

**Tribhuvan University**  
**Institute of Science and Technology**  
**2073**

Bachelor Level / Fifth Semester / Science

**Computer Science and Information Technology(CSC315)**

((TU CSIT) System Analysis and Design)

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Full marks: 60

Pass marks: 24

Time: 3 hours

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**Group A**

**Long Answer Questions:**

**Attempt Any Two:**

(2x10=20)

1. What is system analysis and design? Why do we need it? Discuss prototyping approach along with its merits and demerits.
2. "Students participate in exams for five courses each having 100 marks. To pass the examination students should obtain 50% marks in each subject. If the students obtain 80% or more marks of the total marks, he/she will get distinction, if 70% or more, first division, if 60% or more, second division, otherwise third division". Draw ER diagram and data flow diagram for a result processing system described in the above narrative.
3. What are the benefits of using object-oriented development over the structured development? Discuss use-case diagram, class diagram and object diagram with suitable example.

**Group B**

**Short Answer Questions:**

**Attempt Any Eight:**

(8x5=40)

4. Discuss transaction processing system with suitable example. What is online transaction processing system.
5. What different skills do you need to be a good systems analyst?
6. What is decision table? Differentiate it with decision tree.
7. A system costs Rs. 2,00,000 to install. The profit per year is Rs. 50,000. Assuming an interest rate is 6%, what is the payback period of the investment?
8. Create a decision table to represent the logic of payroll system described in the following narrative. There are two types of employees: salarized and hourly. All salarized employees get basic salary. Hourly wage is calculated for hourly worker. For hourly worker, if hours worked is less than 30 absent report is also produced and if it is greater than 30 overtime is also calculated.
9. Discuss the use of interviewing technique for information gathering.
10. Discuss the process of designing forms and reports in detail.
11. What are the benefits of using normalization? Discuss 1NF and 2NF with example.
12. Discuss different testing techniques during system development.
13. Write short notes on:
  - a) Data dictionary
  - b) Object diagram