



ICM

DECEMBER 2016

MANAGING COMPUTER SYSTEMS

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 sections of questions are shown in []
 - d) Mark allocation should determine the length of your answer and the time you spend on it. Generally, one mark is awarded for each valid point
 - e) Read all sections of any question before attempting any part of it
 - 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) In questions requiring reference to particular institutions or applications, your answer must reflect this. Answers without these references will score few marks
 - h) No computer equipment, books or notes may be used in this examination
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1. Name a particular **type** of business. Discuss ways in which this type of business can use computers to budget more accurately and forecast for the future. Explain how this ability might affect the services that the business offers. [20]

 2.
 - a) What is the purpose of the Data Protection Act? [3]
 - b) Name and select a particular DPA, identifying the country where it applies.
 - i Data Protection Acts require organisations to meet specific standards. Explain THREE circumstances when this applies. [5]
 - ii Explain what protection the Act offers. [5]
 - c) Discuss how effective the Act is in its protection. [4]
 - d) Sometimes a data holder can be exempt from the Act. Give THREE examples of when this applies. [3]

 3. Information technology is changing rapidly.
 - a) Outline some of the most significant changes in the last **ten years**.
 - b) Describe in detail how these changes affect people:
 - i in the home
 - ii in relation to their work
 - iii outside of work and home [20]

continued overleaf

4. Below is the outline of a project with activities labelled with the codes A-M. The duration of each activity is estimated in weeks. Codes of those activities which must be completed IMMEDIATELY before it (**predecessors**) are displayed in the 3rd column of the table.

Activity Code	Duration (Weeks)	Predecessors
A	5	C and G
B	3	K and M
C	2	H, I and L
D	4	E
E	8	F
F	2	none
G	4	J
H	3	none
I	3	J
J	5	none
K	6	H, I and L
L	4	F
M	2	E

- a) Draw a network diagram for this project with no overlapping activity lines. [10]
- b) Identify the critical path and the shortest time to complete the project based on these estimated figures. [3]
- c) Draw a Gantt chart for the activities at their earliest start positions. [7]
5. Training is an important part of development in the workplace. With specific emphasis on IT:
- a) State TWO different ways that this training might take place. [2]
- b) Discuss the advantages and disadvantages of EACH type of training. Your answer should consider typical changes that happen in an organisation such as updates in technology and new staff being recruited. [18]
6. System security can be categorised as **physical security** or **logical security**.
- a) Explain what these terms mean. [4]
- b) Give FOUR examples of **physical** security methods. For EACH of the methods explain:
- i how it is implemented
 - ii who is involved in its implementation
- [8]
- c) Give FOUR examples of **logical** security methods. For EACH of the methods explain:
- i how it is implemented
 - ii who is involved in its implementation
- [8]
- 7.
- a) Describe the main differences between a matrix organisational structure and a hierarchical organisation structure. [6]
- b) In the context of a **hierarchical structure**, explain the term **delaying** and state why this might be done. [5]
- c) Give ONE advantage of a hierarchical organisational structure. [2]
- d) Explain what a **tall hierarchical structure** is and state ONE disadvantage. [4]
- e) Explain what is meant by a **centralised organisation**. [3]
8. A local firm of legal advisors employs three consultants who each specialise in certain aspects of the law. Fees are paid by a client who makes an appointment to see a consultant when they need advice or support about legal issues. The firm also employs a senior administrator and a part-time clerical assistant.
- Discuss in detail the computer system required by such a company (hardware and software), who would use it and how. Would they use custom software and/or off-the-shelf applications? Also include in your discussion networking and security considerations. [20]