

Ex/UG/Math/Comp.Sc./22/Unit-II/2019(Old)

B. SC. MATHEMATICS EXAMINATION, 2019

(2nd Year, 2nd Semester, Old Syllabus)

MATHEMATICS (SUBSIDIARY)

INTRODUCTION TO SYSTEM ANALYSIS & DESIGN

UNIT - II

Time : Two hours

Full Marks : 50

The figures in the margin indicate full marks.

Answer question no. *1* and *any three* from the rest.

1. Draw the context diagram of the project ordering and goods received systems. 2
2. a) Explain the functioning of a system with examples. Why is systems analysis necessary? Who are the main personal involved in systems analysis? What qualities should a systems analyst have? How would you acquire these qualities?
b) Explain an interactive marketing system. Describe the activities of the system with diagram. 10+6
3. a) Why is a life cycle needed for the development of information system? What does the life cycle look like? Briefly describe the phases used in the linear cycle with a diagram.

[Turn over

- b) Why is it difficult to build decision support system using a linear cycle ? Explain the difference between the staged approach and the evolutionary approach. Are you familiar with any system where a prototype problem-solving approach would be useful ? 8+8
- a) Draw the context diagram of the budget monitoring system. Describe budget monitoring system with the help of data flow diagram (DFD) explaining its components.
- b) Define physical and logical DFDs. What is the difference between them ? Convert a physical DFD to logical DFD with an illustration. Write some useful features of a good DFD. 8+8
5. What do you understand by the term object-oriented paradigm as compared to object-oriented languages ? Describe object structures inheritance, multiple inheritance and polymorphism. Describe what you see as the difference between using objects for analysis and using them for implementation. In what ways may object orientation be used in system development methodologies ? 16

- a) Explain with diagram the steps involved for program design of a system. Describe the gradual transition from a DFD to program design with an example.
- b) What do you mean by module coupling and cohesion ? Briefly outline different ways of coupling and cohesion used in structured design. 8+8