

Question 1 (Compulsory)

- (a) It has been said that user involvement is important for all system development. List *four* reasons why this involvement is crucial to the success of the development of information systems. [4]
- (b) List *four* ways in which prototyping is different from other development methods. [4]
- (c) List *four* situations in which the use of questionnaires may be appropriate. [4]
- (d) Define, in the context of database management systems, the terms *schema* and *subschema*. [4]
- (e)
 - (i) What is a *decision tree*? [2]
 - (ii) What is a *decision table*? [2]
 - (iii) In what circumstances is it better to use a decision tree, rather than a decision table? [1]
 - (iv) In what circumstances is it better to use a decision table, rather than a decision tree? [1]
- (f) List any *three* benefits in using CASE tools in developing an information system. [3]
- (g) Define the terms *tangible cost* and *tangible benefit*. Provide an example of each. [4]
- (h) Define the term *organizational boundary*. [1]

Please turn over

Question 2

- (a) What is the relationship between *information* and *data*? [1]
- (b) Describe, using examples, the following types of business information system.
 - (i) Enterprise Computing Systems. [2]
 - (ii) Business Support Systems. [2]
 - (iii) User Productivity Systems. [2]
- (c) Describe *four* ways in which users may be involved in the different stages of the system development life cycle. [8]

Please turn over

Question 3

- (a) What is a *systems request*? With relation to systems requests, what is a *systems review committee*? [2]
- (b) Define the following terms.
 - (i) Operational feasibility. [1]
 - (ii) Technical feasibility. [1]
 - (iii) Economic feasibility. [1]
- (c) What should be the first *two* steps in any preliminary investigation? [2]
- (d) List *three* reasons why the systems analyst would want to select representative people to interview as part of the preliminary investigation. [3]
- (e) The final phase of the preliminary investigation is the presentation of a report to management. The report will start with an introduction and conclude with appendices. Describe the typical contents *five* other sections that may appear in such a report. [5]

Please turn over

Question 4

- (a) What is *human-computer interaction*? How is user interface design related to human-computer interaction? [2]
- (b) Good user interface design is based on a combination of ergonomics, aesthetics, and interface technology. Define the terms *ergonomics* and *aesthetics*. [2]
- (c) How does *data capture* differ from *data entry*? [2]
- (d) The reduction of data volume is one objective of input design. List *four* guidelines that one may use to try and reduce data volume. [4]
- (e) Define the terms *detail report* and *exception report*. [2]
- (f) Describe *three* ways in which one might ensure *output security*. [3]

Please turn over

Question 5

- (a) Describe *three* potential problems that exist with file processing systems, when compared to database management systems. [6]
- (b) How does the representation of sets of related records differ between file-oriented systems and database environments? [2]
- (c) How does a *logical record* differ from a *physical record*? [2]
- (d) You have been asked by your manager to provide details of the file layouts, i.e., what each record would contain for both a payroll master file and a stock file.

The payroll file is for all employees in the company and is updated on a monthly basis. However, the stock file is updated as orders are placed so as to be as up to date as possible.

- (i) What file organization would be most appropriate for this application, and why? [2]
- (ii) What methods you would recommend for making security back up copies of the file. Would the methods differ if the file was on tape, as opposed to disk? [3]

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