KASNEB

CICT PART II SECTION 3

SYSTEMS ANALYSIS AND DESIGN

WEDNESDAY: 25 November 2015. **Time Allowed: 3 hours.**

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

QUESTION ONE

(a) Explain two approaches to prototyping in systems development. (2 marks)

(b) (i) Formulate a checklist that could be used to evaluate a successful information systems design. (4 marks)

(ii) Suggest four questions that you would ask an information systems user when redesigning the user's interface for data entry. (4 marks)

(c) Outline four reasons for carrying out a detailed investigation of an existing system before designing a new one. (4 marks)

(d) Assess the impact of the following types of feasibility studies on information systems development:

(i) Cultural/political feasibility. (3 marks)

(ii) Legal feasibility. (3 marks)

(Total: 20 marks)

QUESTION TWO

(a) The following is a description of how XYZ Ltd. determines charges for goods bought from its stores:

- Customers are divided into two categories; those whose Sale Region Code (SRC) is 50 or above and those whose SRC is less than 50.
- If the SRC is less than 50 and the invoice amount is less than Sh.100,000, the delivery charge to be added to the invoice total is Sh.5,000, but if the invoice value is Sh.100,000 or more, the delivery charge is Sh.2,500.
- If the SRC is equal to or greater than 50 and the invoice total is less than Sh.100,000, the delivery charge is Sh.6,000.
- For invoices totalling Sh.100,000 or more, the delivery charge is Sh.3,000.

Required:
Draw a flowchart diagram representing the above scenario. (5 marks)

(b) Use the case study below to answer the question that follows:

PK Dave Ltd. receives enquiries from existing or potential clients in the advisory service department of its regional offices. A quotation is produced in the advisory services department using information on previously undertaken projects and current cost. The quotation is sent to the regional office which forwards it to the client and awaits acceptance or rejection. A copy of the quotation is retained in a file of possible projects in the advisory services department office. If the quotation is accepted, the acceptance is forwarded to the advisory services department from the regional office and a project plan is produced.

Development of a project plan involves examining similar previous projects in the light of the quotation and determining the skills and availability of consultants capable of undertaking the project. Consultants are allocated to the project and one of them is designated the project leader. The project plan consists of a set of activities to be undertaken with each activity being allocated to a specific consultant. This is held in the current project file. The project plan containing the activities is sent to the computer department where it is recorded in a computer file (the current project activities file) and a list of the activities allocated to each consultant is sent to them. The project then commences.

Weekly timesheets are produced by the consultants working on the project together with expense sheets, detailing travel and accommodation costs. These are authorised by the advisory services department and are then sent to the computer department for recording on the current project activities file.

This is a two-part process. The data are entered on-line and stored on a temporary file as they are received, but the current project activities file is only updated once a week. The authorised expenses are also sent to the accounts department for payment.

Activity reports are produced from the computer system at monthly intervals. From these, the advisory services department produces a monthly report which is sent to the client and also filed in the current project file.

The department raises proforma invoices based on the activity reports, which are sent to the accounts department (which is outside the area of study). Several proforma invoices may be produced for one project, depending on the agreement reached with the client.

Required:
Prepare a data flow diagram (DFD) to represent the above scenario. (15 marks)
(Total: 20 marks)

QUESTION THREE

(a) Summarise four ways in which information systems users could inhibit requirements gathering. (4 marks)

(b) (i) Explain key strongholds of using structured design methodology over rapid application development (RAD). (2 marks)

(ii) Describe the driving purpose of using rapid application development (RAD) approach in systems development. (2 marks)

(c) ABC Ltd. is in the process of assessing the viability of implementing an enterprise resource planning (ERP) system.

As an information technology expert in systems analysis, you have been requested to make a presentation to the board on the above venture.

Required:
Discuss the considerations that should be made before the board approves the implementation of the ERP system in the organisation. (6 marks)

(d) Giving a relevant example, assess how you might apply systems thinking in systems development. (6 marks)
(Total: 20 marks)

QUESTION FOUR

(a) Analyse four aspects that a systems analyst should consider for an organisation aspiring to use Web2.0 technologies. (4 marks)

(b) Assess two reasons why a systems analyst might participate in open source software community. (4 marks)

(c) The Mombasa Coach company offers day trips throughout the year to the residents of Mombasa. The company offers day trips to the various theme parks and beach resorts within a 200 kilometre radius of Mombasa. As there are limited number of good destinations within this radius, trips to all destinations are made available on several dates in the trip calendar. The trip calendar is regularly posted to all the residents in Mombasa area. Residents often make a booking for several trips at the same time.

Required:
(i) Identify the entities in the above scenario. (4 marks)

(ii) Draw an entity relationship diagram (ERD) for the above scenario. (8 marks)
(Total: 20 marks)

QUESTION FIVE

(a) Discuss the role of a systems analyst in a mobile application development company. (4 marks)

(b) You have been appointed as a systems analyst at ABC University which has nine campuses in your country.

Required:
Analyse the guidelines that information technology officers should observe during the following phases of development and/or implementing new software and systems at the ABC University:

(i) System requirement analysis. (4 marks)

(ii) System testing and acceptance. (6 marks)

(c) Describe six attributes of a good systems documentation. (6 marks)
(Total: 20 marks)

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