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INFORMATION COMMUNICATION TECHNOLOGY

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TOPICALLY ARRANGED

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Past Paper with Answers

CONTENT **PAGE**

Questions

Topic 1: Introduction to information communication technology (ICT) ……..…11
Topic 2: Overview of operating systems……16
Topic 3: An overview of application packages……..……20
Topic 4: Computer networks…….…….30
Topic 5: The Internet ……..…37
Topic 6: Data security……..…40
Topic 7: Information systems in an enterprise ……..…….47
Topic 8: E-Commerce ……..…..……56
Topic 9: Mobile devices and applications ……...……..…..…60
Topic 10: Systems analysis and design ……..…62
Topic 11: Legal, ethical and social issues in information systems ……70

Suggested answers and solutions:

Topic 1: Introduction to information communication technology (ICT) ……76
Topic 2: Overview of operating systems……..……98
Topic 3: An overview of application packages…….…..118
Topic 4: Computer networks……..…….159
Topic 5: The Internet ……..…….198
Topic 6: Data security…….……208
Topic 7: Information systems in an enterprise ……...…240
Topic 8: E-Commerce ……283
Topic 9: Mobile devices and applications ……...……...…306
Topic 10: Systems analysis and design ……..…...…317
Topic 11: Legal, ethical and social issues in information systems ……361

PART A

PAST EXAMINATION QUESTIONS

TOPIC 1

INTRODUCTION TO INFORMATION COMMUNICATION TECHNOLOGY (ICT)

QUESTION 1

December 2025 Question One A

List **THREE** types of computer input devices. (3 marks)

QUESTION 2

August 2025 Question One C

Using suitable examples, explain **SIX** roles of information communication technology (ICT) in shaping the modern business environment. (12 marks)

QUESTION 3

August 2025 Question Three A and B

(a) Identify **FOUR** mechanical devices that were used for counting before the emergence of electronic computers. (4 marks)

(b) Explain **FOUR** functions of programming language translators. (4 marks)

QUESTION 4

August 2025 Question Four B and D

(b) Highlight **SIX** factors to be taken into consideration when selecting a printer for purchase. (6 marks)

(d) Discuss THREE data processing modes. (6 marks)

QUESTION 5

August 2025 Question Five B

(i) Explain the term "information centre". (2 marks)

(ii) Summarise **FOUR** services offered by an information centre. (4 marks)

QUESTION 6

August 2025 Question Six B

Outline **FOUR** measures one could take to reduce wrist strain when using a computer. (4 marks)

QUESTION 7

August 2025 Question Seven A

Distinguish between "portability" and "compatibility" as used in computer hardware.

PART B

SUGGESTED

ANSWERS AND SOLUTIONS

TOPIC 1

INTRODUCTION TO INFORMATION COMMUNICATION TECHNOLOGY (ICT)

QUESTION 1

December 2025 Question One A

Types of computer input devices.

- **Keyboard:** The primary device for typing text, numbers, and commands, featuring alphanumeric keys, function keys, and controls.
- **Mouse:** A pointing device that controls the on-screen cursor, allowing users to click, drag, and navigate graphical interfaces.
- **Microphone:** Captures sound, enabling voice commands, audio recording, and online communication.
- **Scanner:** Converts physical documents, photos, or text into digital formats for the computer.
- **Webcam:** Captures live video and images, commonly used for video conferencing and streaming

QUESTION 2

August 2025 Question One C

Roles of information communication technology (ICT) in shaping the modern business environment.

- **Improving customer relationship management (CRM):** ICT tools help businesses manage customer interactions, track behavior, and provide personalized service, leading to enhanced customer satisfaction and loyalty.

  Example: Companies use CRM software like Salesforce to log every customer call, email, and purchase history. This allows customer service agents to view a customer's complete history and address issues efficiently.
- **Supporting e-commerce and market expansion:** ICT enables businesses to establish an online presence, such as e-commerce websites and mobile apps, providing access to a global audience and operating 24/7.

  Example: A small artisanal business can use an e-commerce platform like Shopify to sell its products worldwide, effectively competing with larger enterprises and expanding its market reach far beyond a local physical storefront.
- **Enabling data management and analytics:** Modern businesses generate vast amounts of data. ICT tools collect, store, process, and analyze this data to provide valuable insights for strategic decision-making.

Example: A retail company might use business intelligence platforms like Tableau or Power BI to analyze customer purchasing habits, allowing managers to identify trends, optimize product offerings, and launch targeted marketing campaigns.

- **Enhancing operational efficiency and productivity:** By automating repetitive tasks and streamlining workflows, ICT significantly boosts productivity and reduces human error.

  Example: Retail businesses use Point-of-Sale (POS) systems that automatically track sales, manage inventory levels, and trigger reorders, eliminating manual record-keeping and ensuring optimal stock levels.
- **Facilitating communication and collaboration:** ICT provides essential tools that enable seamless and rapid communication, breaking down geographical barriers.

  Example: Multinational corporations use unified communication software like **Microsoft Teams**
- **Optimizing supply chain management (SCM):** ICT provides visibility across the entire supply chain, from manufacturing to delivery, allowing for better coordination and reduced costs.

  Example: Large logistics companies use GPS tracking and IoT sensors to monitor the real-time location and environmental conditions of shipments, optimizing delivery routes and ensuring products arrive on time and in good condition.
- **Strengthening cybersecurity and data protection:** As businesses become more digital, protecting sensitive data from cyber threats is crucial. ICT provides the necessary security infrastructure to safeguard information.

  Example: A bank implements multi-factor authentication (MFA) and encryption technologies to protect customer financial data and internal communications, building customer trust and ensuring compliance with data protection regulations.

QUESTION 3

August 2025 Question Three A and B

(a) **Mechanical devices that were used for counting before the emergence of electronic computers**.

Abacus: One of the earliest known adding machines, this device uses beads on rods to perform calculations. Its origins are ancient, with variations used across different cultures for thousands of years.

Napier's Bones: Invented by John Napier in 1614, this is a set of rods with numbers on them that simplifies multiplication and division using a method similar to long multiplication.

Pascaline: Created by Blaise Pascal around 1642, this was one of the first mechanical calculators to perform addition and subtraction automatically using gears and wheels.

Slide Rule: This device, popular in the 19th and 20th centuries, uses scales based on logarithms to perform multiplication, division, and other functions such as roots and exponents.

(b) **Functions of programming language translators**.

- **Translation of Source Code to Machine Code**: The fundamental purpose of a translator is to convert the source code written in a high-level (or assembly) language into machine code (object code) that a computer's central processing unit (CPU) can directly understand and execute.
- **Error Detection and Diagnostics**: Translators scan the source code for syntax errors (grammatical mistakes in the code), semantic errors (logic or type compatibility issues), and other issues. They provide diagnostic messages to help programmers identify and correct these errors.
- **Code Optimization**: Compilers, in particular, analyze the entire program to optimize the translated machine code, making the program run faster or use less memory space. This ensures the resulting program is efficient in its use of system resources.
- **Management of Memory Allocation and Resources**: The translator manages the allocation of memory portions from the operating system, maps relative addresses to physical memory addresses, and initializes registers to prepare the program for execution.
- **Linking and Loading (for compilers)**: Compilers generate object code that may need to be combined with other object modules or library routines. A linker combines all these parts into a single, complete executable file, which is then placed in memory by a loader to run. (Interpreters handle this differently, by executing line by line without creating a separate executable file).

QUESTION 4

August 2025 Question Four B and D

(b) Factors to be taken into consideration when selecting a printer for purchase.

- **Primary purpose / type:** Determines cost, speed, and quality. Inkjet is best for color, photos, and lower volume. Laser is best for fast, high-volume black-and-white text. All-in-One adds scanning, copying, and often faxing.
- **Total cost of ownership (TCO)**: A cheap printer can have very expensive cartridges, making it costly to run over time. Research the cost per page (CPP) of the replacement ink/toner.
- **Print volume & speed**: How much and how fast you print. For a busy office, you need high PPM and a robust Duty Cycle (the maximum pages the manufacturer recommends per month) to avoid premature wear.

- **Print quality & resolution**: Higher DPI means sharper, more detailed prints. This is especially important if you plan to print high-quality photos or detailed graphics.
- **Connectivity**: Ensure it supports how you want to print (from a computer, laptop, smartphone, or tablet). Wi-Fi Direct, Apple AirPrint, or Google Cloud Print are modern conveniences to look for.
- **Paper handling & capacity:** A large tray is crucial for high-volume use. Auto Duplexing (printing on both sides automatically) saves paper. Check if it handles special paper sizes (A3, legal) or media (cardstock, envelopes).
- **Physical size and location**: A large, high-volume laser printer might not fit on your home desk. Similarly, check the noise level (measured in decibels) if the printer will be used in a shared or quiet environment.

(d) Data processing modes.

- **Batch processing**: This method involves collecting data over a period and then processing it all together in a batch. It's ideal for large-scale, non-urgent tasks where speed isn't a critical factor, such as payroll systems or billing.
- **Real-time processing:** This mode processes data immediately as it is input, providing an instant response. It is critical for applications that require up-to-the-second information, like ATM transactions or control systems.
- **Online processing:** This method processes data as transactions occur, with a direct connection to the computer's CPU. It can handle tasks in real-time or be used for continuous operations like a barcode scanner processing items at a checkout.

QUESTION 5

August 2025 Question Five B

(i) **The term "information centre".**

An Information Centre is a central location within an organization, such as a library, that responds to internal inquiries, highlights business needs, and matches different departments to ensure the smooth running of the organization by managing and disseminating information and knowledge effectively.

(ii) Summarise FOUR services offered by an information centre.

- **Specialized research and reference services:** Information centers employ subject-matter experts who provide in-depth research assistance and answer technical inquiries that require more than a quick, factual answer. This can involve guiding users to the most relevant resources or providing expert consultation.
- **Information analysis and synthesis:** A core function is the evaluation, analysis, and interpretation of raw data and information from various sources. This