



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.TECH (IT)/SEM-6/IT-601/2012**

**2012**

**SOFTWARE ENGINEERING AND  
PROJECT MANAGEMENT**

*Time Allotted : 3 Hours*

*Full Marks : 70*

*The figures in the margin indicate full marks.*

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

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :

10 × 1 = 10

- (i) Which type of abstraction is used in software design ?
  - a) Control
  - b) Data
  - c) Procedural
  - d) All of these.
- (ii) To achieve good design, modules should have
  - a) Weak cohesion and low coupling
  - b) Weak cohesion and high coupling
  - c) Strong cohesion and low coupling
  - d) None of these.
- (iii) If the project size is same, then development time is maximum in case of
  - a) Embedded
  - b) Semi-dethatched
  - c) Organic
  - d) Impossible to determine.



- (iv) In Integration testing approach, where all modules making up a system are integrated in a single step is known as
- a) Top-down integration testing
  - b) Bottom-up integration testing
  - c) Big-band integration testing
  - d) Mixed integration testing.
- (v) Which of the following life cycle model deals with risk associated with software products ?
- a) Prototype model
  - b) Spiral model
  - c) Incremental model
  - d) Waterfall model.
- (vi) Tracking the correspondence between design component and SRS is called
- a) Availability
  - b) Maintainability
  - c) Reliability
  - d) Traceability.
- (vii) System testing performed by a set of friendly customers is called
- a) Alpha testing
  - b) Beta testing
  - c) Performance testing
  - d) Usability testing.
- (viii) MTTF is a measure of
- a) Reliability
  - b) Maintainability
  - c) Cost of effort
  - d) Testability.



- (ix) If data from one module is used to direct the order of execution in another, then the coupling is known as
- Stamp Coupling
  - Data Coupling
  - Control Coupling
  - Content Coupling.
- (x) Data processing programs are considered as
- Utility Programs
  - System Programs
  - Application Programs
  - None of these.

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

- What is Coupling ? What are the factors affecting coupling ?  
What is the relationship between coupling and cohesion ?  
 $1 + 2 + 2$
- What are the different types of Testing ? How to design a Test Case ?  
 $2 + 3$
- What is requirement tracing ? What is backward tracing *vs.* forward tracing ?  
 $2 + 3$
- What is Stress Testing ? Why is Stress Testing applicable to only certain types of systems ?  
 $2 + 3$
- What do you mean by balancing of DFD ? Explain with a suitable example.  
 $2 + 3$

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

- What are the differences between black box testing and white box testing ?
  - Discuss the roles of stubs and divers in integration testing.
  - Define quality assurance and quality control.  $5 + 5 + 5$



8. a) What is COCOMO model ? What are different categories of software development projects according to COCOMO estimation model ?
- b) What is function prototyping ? Is the spiral model of software development a risk management model ? Discuss in brief.
- c) Why do we need to estimate software cost ? What are the methods of estimation ?  $(2 + 3) + (2 + 4) + 4$
9. a) What is software project management ?
- b) What are the principles of project scheduling ?
- c) Explain WBS, Gantt chart and PERT chart.
- d) Briefly explain Organization and Team Structures.  $2 + 4 + 6 + 3$
10. a) Design 'White Box' test suite for the following :
- ```
int gcd (int x, int y)
{
    while (x!=y)
    {
        if (x>y)
            x=x-y;
        else
            y = y-x
    }
    return x;
}
```
- b) What is Function Point (FP) in project size estimation ?
- c) What is s/w reliability ? What is residual error ? How you estimate the residual error in a project ?  $4 + 5 + 6$
11. Write short notes on any *three* of the following :
- a) Verification and Validation
- b) RAD model
- c) Feasibility analysis
- d) MaCall's quality triangle
- e) User Interface design.