00327

THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF COMPUTER SCIENCE
B.Sc. DEGREE PROGRAMME – 2017/2018
CSU4302: SYSTEM ANALYSIS AND SOFTWARE ENGINEERING
NO BOOK TEST - 2
DURATION: **ONE HOUR ONLY (1HR)**

Date: 02nd February 2019 **Time: 10.30am – 11.30am**

Answer ALL Questions.

1.

a. Consider the **use case diagram** given in Figure 1.

i. Identify the various roles of those using inventory systems and the functions related to each role.

ii. Identify the relationship/s, the use cases used to relate each other. Explain the purpose of the relationship/s clearly.

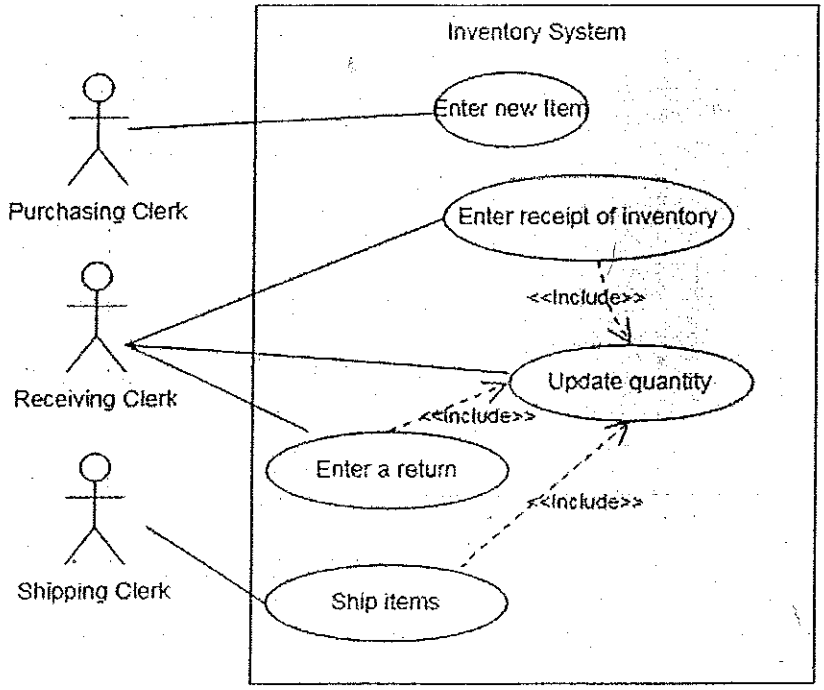

Figure 1: User Case Diagram of an Inventory System

2.

a. Explain the difference between **aggregation** and **composition**.

b. Draw a **class diagram** for the following description.

The system stores information about two things: Cars and owners. A car has the properties of make, model and year. The owner has the properties of name and address. Assume that a car must be owned by one owner and an owner can own many cars, but that an owner might not own any cars (perhaps she just sold them all, but you still want a record of the owner in the system). These cars can be of the type: sport car, sedan, and minivan.

3.

a. How does a **Sequence diagram** describe about the dynamic aspect of a system?

b. Draw a **sequence diagram** to illustrate the way of making a phone call to your friend by using the objects of "Caller", "Phone", and Recipient" classes.

4.

a. How does a **Statechart diagram** describe about the dynamic aspect of a system?

b. Consider the Statechart diagram given in Figure 2;

i. What event turns on the printer?

ii. What state/s do/does the printer go into when it is turned on?

iii. What is the composite state of the printer?

iv. What state/s is/are concurrent with which state/s?

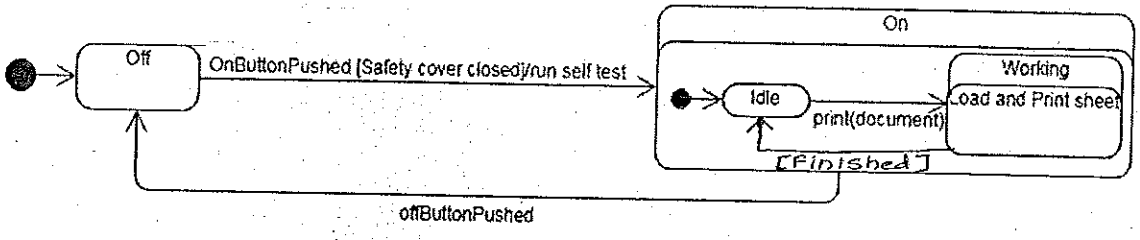

Figure 2: State chart Diagram of a printer