



ICM

MARCH 2017

COMPUTER APPRECIATION & APPLICATIONS

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 ALL sections of Question 1 and any THREE questions chosen from 2 to 6
 - c) Question 1 carries 40 marks and each other question carries 20 marks. Marks for sections of questions are shown in []
 - d) The number of marks allocated for each section should determine the length of your answer and the amount of time you spend on it. Generally ONE point gains ONE mark and is rarely achieved by one-word answers
 - e) Note carefully that where some questions require details of how hardware or software achieves its task, descriptions of user actions will NOT earn marks
 - f) No computer equipment, books or notes may be used in this examination
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1.
 - a) Distinguish clearly between RAM and ROM. [4]
 - b) Describe the functions of the CONTROL UNIT and ALU within the CPU. [4]
 - c) Explain the role of the modem and include a labelled diagram to illustrate its use. [4]
 - d) Dot-matrix is a type of printer. Select TWO OTHER types of printer and for EACH name a particular application for which it would be appropriate, stating WHY in EACH case. [4]
 - e) Explain how, using the OPERATING SYSTEM only (not a word processor for instance), to copy all files with extension name (.BAT) from a directory/folder named BATCH on the hard disk to a formatted diskette, retaining the same file names. [4]
 - f)
 - i Spreadsheets use ABSOLUTE and RELATIVE addresses. Distinguish clearly between them. [4]
 - ii Explain how an absolute address can be incorporated into a formula and then copied to other cells. [4]
 - g) Explain how to use a word processing program to set up a table into a document. [4]
 - h) State FOUR tasks that a systems analyst would normally perform during a typical year. [4]
 - i) Give FOUR reasons why data is coded in memory. Ignore security aspects. [4]
 - j) An organisation has installed a computer system for work which was formerly handled manually. All the staff have been trained on the new system. State FOUR benefits they might find as a result of this change. [4]
 2.
 - a) A small company had a room of five stand-alone computers for processing customer orders. These computers are now being linked into a LAN. Discuss the advantages and disadvantages of this conversion. [6]
 - b) Describe a BUSINESS application where a company would use a WAN. Ignore the use of email. Your answer should include details of what is input, what is held on file and who the users are. [10]
 - c) Name and describe, with a labelled diagram, ONE configuration (network topology) of LAN. [4]
 3. In a college, the grades awarded to students for assignments are added weekly to the marks FILE in an ON-LINE process because the HIT-RATE is low. The updating PROGRAM uses RANDOM-ACCESS.
 - a)
 - i Define the FIVE words/phrases printed in capitals, with particular reference to THIS application. [10]
 - ii List SIX significantly different fields you would expect to find on the student file, giving a reason FOR EACH why that field is present. [6]
 - b) A student with ID number 13578 scores 71% in the MATHEMATICS examination, one of many subjects he is studying. The data values 13578, MAT, 71 are keyed into the student records program (MAT is the 3-character code for MATHEMATICS). Describe FOUR different types of validation that could be performed on THIS particular data. [4]

continued overleaf

4. a) Distinguish between HIGH-LEVEL and LOW-LEVEL programming languages. [4]
b) State the names of FOUR significantly different high-level languages. For EACH language, suggest a typical application area that is likely to be written in that language. [8]
c) Within a retail company, a programmer has been given the task of writing a program which will analyse existing records to predict sales trends. The systems analyst gives to the programmer a complete specification of the required program. Describe the subsequent stages of developing this program in their CORRECT order. Be sure to consider the scale of this problem in a commercial environment. [8]
5. Explain in detail the operation of a typical Database Management System (DBMS), including maintaining the data, the function of providing security, interface with users, etc. [20]
6. a) Some options a user can choose in a word processing program apply to the WHOLE document. Name and describe THREE of these options. [6]
b) Fonts are defined as PROPORTIONAL or NON-PROPORTIONAL. Explain how the word processing program (not the user) achieves left AND right aligned margins in a NON-PROPORTIONAL font. [3]
c) i Explain how textual characters are held in a document file stored on disk.
ii Explain how the file will differ if the document also contains some words underlined. [4]
d) Explain fully what is meant by **mail merge** and how, in GENERAL TERMS, it is achieved. (Do not provide a long list of keys/icons to be selected.) Describe a realistic use of mail merge in BUSINESS. [7]