# INFORMATION AND COMMUNICATION TECHNOLOGY  (ELECTIVE)

1. **AIMS**

   The aims of the syllabus are to:

   (1)    test candidates' appreciation of the concepts of Information and Communication Technology (ICT);
   (2)    test the capabilities of candidates in the application of ICT skills in education and business;
   (3)    verify candidates' potential for higher studies in Information and Communication Technology and related areas.

2. **SCHEME OF EXAMINATION**

   There will be three papers, Papers 1, 2 and 3 all of which must be taken.  Papers 1 and 2 will be a composite paper to be taken at a sitting.

   **PAPER 1:**  Will consist of fifty multiple-choice objective questions all of which must be answered within 1 hour for 25 marks.

   **PAPER 2:**  Will consist of five essay-type questions.  Candidates will be required to answer three questions within 1 hour for 30 marks.

   **PAPER 3:**  Will be a practical test consisting of three questions all of which must be answered within 2 hours, for 45 marks.

1. **DETAILED SYLLABUS**

| TOPIC | NOTES |
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| 1. DATA REPRESENTATION | 1.1 Data types e.g integers, real numbers, strings etc<br>1.2 Number bases with special reference to binary, decimal and hexadecimal.<br>1.3 Units of data storage. |
| 2. INTRODUCTION TO INFORMATION SYSTEMS | 2.1 Meaning of information system<br>2.2 Knowledge of the different types of information systems.<br>2.3 Attributes of good information.<br>2.4 Internal and external information eg. intranet, extranet, memos, intercom, talking drum, mobile phone etc.<br>2.5 The role of information in society. |
| 3. INTRODUCTION TO DIGITAL | 3.1 The Internet<br>3.2 Computer crime |

| TECHNOLOGY CULTURE | 3.3 | The role and impact of Information Technology on everyday life e.g e-business, e-health, e-mail, e-learning, Computer Based Training, Computer Assisted Manufacturing, Computer Aided Design, etc. |
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| | 1.4 | Knowledge of media types e.g digital videos and |
| | 1.5 | digital sounds, voice over internet protocol (VOIP),voice recognition system, etc. |
| 4. WORD PROCESSING | 4.1 | Creating, editing and formatting documents. |
| | 4.2 | Business documents eg. memos, reports etc. |
| | 4.3 | Mail merge. |
| | 4.4 | Printing of documents. |
| 5. DESKTOP PUBLISHING | 5.1 | Creating, editing and formatting documents. |
| | 5.2 | Printing publications. |
| 6. SPREADSHEET | 6.1 | Creating, editing and formatting documents. |
| | 6.2 | Sorting and querying for information. |
| | 6.3 | Creating graphs and charts to represent data in worksheets. |
| | 6.4 | Working with functions |
| | 6.5 | Data security: use of passwords. |
| 7. HARDWARE | 7.1 | External components and their functions. |
| | 7.2 | Internal components and their functions. |
| | 7.3 | Computer Diagnostics and Maintenance. |
| 8. SOFTWARE | 8.1 | System software e.g operating systems and their functions. |
| | 8.2 | Utility programmes and their uses. |
| | 8.3 | Types of application programs. |
| | 8.4 | Software licensing considerations. |
| | 8.5 | Installation and upgrading of computer software. |
| | 8.6 | Software terminologies and concepts: - machine language; - high-level versus low level; - use of fourth generation language; - use of language translators; - source code; - Error messages; - Software portability; - Compilers; - Interpreters; - Assemblers, etc. |

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| 9. | NETWORKING | 9.1 | Network concept. |
| | | 9.2 | Types of networks. |
| | | 9.3 | Network Topology |
| | | 9.4 | Network Architecture. |
| | | 9.5 | Network configuration. |
| | | 9.6 | Communication of data on networks. |
| | | 9.7 | Data security on networks. |
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| 10. | INTRODUCTION TO PROGRAMMING | 10.1 | Flow charts |
| | | 10.2 | Algorithms and data structures |
| | | 10.3 | Program development life cycle. |
| | | 10.4 | Programming languages. |
| | | 10.5 | Web design using HyperText Mark-up Language (HTML). |
| | | 10.6 | Practical knowledge of BASIC and HTML programming languages. Questions will however be limited to QBASIC. |
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| 11. | DATA BASE MANAGEMENT SYSTEM | 11.1 | Designing and creating data bases. |
| | | 11.2 | Working with queries. |
| | | 11.3 | Working with forms. |
| | | 11.4 | Working with reports. |
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| 12. | APPLICATION OF ICT TOOLS IN EDUCATION | 12.1 | Types of tools. |
| | | 12.2 | Learning with ICT tools |
| | | 12.3 | Advantages and disadvantages of using ICT tools in learning. |