**PROGRAM MASTERS OF COMPUTER APPLICATION (MCA)**

**SEMESTER III**

**COURSE CODE &amp; NAME DCA7103 &amp; ADVANCED SOFTWARE ENGINEERING**

**Assignment Set – 1**

**1. a. What is software engineering? Explain principles of software engineering.**

**Ans:** Software engineering is the application of principles used in the field of engineering, which usually deals with physical systems, to the design, development, testing, deployment and management of software systems.

**Alan Davis** (1994) is one of the earlier authorities to bring forward a set of principles of software engineeri

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**2. a. Explain software process, project, and product in detail.**

**Ans: The following points are noted about software processes:**

**•** Processes use resources subject to given constraints and produce intermediate and final products.

• Processes are

**3. Briefly explain all models of the Software Life-Cycle Model.**

**Ans: Prototyping Model** In prototyping model, the requirement gathering is done initially. Developer and customer define overall objectives, identify areas which needs more requirement gathering. Then a quick design is prepared. This quick design represents what will be input by user and the output

**Assignment Set – 2**

**4. a. Describe the three phases of an object-oriented design process.**

**Ans:**

The Object Oriented Design Using Unified Approach

In the OOAD design approach as shown in figure, we have three phases.

The **first phase** deals with the designing of classes and applying the design axioms to it. Here we have to create the UML diagrams, define class associations and hierarchy.

In the **second phase**, we have to create the mirror classes for access layer corresponding to every class created in the first phase. We have to eliminate the redundant classes and use method classes to refine the class structure.

**5. a. Explain the software reengineering process model.**

**Ans:** To implement these principles, we apply software reengineering process model that defines six activities, shown in Figure. In some cases, these activities occur in a linear sequence, but this is not always the case. For e.g., it may be that reverse engineering may have to occur before document restructuring can

**b. Describe the software quality assurance.**

**Ans:** Software quality assurance is defined as a planned and systematic approach to the evaluation of the quality and adherence to software product standards, processes and procedures. SQA includes the process of assuring that standards and procedures are established and are followed throughout the software

**6. Explain different types of software testing.**

### Ans: Types of Testing:-

**1. Unit Testing**

It focuses on the smallest unit of software design. In this, we test an individual unit or group of interrelated units. It is often done by the programmer by using sample input and observing its corresponding outputs.

Example:

a) In a program we