



# ICM

SEPTEMBER 2015

SYSTEMS ANALYSIS

**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 every valid point you make
  - e) Read each question through fully before starting 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) No computer equipment, books or notes may be used in this examination
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1.
    - a) Select TWO different job titles of people who work totally in a LARGE computer installation. For EACH, describe the tasks that person would perform in a typical month. [8 each]
    - b) In smaller installations, job descriptions are often wider. Briefly describe jobs which might be combined in order to adapt to the smaller requirements. [4]
  2. Outline the role that the users and user department play in developing a computer solution for a new application. Assume that the users have **very few** programming skills. [20]
  3.
    - a) Explain what the term **SSADM** represents. [2]
    - b) SSADM views a system from THREE main points of view. Name these, and for EACH state briefly what it shows. [6]
    - c) SSADM also views a system as a series of modules or stages. Name any FOUR of these and briefly describe the function of EACH. [8]
    - d) Explain what is meant by **case tools**. Name TWO of these. Briefly explain how these tools improve the development of a system. [4]
  4.
    - a) Distinguish clearly between SYSTEM and PROGRAM flowcharts. For EACH, draw a small section of flowchart using standard shapes and labelling them to show their purpose. Note that your examples do not have to represent complete processes. [6]
    - b) Once the design of a new system has been formalised, the systems analyst will issue each member of the programming team with a program specification for the work that programmer is expected to produce. List the contents of this specification and explain how the programmer will use EACH section. [12]
    - c) Name TWO items of documentation that are produced during the development of a new computer system which the systems analyst does NOT write. [2]
  5. User involvement is important for the success of computer systems. The user can contribute to several stages of the system life cycle.
    - a) List the stages in a typical computer project. [6]
    - b) For THREE of these stages, describe how the user can contribute and how the project will benefit from this involvement. [9]
    - c) Suggest what problems might arise in a computer project:
      - i with insufficient user participation
      - ii with too much user involvement [5]

*continued overleaf*

6. a) Explain what is meant by the term **general purpose application package**. Give THREE examples of such packages. [4]  
 b) State the name of one SPECIAL purpose application package and describe its main functions. [5]  
 c) Discuss the advantages and disadvantages of a company buying a ready-written package compared with commissioning a software house to write one for that company. [6]  
 d) There could be several packages on the market for a given application. State FIVE factors that the company would need to take into account to decide which one to pick. [5]
7. A medical practice with three separate clinics uses an intranet to allow the doctors, nurses and administrative staff to access patient records and bookings. Possible problem areas for security of data are:
- Media failure or accidental loss of data
  - Virus attack
  - Hardware failure with the computer out of action for some time
  - Illegal access of the database by unauthorised people
  - Accidental destruction by staff
  - Deliberate sabotage of data by disenchanted staff
- The data manager is fully aware of the security that should be in place. For instance, backup copies should be taken of data files but this has not always solved file corruption problems due to lack of controls in the system. Discuss, IN DETAIL, REAL ways of tackling the above problem areas. [20]
8. A real-estate agent uses a computer system to keep records of properties to rent and to sell. When a client wishes to register their property they complete a pre-printed paper form with relevant details.
- a) With particular reference to a **real-estate agent**, state FIVE different factors that should be considered in the design of this form and for EACH give an example of why this is important. [10]  
 b) Design a form for the real-estate agent staff to enter property details into the computer. The form should be drawn full size on one side of a sheet of paper. Underline the fields that would be used for searching for a property for a buyer or someone looking to rent. [8]  
 c) State TWO fields that would be automatically generated on the form. [2]