

UNIVERSITY OF MUMBAI
T.Y.B.Sc. INFORMATION TECHNOLOGY) (Semester– V) (Practical) EXAMINATION
OCTOBER 2014
SOFTWARE TESTING

Seat No. : _____

Max. Marks: 50

1.	Design the test cases for Boundary Value analysis of the following. Consider a program that prompts the user to input three numbers (say x, y, z) and the data type for input parameters ensures that these will be integers greater than 0 and less than or equal to 100. The program should then output the numbers in ascending order.	20
2.	Design the test cases for Equivalence Partitioning for question 1.	20
3.	Viva	5
4.	Journal	5

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1.	Design the test cases for Boundary Value analysis of the following. Consider a program for determining the largest amongst three numbers. Its input is a triple of integers and the numbers are in [1, 300]. The possible outputs would be largest amongst three numbers or invalid input.	20
2.	Design a web page with a two text boxes and two buttons. Write Selenium Script using IDE to enter Username and password and click the submit button. After the submit button is clicked, redirect it to the new page and compare its title. If the title matches, display the message “Title matched” in the output window.	20
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1.	Consider a simple program to classify a triangle. Its inputs is a triple of positive integers (say x, y, z) and the datatype for input parameters ensures that these will be integers greater than 0 and less than or equal to 100. The program output may be one of the following words: [Scalene; Isosceles; Equilateral; Not a triangle] Design the equivalence class test cases.	20
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1.	You have got the brilliant idea of setting up a company that sells testing services to software houses. Make a strategic plan for your company, taking into account the following issues: a. What is the testing process that will be followed in the company? b. What is the focus of the testing services? c. What kind of people are you going to hire as staff for the company? d. How are you going to validate that a testing project carried out in the company has been beneficial to the customer? e. What kind of automated tools will the company use?	20
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1.	The program reads an arbitrary number of temperatures (as integer numbers) within the range -60°C ... +60°C and prints their mean value. Design test cases for testing the program with the black-box strategy (Equivalence Partitioning and Boundary value Analysis).	20
2.	Design a web page with a two text boxes and two buttons. Write Selenium Script using IDE to enter Username and password and click the submit button. After the submit button is clicked, redirect it to the new page and compare its title. If the title matches, display the message “Title matched” in the output window.	20
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1.	When getting a person’s weight and height as input, the program prints the person’s body weight index. The weight is given in kilograms (as a real number, for instance: 82.0) and the height in meters (as a real number, for instance: 1.86). The body weight index equals weight divided by height squared: $\text{weight} / (\text{height} * \text{height})$. Design test cases for testing the program with the black-box strategy (Equivalence Partitioning and Boundary value Analysis)	20
2.	Design a web form using simple HTML. Record a selenium script while filling the form. Run the script. Generate Java Web driver code of the same.	20
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1.	An insurance agency has the following norms fixed to provide premium for its policy holders: a. If age \leq 25 and no claim has been made, premium increase will be \$50, else \$25. b. If age \leq 25 and number of claims made is one, premium increase will be \$100, else \$50. c. If age \leq 25 and number of claims made is 2-4, premium increase will be \$400, else \$200. d. If one or more claims are made, send warning letter. If the number of claims made is 5 or more, cancel policy. Draw the Decision table and design test cases for Insurance renewal.	40
2.	Viva	5
3.	Journal	5

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2.	Design a web form. Write Selenium IDE test case to open and fill the form. Generate Java Webdriver code of the script.	20
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1.	For the following liability procedure, design test cases using decision/Condition coverage. Procedure Liability(Age,Gender, Married,Premium) Begin Premium:=500; If(Age<25) and (Gender=Male) and (not Married) Then Premium=Premium+1500; Else (if (Married or Gender=Female)) Then Premium=Premium-200; if (Age>45) and (Age<65) Then Premium=Premium-100 End;	20
2.	Design a web form. Write Selenium IDE test case to open and fill the form. Generate Java Webdriver code of the script.	20
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1.	Write SRS for developing payroll system. Develop test plan as per IEEE 829 format for the same.	40
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1.	<p>Specifications: The software responds to input requests to change the display mode for a time display device. The display mode can be set to one of the four values: Two corresponding to displaying either time or date. The other two when altering either time or date. Four possible input requests: Change mode (CM) Reset (R) Time Set (TS) Date Set (DS) Change Mode (CM): Activation of this shall cause the display mode to move between “Display Time (T)” and “Display Date (D)” Reset (R): If display mode is set to T or D, then a “reset” shall cause the display mode to be set to “Alter time (AT)” or “Alter Date (AD)” modes. Time Set (TS): Activation of this shall cause the display mode to return to T from AT. Date Set (DS): Activation of this shall cause the display mode to return to D from AD. Draw the state transition diagram, possible transitions table, State table and write the test cases.</p>	40
2.	Viva	5
3.	Journal	5

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1.	For the following program, draw the path coverage diagram, determine cyclomatic complexity write the basis paths to be tested and the test cases. Euclid(int m, int n) { int r; if (n > m) { r = m; m = n; n = r; } r = m % n; while(r! = 0) { m = n; n = r; r = m % n; } return n; }	20
2.	Design a web form using simple HTML. Record a selenium script while filling the form. Run the script. Generate Java Web driver code of the same.	20
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1.	<pre>0 void quad_eqn (float A,B,C, Boolean Is_Complex) 1 { float Discrim = B*B-4*A*C 2 float R1,R2; 3 { 4 If Discrim<0.0 5 Is_Complex=true; 6 Else 7 Is_Complex=false 8 Endif; 9 If not Is_Complex 10 R1=(-B+Sqrt(Discrim))/(2.0*A); 11 R2=(-B-Sqrt(Discrim))/(2.0*A); 12 Endif; 13 End quad_eqn;} 14 }</pre>	20
	<p>For the above function, draw the following tables and write the test cases:</p> <ul style="list-style-type: none">a. Occurrence of variables and their categories.b. du pairs and their typec. All c-usesd. All p-uses	20
2.	<p>Design a web page with a two text boxes and two buttons. Write Selenium Script using IDE to enter Username and password and click the submit button. After the submit button is clicked, redirect it to the new page and compare its title. If the title matches, display the message “Title matched” in the output window.</p>	
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1.	<p>Consider the following code:</p> <pre> 1. int main (int MaxCols, int Iterations, int MaxCount) 2. { 3. int count = 0, totals[MaxCols], val = 0; 4. memset (totals, 0, MaxCols * sizeof(int)); 5. count = 0; 6. if (MaxCount > Iterations) 7. { 8. while (count < Iterations) 9. { 10. val = abs(rand()) % MaxCols; 11. totals[val] += 1; 12. if (totals[val] > MaxCount) 13. { 14. totals[val] = MaxCount; 15. } 16. count++; 17. } 18. } 19. return (0); 20. }</pre> <p>a. Create a directed control-flow graph for this code. b. Calculate the cyclomatic complexity. c. List the basis test paths that should be tested.</p>	20
2.	<p>Design a web page with a two text boxes and two buttons. Write Selenium Script using IDE to enter Username and password and click the submit button. After the submit button is clicked, redirect it to the new page and compare its title. If the title matches, display the message “Title matched” in the output window.</p>	20
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