

ASSOCIATION OF COMPUTER PROFESSIONALS

DIPLOMA EXAMINATION

SPECIMEN PAPER

SYSTEMS ANALYSIS AND DESIGN

(TWO AND A HALF HOURS ALLOWED)

You have ten minutes to read through this paper before the start of the examination.

Answer a total of FIVE questions.

Each question carries 20 marks.

1. User involvement is important for the success of computer projects. The user can contribute to several stages of the project cycle.
 - a. List the stages in a typical computer project. [6 Marks]
 - b. For THREE of these stages, describe how the user can contribute and how the computer project will benefit from this involvement. [9 Marks]
 - c. Suggest what problems might arise in a project:
 - (1) with insufficient user participation.
 - (2) with excessive user involvement. [5 Marks]

2. After a computer project has been proposed, the systems analyst will usually need to justify it in terms of cost and other benefits.
 - a. Suggest THREE ways in which projects are often initiated. [6 Marks]
 - b. Summarise, under suitable headings, the main costs in the life of a computer project. [8 Marks]
 - c. Describe briefly THREE other (non-financial) benefits which often arise from introducing a new computer system. [6 Marks]

3. The design of a computer system starts from a statement of requirements. Often, the systems analyst will begin with an outline design and then move to the time-consuming activities of detailed design. The analyst may need to re-work parts of the design and may need to include special user requirements.
 - a. Describe briefly FOUR main components of an outline design. [6 Marks]
 - b. Describe the contents of a detailed design specification. [10 Marks]
 - c. Give TWO examples of special user requirements which may need to be included in the detailed design. [4 Marks]

4. In the design of computer output, the systems analyst and the end-user must work carefully together in order to ensure the user's needs are satisfied within the limitations of the equipment.
- a. Name FOUR main methods of producing output, and discuss any choices of media available with each type of equipment. [8 Marks]
 - b. Discuss SIX factors which need to be considered during output design. [12 Marks]
5. Early computer systems required the user or operator to type commands and data at the keyboard. Modern systems, including the Internet, have increasingly moved to graphical user interfaces (GUIs).
- a. Describe briefly FOUR features of a GUI. [4 Marks]
 - b. Describe THREE advantages of using GUIs. [6 Marks]
 - c. Suggest TWO possible disadvantages of GUIs. [4 Marks]
 - d. Describe briefly TWO examples of GUI methods which are used on the world wide web (WWW). [6 Marks]
6. Extensive documentation is needed throughout the life cycle of a computer system. The analysis and design stages generate part of the overall documentation.
- a. Name the main items of documentation, state their purpose, and describe briefly their contents under the following headings:
 - (1) Project management.
 - (2) Systems analysis stage.
 - (3) Systems design stage.
 - (4) Development (implementation).
 - (5) User documentation. [16 Marks]
 - b. Name ONE other component of the system documentation, summarise its contents, and indicate when it is produced in the project. [4 Marks]
7. File conversion is an important part of the implementation process.
- a. Explain the purpose of file conversion. [4 Marks]
 - b. Discuss FOUR problems in the conversion process. [8 Marks]
 - c. Describe the steps in a typical file conversion. [6 Marks]
 - d. On completion of file conversion, what final checks should be made? [2 Marks]
8. Structured Systems Analysis and Design Methodology (SSADM) has been introduced to improve computer system design. The general aims of SSADM are similar to those of conventional methodologies, although many techniques used in SSADM were not used in conventional systems analysis and design.
- a. Describe briefly FIVE broad aims of SSADM with regard to the completed computer system. [10 Marks]
 - b. Name, and explain briefly, FIVE techniques which are used in SSADM, but not in conventional methodologies. [10 Marks]