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REVA UNIVERSITY
Bengaluru, India

Sixth Semester B.Tech CSE Semester End Examination May/June 2018
Course (Subject): Software Engineering and Testing
Course Code: BTCS15F6100

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

Note: *Answer ONE FULL question from each unit.*

UNIT –I

1. a) A private retail store is assign to develop a software which monitors the staff activities such as login time, working hours, number of products sold, leaves taken, incentives and salary drawn etc. At the end of the development, manager wants to audit to rate the software's quality. Enumerate the parameters to be considered for the same. 7
   b) Consider an ATM system which has the main functionality like verifying the pin number, checking the balance, checking the no. of transactions. Outline the non-functional requirement by setting out its expected reliability and availability. 8
   c) Dissertate the system procurement process with the help of a neatly labeled figure. 10

OR

2. a) Consider a simple burglar alarm system which is intended to protect against intrusion and to detect fire. It incorporates smoke sensors, movement sensors, door sensors, video cameras under computer control (located at various places in the building), an operator console where the system status is reported and external communication facilities to call the appropriate services such as the police and fire departments. Sketch a block diagram of a possible design for a system. 7
   b) With regard to Process iteration, explain the incremental delivery approach with neat diagram. 8
   c) Illustrate waterfall model with appropriate diagram. Also, list out advantages and disadvantages for the same. 10

UNIT – II

3. a) A software system is to be developed to manage the records of patients who enter a clinic for treatment. The records include registration details, treatments given, patient's feedback etc. after treatment, the records of their stay are sent to the patient's doctor who maintains their complete medical record. Identify the principal viewpoints which might be taken into account in the specification of this system and organize it using a viewpoint hierarchy diagram. 7
   b) Point out the requirement engineering process with neat diagram. 10
   c) Expound the non-functional requirements with neat diagram. 8

OR

4. a) Extreme programming express user requirements as stories, with each story written on a card. Hence, discuss the various practices followed in extreme programming. 10

b) Classify the requirements which are likely to change during the system development process or after the system has become operational. 7

c) List and explain Lehman's law. 8

UNIT – III

5. a) Bring out the difference between verification and validation. Also, explain static and dynamic verification and validation with neat diagram. 8

b) What is inspection? Point out the roles in the inspection process. 8

c) Justify why interface testing is necessary? Categorize different types of interface testing and associated errors with it. 9

OR

6. a) Elucidate software testing life cycle. 10

b) Before delivering any system it is required to perform testing on it. Hence, list and explain two fundamental approaches to identify test cases. 7

c) Fault discovered during testing is classified based on severity. Justify its significance with an example. 8

UNIT – IV

7. a) What is the motivation behind Equivalence Classes & how does it address the problem of Boundary Value Analysis method. Also, explain the types of equivalence testing by generating testing points considering two variables 10

b) Explain with appropriate diagram Boundary Value Analysis technique for a function of two variables by generating all possible test cases. Also justify how boundary value testing belongs to functional testing techniques 10

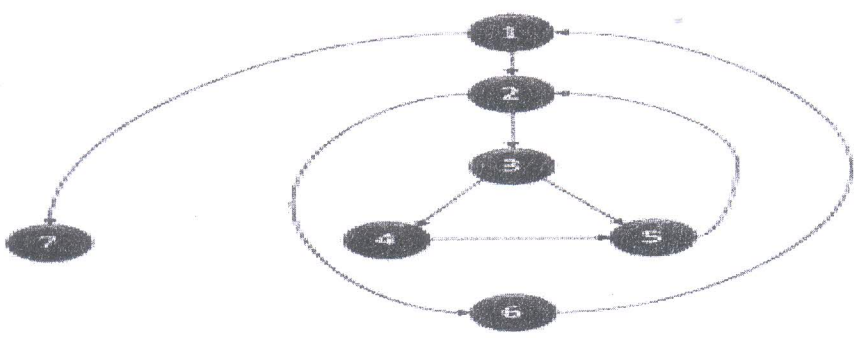
c) Discuss how well worst case testing deals with the multiple fault assumption. 5

OR

8. a) List out the significance of a decision table. Develop a decision table to find out the test cases for a triangle problem. 8

b) Discus different du-path test coverage metrics, also sketch Rapps-weyuker hierarchy of dataflow coverage metrics. 10

c) Generate cyclomatic complexity for the following graph, and determine the linearly independent paths of the given graph. 7



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