

**B.Tech. – VIEP – COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)**

Term-End Examination

December, 2015

BICS-005 : SOFTWARE ENGINEERING

Time : 3 hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) What do you mean by Software Engineering? What are the characteristics of software? 8
- (b) Define the process and software products. Which one is more important and why? 6

2. Explain in detail the following software process models :
 - (i) Waterfall model
 - (ii) Spiral model
 - (iii) Incremental process model 4+5+5=14

3. (a) Design Data Flow Diagram (DFD) for online examination and evaluation system. 7
- (b) Write down the software requirement specification for a system to manage a simple student registration system. 7

4. (a) How are the concepts of coupling and software portability related ? Provide an example to support your discussion. 7
- (b) What are the set of attributes that should be encompassed by effective software metrics ? Explain them. 7
5. (a) What are the different methods for verifying a detailed design ? 7
- (b) Explain the software crisis from a programmer's point of view. 7
6. (a) Describe the difference between verification and validation. 4
- (b) What are the different levels of testing ? For each specify which of the testing approaches (Functional, Structural or some other) is most suitable. 10
7. (a) Explain the functional and behavioural modeling. How do we model the software's reaction to some external event ? 8
- (b) Write briefly about project planning. 6
8. Write short notes on any *two* of the following : $2 \times 7 = 14$
- (a) COCOMO Model
- (b) Software Application
- (c) Prototyping Methods and Tools
- (d) CASE Tools
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