

**MCA 1st Semester Examination, 2019**

**SOFTWARE ARCHITECTURE**

PAPER – MCA-105

*Full Marks : 100*

*Time : 3 hours*

Answer any **five** questions

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

*Illustrate the answers wherever necessary*

1. (a) What is Software Architecture ? Why is it important ? 2 + 2
  
- (b) What is Architecture Business Cycle ? Explain how the architecture business cycle works, with a neat diagram. 2 + (2 + 6)

2. (a) Define architectural model, reference model, reference architecture and bring out the relationship between them. 7
- (b) Enumerate and explain in details the different groups software architecture structures are categorized into with the help of appropriate pictorial descriptions. 7
3. (a) Explain the process control paradigm with various process control definition ? 7
- (b) Discuss the invariants, advantages and disadvantages of pipes and filters architectural style. 7
4. (a) With the help of appropriate diagrams, explain the availability scenario and testability scenario in details. 4 + 4
- (b) What do you mean by tactics ? Briefly explain the different tactics for resisting attacks ? 1 + 5

5. (a) Briefly discuss the various types of dependencies that one module can have on another which forms the basis for prevention of ripple effect ? 8
- (b) Explain the control loop solution for a mobile robot ? 6
6. (a) Define black board architectural pattern. Briefly explain the steps to implement the blackboard patterns. 2 + 6
- (b) Explain with a diagram the objects involved in broker system. 6
7. Write short notes on (any two) : 7 × 2
- (i) Dynamic behaviour of MVC
- (ii) Usability Tactics
- (iii) Heterogeneous architecture.
- (iv) Process and product recommendations.

[Internal Assessment—30 Marks ]

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