners drew various lines on their books.**

a. **What is the name of the following line? (2 marks)**

- i. **dimension line**
- ii. **cutting plane**

b. **What is the meaning of the following symbols. (2 marks)**

i diameter

ii perpendicular

37. **Grade 7 learners visited a certain production site. Identify two categories of material used for production. (2 marks)**

- i. **Raw Materials:** Materials in their unprocessed or minimally processed state, extracted from natural sources (e.g., timber, metal ores, crude oil, cotton).
- ii. **Manufactured Materials/Components:** Materials that have undergone some processing or are finished components ready for assembly (e.g., plywood, steel sheets, plastic pellets, electronic chips, screws).
- iii. **Consumable Materials:** Materials used up during the production process, not necessarily forming part of the final product (e.g., sandpaper, glue, paint, cutting fluid).

38. **Mary started a small business selling clothes. At the end of the month, she had the following financial details:**

Total sales -35,000

Total expenses -12,000

Calculate Mary's Profit for the month. (2 marks)

Explanation: Profit = Total Sales - Total Expenses

Profit = Ksh 35,000 - Ksh 12,000 = Ksh 23,000. Answer: Ksh 23,000

b) **Mary was given the following currencies by a customer. Identify the current currency used in Kenya today.**

Answer: B Explanation:

The current currency used in Kenya today is the **Kenyan Shilling (Ksh)**, represented by the latest series of banknotes and coins issued by the Central Bank of Kenya. The question implies a visual distinction between old and current notes/coins.

39. **Learners were asked to identify different businesses they can start at home to generate them an income. Identify two businesses likely to be mentioned.(2 marks)**

- i. Baking/Catering (e.g., selling cakes, snacks)
- ii. Poultry Farming (e.g., selling eggs, chickens)
- iii. Small-scale craft making (e.g., jewelry, woven baskets, artistic cards)
- iv. Tutoring/Online teaching (e.g., helping younger students with homework)
- v. Hairdressing/Barbering (if skills and space allow)
- vi. Gardening/Vegetable selling (selling produce from a home garden)
- vii. Digital services (e.g., graphic design, content writing, social media management, if skills and internet access available)
- viii. Digital device repair business
- ix. Biogas production business
- x. Tailoring business
- xi. Water selling business
- xii. Plastic recycling business
- xiii. Scrap metal recycling business
- xiv. Car /motorbike washing business etc

40. **Mr. Kimani wants to start business furniture. Outline two ICT tools he should use to market his business. (2 marks)**

- i. **Social Media Platforms:** (e.g., Facebook, Instagram, TikTok) to showcase furniture designs, post photos, run ads, and engage with potential customers.
- ii. **Website/E-commerce platform:** To create an online presence, display a catalog of furniture, provide contact information, and potentially facilitate online sales.
- iii. **Email Marketing Tools:** To send newsletters, promotions, and updates to subscribed customers.
- iv. **Online Marketplaces:** (e.g., Jumia, local online classifieds) to list and sell furniture.
- v. **Digital Advertising Platforms:** (e.g., Google Ads) to run targeted advertisements.

41. **Communication is very important for a business. a) Identify two benefits of communication. (2 marks)**

- i. **Enhances understanding and coordination:** Clear communication ensures that instructions are understood and tasks are coordinated effectively, leading to smoother operations.
- ii. **Builds relationships and trust:** Effective communication fosters positive relationships with customers, suppliers, and employees, building trust and loyalty.
- iii. **Facilitates problem-solving and decision-making:** Open communication allows for sharing of ideas, feedback, and challenges, leading to better solutions and informed decisions.
- iv. **Promotes innovation:** Sharing ideas and information encourages creativity and the development of new products or processes.
- v. **Boosts morale and productivity:** When employees feel heard and informed, it improves their morale and motivation, leading to higher productivity.

b) **State one component of communication. (1 mark)**

- i. **Sender:** The person who initiates the message.
- ii. **Message:** The information being conveyed.
- iii. **Encoding:** The process of converting the message into a format (words, gestures, symbols) that can be sent.
- iv. **Channel/Medium:** The means through which the message is sent (e.g., verbal, written, visual, email, phone call).
- v. **Receiver:** The person to whom the message is directed.
- vi. **Decoding:** The process by which the receiver interprets the message.
- vii. **Feedback:** The receiver's response to the message, indicating whether it was understood.
- viii. **Noise:** Any interference that distorts or hinders the message.

42. **A Grade 7 learner wants to store their completed digital project files for future access. State one computer storage device that can be used for long-term storage of these files. (1 mark)**

- i. Hard Disk Drive (HDD)
- ii. Solid State Drive (SSD)
- iii. USB Flash Drive (Pen Drive)
- iv. External Hard Drive
- v. Cloud Storage (e.g., Google Drive, Dropbox, OneDrive)
- vi. Memory Card (e.g., SD card)

43. **Match each of the following computer hardware devices with their respective function. (2 marks)**

Device	Function
Speaker	Produces audio output.
Microphone	Captures sound input.
Central Processing Unit (CPU)	Processes and executes instructions.
Mouse	Allows interaction with the computer by clicking and pointing.

45. **Internet safety is crucial when interacting online. Name two common online threats that learners should be aware of. (2 marks)**

- i. **Phishing:** Deceptive attempts to acquire sensitive information (like usernames, passwords, credit card details) by disguising as a trustworthy entity in electronic communication (e.g., fake emails, websites).
- ii. **Cyberbullying:** Harassment or bullying using electronic communication (e.g., social media, messaging apps).
- iii. **Malware (e.g., Viruses, Worms, Ransomware):** Malicious software designed to disrupt, damage, or gain unauthorized access to computer systems.
- iv. **Online predators:** Individuals who target children or vulnerable individuals online for exploitation.
- v. **Identity Theft:** The fraudulent appropriation and use of someone's personal identifying information (e.g., name, ID number, bank details) for financial gain or other purposes.
- vi. **Scams:** Fraudulent schemes designed to trick users into giving money or personal information.
- vii. **Ransomware**
- viii. Calls/messages/invites from unknown people

Types of Online Threats:

- 📖 **Malware:** This is a broad term for "malicious software" designed to infiltrate, damage, or gain unauthorized access to computer systems. It includes:
 - ✳ **Viruses:** Code that replicates by copying itself to other programs or files.
 - ✳ **Worms:** Self-replicating malware that spreads across networks, exploiting vulnerabilities.
 - ✳ **Trojans (Trojan Horses):** Malicious code disguised as legitimate software to trick users into downloading and installing it.
 - ✳ **Ransomware:** A type of malware that encrypts your files and demands a ransom (usually in cryptocurrency) for their decryption.
 - ✳ **Spyware:** Software that secretly monitors your online activities and collects personal information without your knowledge.
 - ✳ **Adware:** Software that displays unwanted advertisements, often intrusively, and can sometimes track Browse habits.
 - ✳ **Cryptomining Malware:** Uses your computer's processing power to mine cryptocurrency without your permission.
- 📖 **Phishing:** A social engineering tactic where attackers impersonate trustworthy entities (like banks, government agencies, or well-known companies) to trick you into revealing sensitive information (passwords, bank details, etc.). This often occurs through:
 - ✳ **Email Phishing:** Fraudulent emails with malicious links or attachments.
 - ✳ **Smishing:** Phishing attacks via SMS messages.
 - ✳ **Vishing:** Phishing attacks conducted over the phone (voice phishing).
 - ✳ **Spear Phishing:** Highly targeted phishing attacks aimed at specific individuals or organizations, often using personalized information to appear more legitimate.
 - ✳ **Quishing:** Phishing attacks using QR codes that lead to malicious sites.
- 📖 **Identity Theft:** When cybercriminals steal your personal information to impersonate you for fraudulent activities, such as opening credit accounts, making purchases, or accessing your financial data.
- 📖 **Data Breaches:** Unauthorized access to or release of personal information, either accidentally or as a result of a security breach.
- 📖 **Hacking:** Unauthorized access to a system or network, often to exploit data or manipulate its behavior. This can include:
 - ✳ **Account Compromise:** Gaining unauthorized access to email, banking, or other online accounts.
 - ✳ **Business Email Compromise (BEC):** A scam targeting businesses that often involves impersonating executives to trick employees into making fraudulent money transfers or sharing sensitive information.
- 📖 **Distributed Denial of Service (DDoS) Attacks:** Overwhelming a server, website, or network with a flood of traffic from multiple compromised computers (a "botnet") to make it unavailable to legitimate users.

- 📖 **Social Engineering:** Manipulating individuals into performing actions or divulging confidential information. Phishing is a prime example, but it also includes tactics like:
 - ✳️ **Baiting:** Luring users with promises of attractive offers (e.g., free gift cards) to trick them into a trap.
 - ✳️ **Pretexting:** Creating a false scenario or "pretext" to gain trust and extract information.
- 📖 **Online Scams:** Deceptive schemes designed to defraud individuals of money or personal information, often using familiar brands or logos to appear credible. This can include romance scams, lottery scams, and more.
- 📖 **Vulnerabilities:** Weaknesses in software, hardware, or network configurations that attackers can exploit. This highlights the importance of keeping software updated and systems properly configured.
- 📖 **Cyberbullying:** Using the internet to harm or harass someone.

46. **The following are steps involved in using a word processor to type a document. They are not in the correct order.**

- (i) Save the document.
- (ii) Open the word processing application.
- (iii) Type the content of the document.
- (iv) Format the document.

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

Correct Order:

- 1. (ii) Open the word processing application.
- 2. (iii) Type the content of the document.
- 3. (iv) Format the document.
- 4. (i) Save the document.

47. **What is the main purpose of an Operating System (OS) in a computer? (1 mark)**

The main purpose of an Operating System (OS) is to **manage computer hardware and software resources** and provide common services for computer programs. It acts as an **interface between the user and the computer hardware**.

48. **Benard wants to send a private message to a friend online. He is concerned about his privacy. State one measure Benard can take to ensure his message is private. (1 mark)**

- i. Use an **encrypted messaging app** (e.g., WhatsApp, Signal, Telegram with end-to-end encryption).
- ii. Avoid sharing personal details or sensitive information in the message.
- iii. Use a strong, unique password for his messaging account.
- iv. Be mindful of the platform's privacy settings.

How to Protect Yourself Against Online Threats:

📖 **Use Strong and Unique Passwords:**

- ⌘ Create long, complex passwords (at least 12-14 characters) with a mix of uppercase and lowercase letters, numbers, and symbols.
- ⌘ Avoid using personal information or easily guessable words.
- ⌘ Use a unique password for each online account.
- ⌘ Consider using a reputable password manager to generate and store strong, unique passwords securely.
- ⌘ Change passwords regularly, especially if you suspect a breach.

- 🔒 **Enable Multi-Factor Authentication (MFA/2FA):** This adds an extra layer of security by requiring a second form of verification (e.g., a code sent to your phone, a fingerprint, or a security key) in addition to your password.
- 🔄 **Keep Software and Operating Systems Updated:** Enable automatic updates for your operating system, web browsers, applications, and antivirus software. Updates often include critical security patches for newly discovered vulnerabilities.
- 🛡️ **Install and Maintain Antivirus/Anti-Malware Software:** Use reputable security software on all your devices and keep it updated to detect and remove malicious programs.
- 🔒 **Be Cautious with Emails, Messages, and Links:**
 - ⚠️ Think before you click on suspicious links or open unexpected attachments from unknown senders.
 - ⚠️ Be wary of unsolicited messages, especially those asking for personal information or creating a sense of urgency.
 - ⚠️ Verify the sender's identity and the legitimacy of links by hovering over them (without clicking) to see the actual URL.
 - ⚠️ Look for spelling errors, poor grammar, or mismatched links, which are common signs of phishing.
- 🔒 **Secure Your Internet Connection:**
 - ⚠️ Always protect your home Wi-Fi network with a strong password.
 - ⚠️ Be cautious when using public Wi-Fi; avoid performing sensitive transactions (like online banking) on unsecured public networks. Consider using a Virtual Private Network (VPN) for added security when on public Wi-Fi.
- 🔒 **Limit Sharing Personal Information Online:** Be mindful of what you share on social media and other public platforms, as cybercriminals can use this information for identity theft or social engineering.
- 🔄 **Regularly Back Up Your Data:** Store important documents, photos, and files on an external hard drive or a cloud-based storage system. This protects your data in case of ransom-ware attacks, hardware failure, or other data loss incidents.
- 🔒 **Review Privacy Settings:** Understand and adjust the privacy settings on your social media accounts and other online services to control who can see your information.
- 🔒 **Be Aware of Common Scams:** Educate yourself on different types of online scams (romance scams, tech support scams, fake investment schemes) to recognize and avoid them.
- 🔒 **Report Suspicious Activity:** If you encounter a phishing attempt, suspicious website, or believe you've been a victim of a cyber-attack, report it to the relevant authorities (e.g., your internet service provider, bank, or national cyber-security center).

49. Grade 7 learners prepared the following spreadsheet to track their project expenses.

	A	B	C	D
1	ITEM	QUANTITY	UNIT COST (Ksh)	TOTAL COST (Ksh)
2	Wood	2	300	600
3	Nails	1	50	50
4	Paint	1	250	250
5	Glue	1	100	100
6	Total Expenses			

Write the formula that the learners would use to calculate the Total Expenses in cell D6. (2 marks)

Explanation:

To calculate the total expenses, you need to sum the values in the "TOTAL COST (Ksh)" column, specifically from cell D2 to D5.

Answer: =SUM(D2:D5)*or =D2+D3+D4+D5

50. A Pre-Technical Studies teacher developed a simple computers classification chart. (Assumed image of a flow chart for computer classification, with 'X' likely representing a common category like "Desktop Computers" or "Personal Computers".) Which type of computer would fill the space X above?

Analog computers