

KASNEB REVISION KIT (Q&A)

# ICT REVISION KIT

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# CPA CS

**INFORMATION COMMUNICATION  
TECHNOLOGY  
REVISION KIT  
TOPICALLY ARRANGED**

**Updated With  
August 2025  
Past Paper with Answers**

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# PART A

## PAST EXAMINATION QUESTIONS

## TOPIC 5

### THE INTERNET

#### QUESTION 1

##### August 2025 Question One B

Identify SIX components of an e-mail header.

(6 marks)

#### QUESTION 2

##### August 2025 Question One B

With reference to the use of algorithms by search engines:

- (i) Distinguish between “crawling” and “indexing”. (4 marks)
- (ii) Analyse FOUR factors considered by search engines when ranking web pages. (8 marks)

#### QUESTION 3

##### April 2025 Question Four B

Outline SIX roles of search engines.

(6 marks)

#### QUESTION 4

##### December 2024 Question One C

Outline SIX ways in which the internet can be used in banking and finance. (6 marks)

#### QUESTION 5

##### December 2023 Question One D

Examine FOUR challenges associated with cloud storage. (8 marks)

#### QUESTION 6

##### December 2022 Question Seven D

Simon has established an accounting firm in a busy town and employed seven assistants. However, the office space is not enough to accommodate all the staff and he has approached you for assistance.

#### Required:

- (i) Explain THREE modern ICT technologies that Simon could adopt to maximise employees’ productivity despite space constraints. (6 marks)
- (ii) Explain TWO possible disadvantages that Simon could face in adopting any of the technologies in (d) (i) above. (4 marks)

#### QUESTION 7

# **PART B**

## **SUGGESTED**

## **ANSWERS AND SOLUTIONS**

## TOPIC 5

### THE INTERNET

#### QUESTION 1

##### August 2025 Question One B

##### Components of an e-mail header.

- **From:** The sender's name and email address.
- **To:** The recipient's email address.
- **Subject:** A brief description of the email's content.
- **Date:** The timestamp indicating when the email was sent.
- **Return-Path:** The address to which bounce messages are sent if the email cannot be delivered.
- **Message-ID:** A unique identifier assigned to each email for tracking purposes.
- **Received:** A record of the mail servers that the email passed through on its journey to the recipient

#### QUESTION 2

##### August 2025 Question One B

##### (i) Distinction between “crawling” and “indexing”.

**Crawling:** This is the initial discovery process where search engine bots (also known as spiders or crawlers) systematically explore the internet to find new and updated web pages. They follow links from known pages, read the content, and identify new URLs to visit. The purpose of crawling is to gather information about the vast amount of content available online.

**Indexing:** This is the process that follows crawling. Once a page has been crawled, the search engine analyzes its content, categorizes it, and stores the relevant information in a massive database known as the search index. This indexed information includes keywords, content type, structure, and other signals that help the search engine understand the page's relevance to potential search queries. A page must be indexed to appear in search results.

##### (ii) Factors considered by search engines when ranking web pages.

- **Relevance of content:** Search engines prioritize content that directly addresses the user's search query. This involves analyzing keywords, semantic relationships, and the overall context of the page to determine how well it matches the user's intent.
- **Quality and authority of content:** High-quality, well-researched, and original content from authoritative sources is favored. Signals of quality

include depth of information, accuracy, and the absence of spammy tactics.

Authority is often measured by factors like backlinks from reputable websites.

- **User experience signals:** Search engines consider how users interact with a webpage. Factors like page loading speed, mobile-friendliness, ease of navigation, and low bounce rates contribute to a positive user experience, signaling a valuable resource.
- **Backlinks and external signals:** The number and quality of backlinks pointing to a page are significant ranking factors. Backlinks from authoritative and relevant websites act as "votes of confidence," indicating the page's credibility and importance.
- **Technical SEO and website structure:** The technical foundation of a website plays a role. This includes factors like a well-structured site architecture, proper use of HTML tags (e.g., title tags, meta descriptions, header tags), and a secure (HTTPS) connection, which contribute to crawlability and indexability.

### QUESTION 3

#### April 2025 Question Four B

##### Roles of search engines.

- **Information Retrieval and Discovery:** This is the most fundamental role. Search engines allow users to find relevant information on virtually any topic by simply entering keywords or phrases. They crawl, index, and organize billions of web pages, documents, images, videos, and other forms of content, making it discoverable and accessible to users from around the globe.
- **Navigation and Access to Websites:** Beyond just finding information, search engines help users directly navigate to specific websites or online services. If you know the name of a website but not its exact URL, typing the name into a search engine is often the quickest way to reach it. They serve as a directory that bypasses the need to remember precise web addresses.
- **Facilitating Research and Learning:** Search engines are powerful tools for academic, professional, and personal research. Students use them for assignments, professionals for market analysis, and individuals for learning new skills or exploring interests. They democratize access to knowledge by providing links to countless articles, studies, tutorials, and educational resources.
- **Connecting Consumers with Products and Services:** Search engines play a vital role in e-commerce and local business discovery. Users frequently search for products, services, reviews, and local businesses (e.g., "restaurants near me," "best laptop 2024"). Search engines deliver relevant results, including product listings, business profiles, maps, and reviews, directly connecting consumers with sellers and service providers.



- **Tracking Trends and Public Sentiment:** By analyzing search queries, search engines provide valuable insights into public interest, emerging trends, and collective sentiment. This data is leveraged by businesses for market research, by journalists to understand breaking news interests, and by researchers to study societal patterns and interests. While not directly visible to the end-user as a *feature*, it's an inherent outcome of their operation.
- **Providing Specialized Search Functionality:** Modern search engines offer specialized search capabilities beyond just web pages. They include dedicated search for images, videos, news, academic papers, maps, shopping, and more. This allows users to narrow down their search to specific types of content, making the retrieval process more efficient and targeted.
- **Generating Economic Activity (Advertising):** While primarily an information service, search engines are also major economic drivers through their advertising models (e.g., Google Ads). By displaying targeted advertisements alongside search results, they connect businesses with potential customers at the moment of intent, leading to billions in revenue and fostering a vast digital advertising ecosystem that supports many free online services.

### QUESTION 4

#### December 2024 Question One C

**Ways in which the internet can be used in banking and finance.**

- **Online Banking Services:**  
Traditional banks offer customers the ability to perform a wide range of transactions online, such as checking balances, transferring funds, paying bills, and applying for loans. Online banking platforms provide convenience by enabling customers to manage their accounts from anywhere at any time.
- **Mobile Banking Applications:**  
With the rise of smartphones, banks have developed mobile banking apps that allow users to perform financial transactions, access account information, and manage finances directly from their mobile devices. These apps often include features like mobile check deposit, budgeting tools, and real-time alerts.
- **E-Commerce Payment Solutions:**  
The internet facilitates various payment solutions for e-commerce transactions. Payment gateways and digital wallets, such as PayPal, Stripe, or Venmo, allow businesses to accept online payments seamlessly. These platforms enhance security and provide a range of payment methods, including credit cards and cryptocurrencies.
- **Peer-to-Peer Lending Platforms:**  
The internet has enabled the rise of peer-to-peer lending platforms where individuals can lend and borrow money directly from one another without traditional financial