Total No. of Questions :12]

SEAT No. :

P3409

[Total No. of Pages :3

[4959]-183
B.E. (IT)
SOFTWARE TESTING AND QUALITY ASSURANCE
(2008 Course) (Semester - I) (414442)

Time : 3 Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***Answer question numbers Q1 or Q2, Q3 or Q4, Q5 or Q6 from section I.***
2) ***Answer questions nubers Q7 or Q8, Q9 or Q10, Q11 or Q12 from section II.***
3) ***Answer to the two sections should be written in separate answer books.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Figures to the right indicate full marks.***
6) ***Assume suitable data, if necessary.***

SECTION-I

Q1) a) Explain testing verses debugging. Differentiate between unit testing and integration testing. **[8]**

b) Explain in short any four methods of system level testing. **[8]**

OR

Q2) a) What is Alfa and Beta testing? How does it affect Acceptance criteria? **[8]**

b) 'V & V diagram is basis for every type of testing'? Comment on this statement. What is the role of test plans in a V & V diagram? **[8]**

Q3) a) What do you mean by white box testing? Explain the different test case design for white box testing. **[8]**

b) Draw and explain software defect life cycle. **[8]**

OR

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Q4) a) Why mutation testing called fault is based test approach? Explain with an example. **[8]**

b) Explain the difference between the following: **[8]**

i) Test plan and test strategy.

ii) Defect severity and Defect priority.

Q5) a) Explain with example the GQM method for identifying software measures. **[10]**

b) What is customer problem metric? What are approaches to achieve low PUM. **[8]**

OR

Q6) a) How do you calculate defect density and defect removal rate? Discuss ways to improve these rates for a better quality product. **[10]**

b) Write a note on control flow structures also focus on sequencing and nesting of flow graphs. **[8]**

SECTION-II

Q7) a) What does SQA ensure? What are the goals of SQA activity? **[10]**

b) Explain the following terms w.r.t. software quality: **[8]**

i) Quality

ii) Cost of Quality

iii) Quality Assurance

iv) Quality control

OR

Q8) a) Illustrate with example the use of following techniques in improving quality **[8]**

i) Code inspection

ii) Project planning

b) Explain the following software reliability quality attributes in short: **[10]**

i) Usability.

ii) Portability.

iii) Maintainability.

iv) Interoperability.

v) Correctness.

Q9) a) What is six sigma? Explain the terms DMAIC and DMADV with reference to six sigma. **[8]**

b) List all the requirements of ISO 9000 and ISO 9001. **[8]**

OR

Q10)a) List and Explain Maturity Levels in the CMM. **[8]**

b) Explanation for the PDCA cycle with reference to ISO 9000:9001. Diagram? **[8]**

Q11)a) List various levels of CMM and explain in detail the KPA's for each level. **[8]**

b) Explain in detail the Quantitative Process Management KPA. **[8]**

OR

Q12)a) Explain the goals and activities performed in the following KPA's. **[8]**

i) Software Configuration Management.

ii) Organization Process Definition.

b) How is defect prevention and process change management brought into practice? **[8]**

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