



MARCH 2017

INFORMATION PROCESSING

Instructions to candidates:

- a) Time allowed: Three hours (plus an extra ten minutes' reading time at the start – do not write anything during this time)
 - b) Answer any FIVE questions
 - c) All questions carry equal marks. Marks for each question are shown in []
 - d) Mark allocations should determine the length and depth of your answer and the time you spend on it. A part question carrying 4 marks normally requires 4 different and valid points
 - e) In definitions, **do not use** the word being defined in your definition, e.g. avoid the word SERIAL when defining SERIAL FILE
 - f) Ensure that you pay particular attention to words underlined, in CAPITALS or in **bold**. FEW OR NO MARKS will be awarded to any question where these are ignored
 - g) No computer equipment, books or notes may be used in this examination
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1.
 - a) With the aid of a diagram, explain how a plotter is able to print diagrams in different colours and with associated text of different fonts, font sizes and at different inclinations. [8]
 - b) Modern printers can print diagrams with included text. Describe applications from the world of commerce and industry where diagrams are produced and where:
 - a plotter would be MORE appropriate [4]
 - a printer would be MORE appropriate [4]Your answers should explain why EACH is more appropriate.
 - c) Identify:
 - i TWO types of printers which are able to print good quality diagrams and
 - ii TWO printers which either cannot print diagrams or the quality is poor [4]
 2.
 - a) Distinguish clearly between application software and system software, giving a typical example for EACH. [4]
 - b) For EACH of the programs listed below, state whether that program is:
 - a general purpose package
 - a special purpose application OR
 - system software
 - i Data sort
 - ii Invoice production
 - iii Payroll
 - iv Spreadsheet
 - v Virus checker
 - vi Word processor [6]
 - c) Describe, in detail, FIVE significantly different facilities that an operating system provides. [10]
 3.
 - a) Distinguish clearly between security and privacy. [4]
 - b) Describe the measures that **MUST** be taken to ensure that PRIVACY is guaranteed in a large organisation with regard to computerised data. [10]
 - c) Identify SIX significantly different measures that could be taken to ensure that data is SECURE. [6]
 4. Choose any FOUR of the following methods of data capture. For EACH:
 - describe how the data input device works using appropriate diagrams
 - identify precisely a particular application that is most suited to its use
 - a) Barcode reading
 - b) MICR
 - c) OCR
 - d) OMR
 - e) Voice recognition [5 each]

continued overleaf

5. a) A user wishes to sort a very large data file of employee records (key field = employee number) so that the file is sorted by employee name – surname must be the prime key and first name the secondary key. State the information the sort program will need to achieve this. [5]
- b) In business, a computer user may use two types of application software – general-purpose and special-purpose.
- i Distinguish between the two.
- ii An employee uses a special-purpose package. Explain how his subsequent actions will be different from using a general-purpose package. [5]
- c) Name a particular operating system. Describe FIVE major features the operating system provides. Your choices must be significantly different from each other. [10]
6. a) Describe the differences between high-level and low-level languages, illustrating your answer with brief examples of coding.
Discuss the differences during the processes of:
- writing a program
 - correcting program errors
 - translating a program
 - run-time
- [10]
- b) Define the term **UTILITY program**. Give TWO examples of utility programs explaining what EACH achieves. [5]
- c) Briefly describe FIVE significantly different features of an operating system. Your examples can be from different types of operating systems, provided you indicate which type. [5]
7. Application packages are of major importance to small computer system users who do not have the necessary resources or expertise to produce their own software. What are the advantages and disadvantages of these packages and what are the practical issues that need to be considered? [20]
8. Read the whole question before starting this one. Select a particular company or organisation that you have studied.
- a) State the name of the company and its main functions. [2]
- b) Describe ALL the uses of computing in this company. Indicate the type of processing in EACH case. [5]
- c) Describe the specific outputs that computers produce in the company and explain who uses these and how they are used. [5]
- d) List the hardware used in the main applications of the company including the number and types of computers used. [5]
- e) Describe the input data needed to produce the results. [3]