Marks

Question 25 — Transaction Processing Systems (20 marks)
Use a SEPARATE writing booklet.

(a)   (i)   Define batch processing, and briefly describe a situation where batch processing is appropriate.   **3**

    (ii)   Distinguish between data accuracy and data integrity, using an example that illustrates the difference.   **3**

(b)   A video store is considering installing a 'self-checkout' system where customers can borrow videos by scanning their membership cards and videos and pay by EFTPOS.

A 'self-checkout' transaction has three steps:

- membership validation;
- borrowing limit check;
- payment processing.

For membership validation the barcode on the membership card is used to access the member database to find a match. The customer proceeds to the scanning of videos if the membership is valid, otherwise a message is displayed.

Using the video barcode data and details from the member database, the system checks that no more than six videos are borrowed. A message is displayed if the limit is exceeded.

Payment processing involves the calculation of borrowing charges, the scanning of the customer's EFTPOS card, the entry of a personal identification number and the electronic communication of these details to the financial institution. Video charges are obtained from the video database via the video barcodes. Transaction details are written to the transaction file for each video borrowed.

    (i)   Draw a dataflow diagram with the three processes that represents this proposed 'self-checkout' system, ensuring that you show external entities and data stores.   **5**

    (ii)   Discuss appropriate backup procedures for the proposed system.   **3**

Marks

Question 25 (continued)

(c)   Web-Ticket allows customers to purchase tickets for major theatre and sporting   **6**
      events over the internet.

      When customers visit the company's website they can choose an event, view the
      seating arrangements, see what seats are available, choose their seats and
      purchase tickets.

      For the business to run successfully it is essential that the seating details supplied
      to any customers at any time in any location, are correct and up-to-date. There
      is no margin for error or system failure.

      Describe and analyse the ticketing system in terms of the information processes
      of:

      • collecting;
      • storage and retrieval;
      • processing;

      with particular emphasis on the process of storage and retrieval.

End of Question 25