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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- Sep 2017

B.Tech 5th Semester

COURSE CODE: 10B1WCI515 MAX. MARKS: 15

COURSE NAME: SOFTWARE TESTING AND DEBUGGING

COURSE CREDITS: 04 MAX. TIME: 1 Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1. **[3x1=3]**

a) How V model and testing maturity model affect the quality of software Explain?
b) Design the ETVX model for coding phase of software development life cycle.
c) Differentiate among Error, Fault, and failure with suitable example.

Q2. **[3]**

The Boiler control software (BCS) is required to offer several options. One of the options, C (for control), is used by a human operator to give one of three commands (cmd): change the boiler temperature (temp), shut down the boiler (shut), and cancel the request (cancel). Command temp causes CS to ask the operator to enter the amount by which the temperature is to be changed (tempch). Values of tempch are in the range -10..10 in increments of 5 degrees Fahrenheit. A temperature change of 0 is not an option. Selection of option C forces the BCS to examine variable V. If V is set to GUI, the operator is asked to enter one of the three commands via a GUI. However, if V is set to file, BCS obtains the command from a command file. The command file may contain any one of the three commands, together with the value of the temperature to be changed if the command is temp. The file name is obtained from variable F. Values of V and F can be altered by a different module in BCS. In response to temp and shut commands, the control software is required to generate appropriate signals to be sent to the boiler heating system. We assume that the BCS is to be tested in a simulated environment. The tester takes on the role of an operator and interacts with the BCS via a GUI. Answer the following:

- Identify the valid and invalid equivalence partitions for respective domain.
- How many strong equivalence classes will be there in total? (Count numbers only)

CI-10,BT

Q3. [3]

It is given:

$$3 \leq x \leq 7, \quad 5 \leq y \leq 9$$

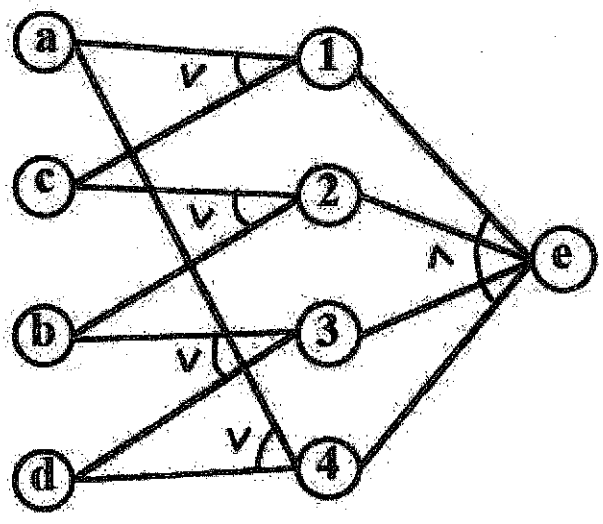
Generate two sets of tests, T1 by using unidimensional partitioning, and T2 by using multidimensional partitioning from the given ranges of x and y. Which of the following relations holds amongst T1 and T2 that you have created: T1 = T2, T1 $\subset$ T2, T1 $\subseteq$ T2, T1 $\supset$ T2, T1 $\supseteq$T2, and T1 $\neq$ T2? Provide justification to your answer.

Q4. [2]

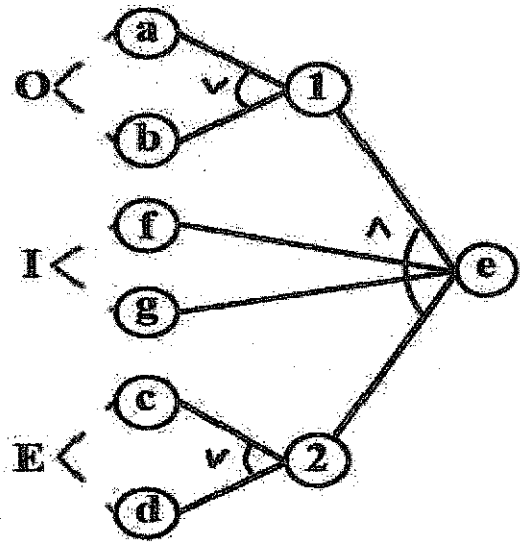
Assume postal rates for 'light letters' are: ₹25 up to 10 grams, ₹35 up to 50 grams, ₹45 up to 75 grams, and ₹55 up to 100 grams. Design the various test cases using Boundary values analysis and robustness boundary value analysis techniques.

Q5. [4]

Convert following given Cause-effect graphs into limited entry decision table.



(i)



(ii)