Total No. of Questions : 10]

SEAT No. :

P3455

[Total No. of Pages : 3

[5670]-731
B.E. (I.T.)
SOFTWARE TESTING & QUALITY ASSURANCE
(2015 Pattern) (Semester - I) (414457C) (Elective-II)

Time : 2½ Hours] *[Max. Marks :70*

Instructions to the candidates:

1) ***Answer Q.1or Q.2, Q.3 or Q.4, Q.5 orQ.6, Q.7 or Q.8, Q.9 or Q.10.***
2) ***Draw neat diagrams and assume suitable data wherever necessary.***
3) ***Figures to the right side indicates full marks.***

Q1) a) Explain different types of system testing. **[6]**

b) Define the following terms **[4]**

i) Failure ii) Defect

iii) Test case iv) Software quality

OR

Q2) a) Explain the steps in developing test cases with a cause and effect graph. **[6]**

b) Explain key elements of TQM system. **[4]**

Q3) a) Explain Taguchi Quality loss function. **[6]**

b) Suppose you are a member of a team that was designing a defect repository. What information do you think should be associated with each defect? why is this information useful and who would use it? **[4]**

OR

Q4) a) Explain design and architecture of automation. **[6]**

b) Below is a simple example showing the decision statement with compound predicate. **[4]**

```
If (age<65 and married = true)
    {
                1.Do X.
                2.Do Y
    }
    Else
                Do Z
```

P.T.O.

Which testing technique you will select to write test cases for

i) Simple decision coverage

ii) Condition coverage

Q5) a) Explain modern tools of software quality. **[8]**

b) Explain in detail the components of the software quality assurance system. **[8]**

OR

Q6) a) A test engineer has just started to record defect data for her process. she spends the bulk of her time developing test harness code. The following defect data collected from 10 recent projects she has worked on. The defect types are 10: Documentation, 20: syntax, 30: build, 40: assignment,50: interface 60: checking 70: Data 80: Function 90: system, 100: environment, Draw a pareto chart and find out the area where you think this engineer should focus her defect detection and prevention activities. **[8]**

Defect type	No of Occurrences
10	5
20	40
30	5
40	22
50	14
60	9
70	11
80	38
90	2
100	1

b) Define software quality assurance. List various objectives of Software Quality Assurance (SQA) **[8]**

Q7) a) Describe PDCA cycle in detail with reference to ISO 9001 standard. **[8]**

b) What is TMM? explain various levels & benefits of TMM **[8]**

OR

Q8) a) Draw and explain CMMI levels **[8]**

b) Write a short note on. **[8]**

i) SPICE

ii) P-CMM

Q9) a) Write a short note on. **[10]**

i) Software Project Internal Auditing and assessments

ii) OO Methodology

b) Explain in detail PSP and TSP software process. **[8]**

OR

Q10)a) What is Review? Explain following types of reviews with respect to static testing **[10]**

i) Inspections

ii) Walkthroughs

b) Explain clean room methodology in detail along with diagram. **[8]**

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