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NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCES
DEPARTMENT OF COMPUTER SCIENCE

APRIL MAY EXAMINATIONS

SUBJECT: BUSINESS DATA PROCESSING
CODE: SCS1205

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INSTRUCTIONS TO CANDIDATES

Answer all questions in A and any 2 from B.

Time: 3 Hours

SECTION A

1. (a) The basic charge for computer time is based on the number of hours of time used during the month.

The schedule is as follows:

HOURS USED	BASIC CHARGE
0 TO 5	\$100
>5 TO 15	\$100 PLUS \$25 PER HOUR FOR ALL TIME OVER 5 HOURS.
>15 AND UP	\$225 PLUS \$15 PER HOUR FOR ALL TIME OVER 15 HOURS

In addition a surcharge is added to the basic charge based on priority used. The priority is indicated by a code. The surcharge is as follows:

PRIORITY CODE	SURCHARGE
0	0
1	\$50
2	\$150

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Draw a flow chart to input the number of hours used and priority code, to calculate the total charge and print it. [10]

(b) Draw a Warnier- Orr diagram for the problem above. [10]

Q2. Consider a customer file sorted by credit limit code within region code. The region code may have a value of A, B, or C only. Draw a logical data structure in Michael Jackson Systems Development methodology for:

(a) A program to count the number of records. [4]

(b) A program to count the number of records in region A. [4]

(c) A program to count the records in region A. [4]

(d) A program to sum the amount due of all records with credit limit code = 1. [4]

(e) A program to print the names of customers who have a credit limit of 4 who are not in region A. [4]

Q3. A supermarket has a sales department which supplies information on daily sales, a stock control department which produces stock reports, and an accounts department which provides cost details.

The supermarket management system interacts with these departments to achieve the following objectives:

- Collection of data, that is, the production of input documents, sorting of the documents and encoding data into the computer.
- The data is validated to produce valid payment data, valid client data, production of error reports and the correction and revalidation of data.
- The accounts are updated using valid data
- Reports are produced

Draw the following diagrams for this system

(1) a context diagram [5]

(2) a process chart [5]

(3) a data flow diagram [10]

SECTION B

- Q4. The Zimbabwean Government is thinking of establishing a computer centre in the DRC to co-ordinate the activities of its army. What factors would contribute to threats on systems security and what measures can be taken to ensure systems security? [20]
- Q5. An information systems manager has been resisting the introduction of a database and its related DBMS in his organisation. Advise the manager on the purpose and advantages of having a database. [20]
- Q7. Qhubeka consultancy is a newly established firm. Mr P. Moyo, the chief Consultant is in a dilemma on whether to adopt the prototyping method or the structured systems analysis and design cycle in the design of their systems. Write a memo to him giving your arguments for and against the adoption of each of these strategies. [20]

END OF QUESTION PAPER