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| **SESSION** | **Feb 24** |
| **PROGRAM** | **BACHELOR OF COMPUTER APPLICATIONS (MCA)** |
| **SEMESTER** | **V** |
| **COURSE CODE & NAME** | **DCA3103 – SOFTWARE ENGINEERING** |
| **CREDITS** | **4** |
| **NUMBER OF ASSIGNMENTS & MARKS** | **02****30 Marks each** |

**Set – I**

**1. Explain the advantages and disadvantages of different software development models.**

**Ans 1.**

Software development models are methodologies or approaches used by software development teams to plan, design, build, test, and deliver software products. Each model has its own set of advantages and disadvantages, and the choice of which model to use depends on the specific project requirements, constraints, and team dynamics. Here's an overview of some common software development models:

1. **Waterfall Model:**

**Advantages:**

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**2.i. List the various guidelines for data design.**

**2ii. List various functions of architectural design.**

**Ans 2i.**

**Various Guidelines for Data Design:**

1. **Understand the Business Requirements:** Start by thoroughly understanding the business needs and objectives that the data will support. This includes understanding what data is essential, how it will be used, and who the primary users are.
2. **Data Modeling:** Employ data modeling techniques to create a clear and structured representation of the data. Common approaches include Entity-Relationship Diagrams (ERD) and Unified

**3. Briefly explain the different approaches to software process assessment and its improvement.**

**Ans 3.**

There are several approaches to software process assessment and improvement, each with its own methodologies and objectives. Here's a brief explanation of some of the common approaches:

1. **Capability Maturity Model Integration (CMMI):** CMMI is a framework that focuses on improving the maturity of an organization's processes. It provides a set of best practices for process improvement in various areas, such as development, service delivery, and acquisition.

**Set – II**

**4.i. Briefly explain the characteristics of software testing.**

**4ii. Write a short note on**

**a. White Box Testing**

**b. Black Box Testing**

**Ans 4(i).**

Characteristics of Software Testing: Software testing is a critical phase in the software development life cycle, and it has several important characteristics:

1. **Purposeful Activity:** Software testing is conducted with a specific purpose, which is to identify defects or issues in the software and ensure that it meets the specified requirements.
2. **Dynamic Process:**

**5. Define Software maintenance and explicate its various tasks.**

**Ans 5.**

Software maintenance refers to the process of managing and improving software after it has been deployed or released to users. It involves a series of tasks and activities aimed at ensuring that the software continues to meet its intended purpose, remains reliable, and adapts to changing user needs and environments. Software maintenance is a crucial phase in the software development lifecycle and typically consumes a significant portion of a software system's lifecycle

**6i. Briefly explain the Process of Agile Software Development.**

**6ii. Differentiate traditional Software Engineering and Modern Engineering.**

**Ans 6i.**

Agile Software Development Process: Agile software development is a set of principles and practices that prioritize flexibility, collaboration, and customer feedback in the software development process. Here's a brief overview of the key aspects of Agile:

1. **Iterative and Incremental:** Agile breaks the project into smaller iterations or increments, typically 2-4 weeks long. Each iteration results in a potentially shippable product increment.
2. **Customer Collaboration:** Agile emphasizes close collaboration with customers and stakeholders