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B.Tech. Degree V Semester Regular/Supplementary Examination January 2023

CS 19-202-0503 OBJECT ORIENTED SOFTWARE ENGINEERING (2019 Scheme)

Time: 3 Hours

Maximum Marks: 60

Course Outcome

On successful completion of the course, the students will be able to:

CO1: Compare and classify various software process/ life cycle models.

CO2: Analyze structured vs object oriented modeling.

CO3: Illustrate various techniques in software quality assurance.

CO4: Analyze various principles of software project management.

CO5: Compare and classify the new trends in life cycle models in industry.

CO6: Analyze and make use of any one testing tool used in the industry.

Bloom's Taxonomy Levels (BL): L1 – Remember, L2 – Understand, L3 – Apply, L4 – Analyze, L5 – Evaluate, L6 – Create

PO – Programme Outcome

PART A(Answer **ALL** questions)

(8 × 3 = 24)

| | Marks | BL | CO | PO |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----|----|-----------------------|
| I. (a) Justify the statement “we make an object oriented system by combining structural and behavioural UML models in an effective way. | 3 | L2 | 2 | 1,2,3,5,8,1 1,PSO2 |
| (b) Create a DFD for an ATM transaction. Clearly explain your notions and assumptions. | 3 | L3 | 2 | 1,2,3,5,8,1 1,PSO2 |
| (c) “Client server systems are very popular architecture styles”. Explain with examples. | 3 | L2 | 1 | 1,2,3,5,8,1 1,PSO2 |
| (d) Analyze the following scenario and suggest the best cohesion and coupling techniques. “There are two modules M1 and M2 and they need to send a packet of information from M2 to M1. Also M1's programs are executed at the same time. Suggest a cohesion for M1 and coupling between these two. | 3 | L4 | 1 | 1,2,3,5,8,1 1,PSO2 |
| (e) Give examples for white box testing with examples and diagrams. | 3 | L2 | 3 | 1,2,3,5,8,1 1,PSO2 |
| (f) What are the key process areas of CMM level 3? | 3 | L2 | 3 | 1,2,3,5,8,1 1,PSO2 |
| (g) How we can evaluate the various software quality metric and which management function is responsible for SQA and SQM? | 3 | L5 | 3 | 1,2,3,5,8,1 1,PSO2 |
| (h) Distinguish a CASE environment and workbench. | 3 | L2 | 5 | 1,2,3,5,8,1 1,PSO2 |

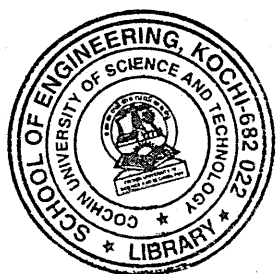
PART B

(4 × 12 = 48)

- II. Suggest the best life cycle model after evaluating the following systems and explain that life cycle model in detail with diagrams and example.
- A large software system for automating a supermarket
 - An AI based robotic arm software where expertise is less and requirements are not clear.

OR

(P.T.O.)



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| | | Marks | BL | CO | PO |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------|-------|----|----|-----------------------|
| III. | Suggest the best structured analysis model after evaluating the following systems and explain that model in detail with diagrams and example | | | | |
| | (i) The complex flow of data between departments for automating a supermarket | 6 | L5 | 2 | 1,2,3,5,8,1 1,PSO2 |
| | (ii) The various conditions for sanctioning a loan can be expressed as a table of conditions and actions. | 6 | L5 | | |
| IV. | (a) Explain any four Coupling techniques in detail with examples. | 8 | L2 | 1 | 1,2,3,5,8,1 1,PSO2 |
| | (b) Explain design heuristics or best practices. | 4 | L2 | 1 | |
| | OR | | | | |
| V. | (a) Explain any four Cohesion techniques in detail with examples. | 8 | L2 | 1 | 1,2,3,5,8,1 1,PSO2 |
| | (b) Explain use case analysis with examples. | 4 | L2 | 1 | |
| VI. | Distinguish CMM and ISO with examples and diagrams. | 12 | L4 | 3 | 1,2,3,5,8,1 1,PSO2 |
| | OR | | | | |
| VII. | (a) Explain the format of a test plan in detail with an example. | 4 | L1 | 3 | 1,2,3,5,8,1 1,PSO2 |
| | (b) Distinguish reviews and audits. | 8 | L4 | 3 | |
| VIII. | (a) Distinguish Organizing and staffing management functions. | 8 | L4 | 4 | 1,2,3,5,8,1 1,PSO2 |
| | (b) Briefly explain the assumptions for COCOMO. | 4 | L1 | 4 | |
| | OR | | | | |
| IX. | (a) Distinguish directing and controlling management functions. | 8 | L4 | 4 | 1,2,3,5,8,1 1,PSO2 |
| | (b) Briefly explain the equations for BASIC COCOMO with examples. | 4 | L1 | 4 | |

Blooms's Taxonomy Levels

L1 - 12%, L2 - 41%, L3 - 4%, L4 - 21%, L5 - 22%.
