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

PAPER ID : 2524 Roll No. | | | | | | | | | | |

B.Tech.

(SEMESTER-VI) THEORY EXAMINATION, 2012-13

SOFTWARE TESTING

Time : 3 Hours] *[Total Marks : 100*

SECTION – A

1. Attempt **all** parts : **10 × 2 = 20**
   (a) What is the main benefit of designing tests early in the life cycle ?
   (b) What is risk-based testing ?
   (c) What is functional system testing ?
   (d) What are the advantages of Independent Testing ?
   (e) What is the key difference between preventative and reactive approaches to testing ?
   (f) What determines the level of risk ?
   (g) What is beta testing ?
   (h) What do you mean by RAD ?
   (i) Define the concept of six sigma.
   (j) Define TPA analysis Technique.

SECTION – B

2. Attempt any **three** parts : **3 × 10 = 30**
   (a) Given the following fragment of code, how many tests are required for 100% decision coverage & why ?

```
if width > length
        then biggest_dimension = width
                if height > width
        then biggest_dimension = height
end_if
else    biggest_dimension = length
        if height > length
        then biggest_dimension = height
        end_if
end_if
```

(b) Can you explain the different methodology for the execution and the design process stages in Six Sigma ?

(c) What is CMMI and explain the different maturity levels in a staged representation ?

(d) What are the different ways of doing Black Box testing ?

SECTION – C

Attempt **all** parts. **5 × 10 = 50**

3. Attempt any **two** parts : **2 × 5 = 10**

(a) What is component testing ? Why stubs and drivers are used to replace the missing software and simulate the interface ? Explain.

(b) What are the different methodologies in Agile Development Model ?

(c) Consider the following techniques. Which are static and which are dynamic techniques and why ?

(i) Equivalence Partitioning
(ii) Use Case Testing
(iii) Data Flow Analysis
(iv) Exploratory Testing
(v) Decision Testing

4. Attempt any **two** parts : **2 × 5 = 10**

(a) Draw & explain the fish bone/Ishikawa diagram.

(b) Explain the PDCA cycle and discuss where testing fits in it.

(c) What are the categories of defects ? Explain.

5. Attempt any **two** parts : **2 × 5 = 10**

(a) How does load testing work for websites ?

(b) What are the different kinds of variations used in Six Sigma ?

(c) What are the different models in CMMI ?

6. Attempt any **two** parts : **2 × 5 = 10**

(a) Define data-driven testing. Explain its features, applications and working.

(b) Explain the function points of the following elements :

(i) FTR (ii) ILF (iii) EIF
(iv) EI (v) EO (vi) EQ
(vii) GSC

(c) How many types of application boundaries are present ? Explain how they are identified using the litmus test.

7. Attempt any **two** parts : **2 × 5 = 10**

(a) What different sources are needed to verify authenticity for CMMI implementation ?

(b) How one can determine the estimate for black box testing for a given project ? How TPA works ?

(c) Explain capability levels in a continuous representation. Continuous model is the same as the staged model. Justify the statement.