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# P.E.S. College of Engineering, Mandya - 571 401

***(An Autonomous Institution affiliated to VTU, Belgaum)***

**Second Semester, M. Tech - Computer Science and Engineering (MCSE)**

**Semester End Examination; June - 2016**

**Software Architecture**

*Time: 3 hrs* *Max. Marks: 100*

***Note**: Answer **FIVE** full questions, selecting **ONE** full question from each unit.*

**UNIT - I**

1 a. What is a pattern? Discuss its categories. 10

b. Enumerate and explain in detail the different groups of software architecture structures with the help of a neat diagram. 10

2 a. How do you differentiate between software engineering and software architecture? Define architecture patterns, reference models and reference architecture. 10

b. Discuss architectural style. 10

**UNIT - II**

3 a. Explain system quality attributes from an architect's perspective view. 10

b. What is functionality? Explain the three classes of attributes with examples. 10

4 a. Explain the security characteristics. 10

b. Explain the business quality goals that frequently shape a System's Architecture. 10

**UNIT - III**

5 a. Mention and explain when a black board architectural pattern is used with its implementation. 10

b. Explain pipe and filter architectural patterns. Discuss the steps need to considered for building a system that process or transform a stream of input data (Implementation steps). 10

6 a. Explain microkernel pattern and the system that employs the same with an example of CRC diagram. 10

b. Explain presentation abstraction control architectural pattern for interactive software system with its advantages and disadvantages. 10

**UNIT - IV**

7 a. What are adaptable systems? Explain the micro kernel pattern components. 10

b. Explain master slave design pattern with CRC diagram. 10

8 a. What is reflection architectural pattern with its advantages and disadvantages? 10

b. List the variants of proxy and explain its CRC. 10

**UNIT - V**

9 a. Explain Architecture in the life cycle. 10

b. Explain how to form a team structure and a skeletal system. 10

10 a. Explain ADD and its steps. 10

b. List and explain the steps in documenting a view of architecture. 10

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