**Enroll. No._____**

**MARWADI UNIVERSITY**

**Faculty of Technology**

Information and Communication Technology

**SEM: 6** **MU FINAL EXAM** **MAY: 2024**

---

**Subject: - Software Engineering-01CT0615** **Date:-14/05/2024**

**Total Marks:-100** **Time: -180 Minutes**

**Instructions:**

1. **All Questions are Compulsory.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Do not write/sign/indication/tick mark anything other than Enroll No. at a specific place on the question paper.**

**Question 1(a)** **Answer the following questions.** **10**

**1** Software is defined as _____

a) set of programs, documentation & configuration of data

b) set of programs

c) documentation and configuration of data

d) None of the mentioned

**2** What are the features of Software Code?

a) Simplicity

b) Accessibility

c) Modularity

d) All of the above

**3** CASE stands for

a) Computer-Aided Software Engineering

b) Control Aided Science and Engineering

c) Cost Aided System Experiments

d) None of the mentioned

**4** Why do bugs and failures occur in software?

a) Because of Developers

b) Because of companies

c) Because of both companies and Developers

d) None of the mentioned

**5** Agile Software Development is based on which of the following type?

a) Iterative Development

b) Incremental Development

c) Both Incremental and Iterative Development

d) Linear Development

**6** Adaptive Software Development(ASD) has which of the following three framework activities?

a) speculation, collaboration, learning

b) analysis, design, coding

c) requirements gathering, adaptive cycle planning, iterative development

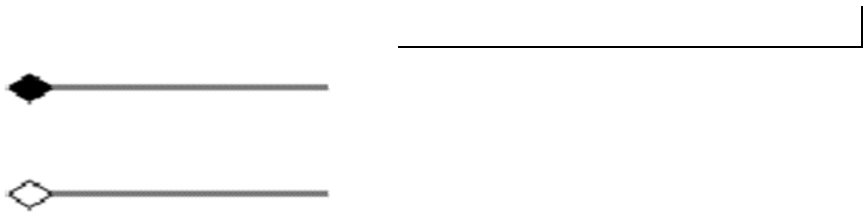
d) all of the mentioned

**7** Which of the following document contains the user system requirements?

a) SRD

b) DDD
c) SDD
d) SRS

**8** What type of core-relationship is represented by the symbol in the figure below?



a) Aggregation
b) Dependency
c) Generalization
d) Association

**9** If you were a lead developer of a software company and you are asked to submit a project/product within a stipulated time-frame with no cost barriers, which model would you select?
a) Waterfall
b) Spiral
c) RAD
d) Incremental

**10** Spiral Model has high reliability requirements.
a) True
b) False

**Question 1(b)** **Answer the following questions.** **10**

**1** Give the classification of UML diagram.
**2** Write different phases of SDLC model.
**3** Which SDLC model is used to iterative development and risk analysis?
**4** When a system needs to be produced in a short span of time (2-3 months) than which SDLC model is used?
**5** Linear sequential model is also known as?
**6** What is Cyclomatic complexity?
**7** Name the various Black Box testing strategies.
**8** Which graph is used to calculate Cyclomatic complexity?
**9** Write the full form of DSDM.
**10** Define Product Backlog in SCRUM.

**Question 2(a)** Draw and explain various phases of waterfall model. **8**
**(b)** What is Software Testing? Explain Black-box Testing in details. **8**

Or

**(b)** Draw and explain Spiral Model with its advantages. **8**

**Question 3(a)** What do you mean by integration testing? Explain their outcomes. **8**
**(b)** What is Extreme Programming? **4**
**( c)** Write short note on Unit Testing. **4**

Or

| | | |
|---|---|---|
| **Question 3(a)** | What is the roll of SCRUM in agile methodology? | **8** |
| **(b)** | Differentiate Stub and Driver. | **4** |
| **( c)** | Define following:<br>(1) Generalization<br>(2) Multiplicity<br>(3) Composition<br>(4) Aggregation | **4** |
| **Question 4(a)** | Explain Use Case diagram with proper example. | **8** |
| **(b)** | Explain different message format used in sequence diagram with proper example. | **8** |

Or

| | | |
|---|---|---|
| **Question 4(a)** | Draw various DFD notation and explain DFD-level 3 for banking system. | **8** |
| **(b)** | Write short note on Adaptive Software Development. | **8** |
| **Question 5(a)** | Explain SRS in detail. | **6** |
| **(b)** | List out various non-functional requirements. | **4** |
| **( c)** | Differentiate Agile model and Waterfall model. | **4** |

Or

| | | |
|---|---|---|
| **Question 5(a)** | Explain RAD model. | **6** |
| **(b)** | Write difference between alpha testing and beta testing. | **4** |
| **( c)** | Write difference between Verification and Validation. | **4** |
| **Question 6(a)** | Write three different formula to find Cyclomatic Complexity and find it for the given below. | **8** |

```
if A=354
        then if B>C
                then A=B
                else A=C
        end if
end if
print A
```

| | | |
|---|---|---|
| **(b)** | Explain Crystal in Agile methodology. | **4** |
| **( c)** | Write various principles of Agile modelling. | **4** |

Or

| | | |
|---|---|---|
| **Question 6(a)** | Explain White Box Testing in detail. | **8** |
| **(b)** | Explain Feature Driven Development in Agile. | **4** |
| **( c)** | What is Umbrella activities? | **4** |

****** Best Of Luck******

Enroll. No._____

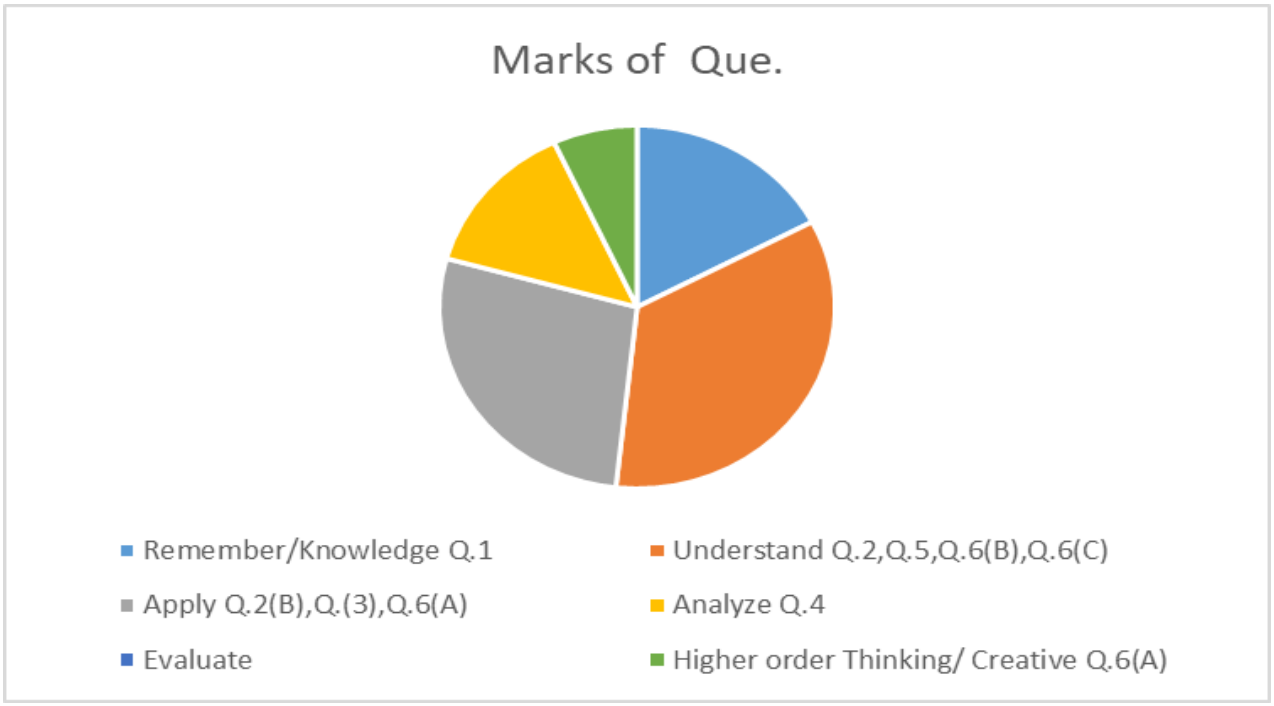
– Bloom'S Taxonomy Report –

**Sub: Software Engineering**
**Sem.-6**
**Branch: Information and Communication technology**

## Que. Paper weightage as per Bloom's Taxonomy

| LEVEL | % of weightage | Question No. | Marks of Que. |
|---|---|---|---|
| Remember/Knowledge | | Q.1 | 20 |
| Understand | | Q.2,Q.5,Q.6(B),Q.6(C) | 40 |
| Apply | | Q.2(B),Q.(3),Q.6(A) | 32 |
| Analyze | | Q.4 | 16 |
| Evaluate | | | |
| Higher order Thinking/ Creative | | Q.6(A) | 8 |

## Chart/Graph of Bloom's Taxonomy



# Course Outcome Wise Questions

| Subject Code | **01CT0615** | Subject | **SOFTWARE ENGINEERING** |
|---|---|---|---|

| CO No. | Course Outcome |
|---|---|
| **CO1** | Understand various software engineering principles and their application |
| | **1(A), 1(B), 2(A), 2(B-Or), 3(A-Or), 3(B-Or), 4(A-Or), 5(A), 5(B), 6(A), 6(A-Or), 6(C), 6(C-Or)** |
| **CO2** | Demonstrate use of various Agile methodologies for software development |
| | **1(A), 1(B), 2(B), 3(A-Or), 4(B-Or), 5(C), 5(C-Or), 6(B), 6(B-Or), 6(C)** |
| **CO3** | Apply various modeling techniques for designing system requirement |
| | **1(A), 1(B), 2(A), 2(B-Or), 3(A), 3(C), 3(C-Or), 4(A), 4(B), 5(A-Or), 5(C)** |
| **CO4** | Identify different types of risk and evaluate its impact on software system |
| | **1(A), 1(B), 3(B), 3(B-Or), 3(C-Or), 4(A), 4(A-Or), 4(B)** |
| **CO4** | Distinguish different testing strategies and Create test cases |
| | **1(A), 1(B), 2(B), 3(A), 3(B), 3(C), 5(B-Or), 5(C-Or), 6(A), 6(A-Or)** |
| **CO6** | Able to understand and apply the basic project management practices in real life projects |
| | **1(A), 1(B), 5(A), 5(A-Or), 5(B), 5(B-Or), 6(B)** |

| Blooms Taxonomy | Question List |
|---|---|
| **Remember / Knowledge** | 1(A), 1(B), 2(B-Or), 3(A), 3(B), 3(B-Or), 4(B-Or), 5(B-Or), 6(C), 6(C-Or) |
| **Understand** | 1(A), 1(B), 2(A), 2(B), 3(A), 3(A-Or), 3(B), 3(C), 4(A), 4(B), 4(B-Or), 5(A), 5(B), 5 (C), 5(C-Or), 6(A), 6(B), 6(B-Or), 6(C), 6(C-Or) |
| **Apply** | 1(A), 1(B), 2(A), 2(B-Or), 4(A-Or), 5(A), 5(A-Or), 5(B), 5(C), 6(A-Or), 6(B) |
| **Analyze** | 1(A), 1(B), 2(B), 3(B-Or), 3(C-Or), 4(A), 4(A-Or), 4(B), 5(A-Or), 5(B-Or), 5(C-Or) |
| **Evaluate** | 1(B), 3(C), 3(C-Or), 6(A) |
| **Higher order Thinking / Creative** | 1(B) |