

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 110602

Roll No.

**B.TECH.**

**Theory Examination (Semester-VI) 2015-16**

**SOFTWARE ENGINEERING**

*Time : 3 Hours*

*Max. Marks : 100*

**Note: Attempt questions from all Sections as per directions.**

**Section-A**

**Attempt all parts of this section. Answer in brief. (2×10=20)**

- Q1.** (a) What do you mean by Reverse Engineering?  
(b) Define a software process.  
(c) What is testability?  
(d) Differentiate between cohesion and coupling.  
(e) Write down the objectives of Software Engineering.  
(f) What do you mean by SRS?

(1)

P.T.O.

- (g) Define the term Software Crisis.
- (h) Give any two reasons for increase in the software costs.
- (i) Differentiate between a Software measure and a Software metric.
- (j) What do you understand by the clean room strategy?

### Section-B

2. Attempt any five questions from this section. (10×5=50)

- (a) Write short notes on the following:
  - i) Coding standards.
  - ii) Verification and validation test.
- (b) Explain the decision table. Discuss the difference between decision table and decision tree.
- (c) What are drivers and stub modules in the context of integration and unit testing of a software product? Why are stubs and drivers modules required?

- (d) What do you mean functional independence? Why functional independence is the key factor for a good software design? Explain.
- (e) Explain the following statement: "Software Engineering is a layered technology".
- (f) In a software development organization, identify the persons responsible for carrying out the quality assurance activities. Explain the principal tasks they perform to meet this responsibility.
- (g) Why is software maintenance required? Discuss with examples.
- (h) What is software quality? What are three dimensions of software quality? Explain briefly.

### Section-C

Attempt any two questions from this section. (15×2=30)

- 3. Explain why a software system that is used in a real world environment must change or become progressively less useful.
- 4. Draw a flow graph, arrive at the cyclomatic complexity and find the set linearly independent paths for the following program:

```
void F(int key , int T[], int size , boolean found , int L)
```

```
{  
    int bot, top , mid;  
    bot=0;  
    top=size-1;  
    L=(top+bot)/2;  
    If(T[L]==key) found=true;  
    else  
        found=false;  
    while(bot<=top && ! found)  
    {  
        Mid=(top+bot)/2;  
        If(T[mid]==key)  
        {  
            Found=true; L=mid;  
        }  
        else if (T[mid]<key)  
            bot=mid+1;  
        else  
            top=mid-1;  
    }  
}
```

5. Define the term software design. Also discuss the coupling in the context of software design. For a good design, the modules should have low coupling. Why?