

Savitribai Phule Pune University  
Department of Management Sciences (PUMBA)  
Executive MBA  
2<sup>nd</sup> Year (Semester –IV) External Exam April- 2015  
**404(E) – Software Engineering**

**Time: 2hrs.**

**Marks: 50**

**Instructions to the students -**

- **Question No 1 carries 20 marks and is compulsory.**
- **Attempt 3 of the other questions that carry 10 marks each**

**1. Write short notes on any five [ 20 marks ]**

- (i) Business Process Engineering (ii) System Engineering Process  
(iii) Normalization (iv) Reverse Engineering (v) Case Tools  
(vi) Data Dictionary (vii) User Acceptance Testing  
(viii) Decision Trees (ix) Role of the System Analyst.

**2. Draw a diagram of the waterfall model. Mention the different sub elements within each block. Give a brief description of the Waterfall model and explain the problems associated with this model. (10 marks)**

- 3. a) Explain Communication Principles as a dimension of the Software Engineering Practice. (5 marks)**  
**b) Explain Planning Principles as a dimension of the Software Engineering Practice. (5 marks)**

**4. Answer any ONE of the following :**

- a) What are the different types of testing ? Explain each type in the right sequence. (10 marks)**  
**b) What are the different fact finding techniques. Explain each type in detail. (10 marks)**

**5. The new Dwarikadheesh Palace Mall has stores available for giving on rent to interested parties. The Mall proprietors will enter into a lease agreement for a period of a minimum of 3 years. Each store is of a different size. Some stores have acrylic painting, while others have oil painting for its walls. Still others have decorative wall paper. Tiling in different stores is also different. The rent therefore for each store is different. Individuals interested in renting the stores are requested to submit their details including name, age, occupation, investment budget, type of business etc to the secretary of the Mall. The address of the secretary is given in the advertisement.  
**a) Draw the Entity Relationship Diagram b) Draw context level DFD (10 marks)****

**6.A] Multiple Choice Questions.** Select the BEST answer. Note that multiple answers may be right, but one of them is the best answer. (5 marks)

**(i) extreme Programming**

- a) is an Agile software development methodology. It involves frequent releases and short development cycles.
- b) is a software development methodology that has the largest development cycle as compared to other methods.
- c) methodology has one major drawback that it has no checkpoints for including additional customer requirements.

**(ii) Business Process Re-engineering**

- a) helps companies restructure their organizations by focussing on their ground-up design of their business processes
- b) focusses on iterative optimization of sub-processes rather than a full scale recreation of processes
- c) has several objectives and in the pursuit of those, costs of operations may escalate.

**(iii) System Documentation**

- a) would include details of design, operation and maintenance of a system, but not the requirements and/or limitations
- b) would include details of design, operation and maintenance of a system and also the effort estimates or effort actual for building the system
- c) would include details of requirements, design, operation and maintenance of a system. Capabilities and limitations are also included.

**(iv) OO Modeling**

- a) is an approach to modeling an application at the different stages going from abstract description to coding and then on to testing.
- b) is a modeling methodology done at the end of the SDLC to ensure that software parameters are in line with the Object Oriented principles.
- c) is a methodology for modeling an application at the beginning of the software development life cycle, typically by using UML.

**(v) CMMI**

- a) is a process improvement training and appraisal program that defines 5 levels of process maturity for processes.
- b) is Capability Maturity Model Integration which is a Quality Assurance index that indicates the level of quality of software
- c) focusses on improvement of processes as identified by Carnegie Mellon University, irrespective of the business goals of the organisation.

**6 B]** Fill in the blanks using the correct options from the parenthesis. [5 marks]

- (i) UML is a general purpose modeling language used in software engineering providing a standard way to \_\_\_\_\_ the \_\_\_\_\_ of a system  
(visualize, prototype, code, architecture)
  
- (ii) \_\_\_\_\_ methodology accepts changes in requirements even late in development. ( Predictive, waterfall, Agile, Spiral )
  
- (iii) The most commonly used methodology for the software development process is \_\_\_\_\_ (Waterfall, Agile, Iterative, Prototyping)
  
- (iv) Questionnaires are used as a fact finding technique in situations where the system users are not \_\_\_\_\_  
(friendly, co-located, knowledgeable about the system, employed with the client)
  
- (v) User Interface is the \_\_\_\_\_ application view with which the user interacts for using the software  
(front end, back end, middleware, graphical )