DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER VI [I.T.]
SUBJECT: (CT616) SOFTWARE ENGINEERING

Examination	**: BLOCK EXAMINATION**	**Seat No.**	**:**
Date	**: 03/04/2014**	**Day**	**:**
Time	**: 03:00 to 4:15 PM**	**Max. Marks**	**: 36**

INSTRUCTIONS:
1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 **Do as directed.** **[12]**

(a) How does data abstraction help in reducing the coupling in a design solution **[2]**

(b) What are the characteristics of good design? **[2]**

(c) What is meant by design patterns? What are the advantages of using design patterns? **[2]**

(d) Define the term SCI in the context of software change management. **[2]**

(e) How does software reliability relate to software quality? **[2]**

(f) State true of false and justify. **[2]**

1. The inheritance relationship describes the has-a relationship among the classes.
2. State chart diagrams in UML are normally used to model how some behavior of a system is realized through the cooperative actions of several objects

Q.2 Attempt ***Any TWO*** of the following questions. **[12]**

(a) What are drivers and sub modules in the context of integration and unit testing of a software product? Why are stubs and drivers modules required? **[6]**

(b) Given a software product and its requirements specification document, explain how would you design the system test suites for this software product? **[6]**

(c) Identify the factors which make the measurement of software reliability a much harder problem than the measurement of hardware reliability. **[6]**

Q.3 (a) Perform DFD level 0,1 and 2 for the following system: **[6]**

Supermarket automation software(SAS): The manager of a supermarket wants automation software to be developed. The supermarket stocks a set of items. Customers pick up their desired items from the different counter in required quantities. The customers present these items to the sales clerk. The sales clerk enters the code numbers of these items along with their respective quantities/units.

(b) Draw the class diagram for the system defined above. **[6]**

OR

Q.3 (a) Consider the following system: A departmental store maintains inventory of various products being sold by them. The products are classified under three categories – Fruits and Vegetables; Groceries and Cloths. All these items have different kinds of promotion schemes. You need to help departmental store to design an online stock management, stock pricing and discount system. Make necessary assumptions. **[6]**

Draw the use-case diagram for the system given above.

(b) Draw the activity and state-chart diagram for the system given above in Q.3(a). **[6]**