MCS–034

MASTER OF COMPUTER APPLICATIONS

MCA (REVISED)

Term-End Examination

December, 2023

MCS-034 : SOFTWARE ENGINEERING

Time : 3 Hours   *Maximum Marks : 100*

Weightage :75%

Note **:** *(i)   Question No. **1** is compulsory.*

*(ii) Attempt any **three** questions from the rest.*

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1. (a) With the help of diagrams, explain Spiral and Rapid Application Development (RAD) software engineering models.   10

   (b) Illustrate Boundary-Value Analysis and Equivalence Partitioning methods of Black-box testing. Give an example for each.   10

(c) With reference to Formal Technical Review, explain the following :   10

   (i) Objectives of Formal Technical Review (FTR)

   (ii) Informal and Formal Technical reviews

   (iii) Outcomes of FIR

   (iv) Typical activities of FIR

(d) Define component-based software engineering process. Also, explain the two processes normally domain engineering and component based development which occurs parallely during the component based software engineering process.   10

2. (a) Explain in detail the Constructive Cost Model introduced by Barry Boehm.   10

   (b) Define a Control Flow Graph (CFG). Draw CFG's for a sequence statement for if-else, while-loop and switch case statement of your choice and explain them.   10

3. (a) Define the process of change management. Mention its objectives and all the steps involved in change management process. 10

   (b) What is version-control ? With the help of an example evolutionary graph, explain the version-control of a software product. 10

4. (a) Differentiate Conventional Software Engineering Models *vs* Cleanroom Software engineering models. 10

   (b) Explain the concept of Re-engineering and discuss all the steps involved in it. 10

5. Write short notes on the following : 4×5=20

   (a) Software Configuration management

   (b) Metrics in Web software engineering

   (c) Important activities pertaining to modular design and Architectural design

   (d) Key Process Areas (KPA's) of Capability Maturity Model (CMM)

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