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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

July 2023 Semester End Main Examinations

Programme: B.E. **Semester: VI**
Branch: Information Science and Engineering **Duration: 3 hrs.**
Course Code: 20IS6PCSTG **Max Marks: 100**
Course: Software Testing **Date: 12.07.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

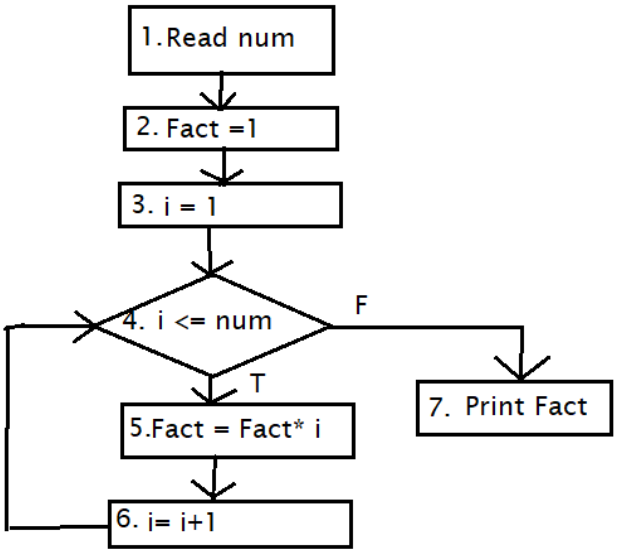
		UNIT - I	CO	PO	Marks
1	a)	Differentiate between Verification and Validation	*CO1*		**04**
	b)	Previously encountered faults are an excellent source of information in designing new test cases. Justify this statement by explaining the three different fault-based testing methods.	*CO1*		**06**
	c)	Identify 4 test scenarios for E-commerce website like "Amazon' & design 3 functional test cases each for any two scenarios using standard test case template	*CO4*	*PO3*	**10**
		OR			
2	a)	Justify how Test automation is beneficial over manual testing.	*CO1*		**04**
	b)	Apply and demonstrate any 3 Logic faults in a single program.	*CO2*	*PO1*	**06**
	c)	Identify 4 test scenarios for Booking.com website & design 3 functional test cases each for any two scenarios using standard test case template.	*CO4*	*PO3*	**10**
		UNIT - II			
3	a)	Illustrate the steps involved in code review process with a neat diagram	*CO1*		**06**
	b)	Analyze and generate test cases using normal boundary value analysis for an amusement park website which allows only those people with age (20-40) and height (140-160cms)	*CO3*	*PO2*	**06**
	c)	Design test cases for Triangle problem using weak robust Equivalence class testing by partitioning 3 input variables(a,b,c) into 4,3 and 2 classes respectively.	*CO4*	*PO3*	**08**
		OR			
4	a)	Analyze and create 2 mutants (along with code) for the below program. Design 2 test cases to identify whether the mutants are equivalent, killable or stubborn.	*CO4*	*PO3*	**07**

			<pre>#include <stdio.h>
			void main()
			{
			int i=0,upper=0,lower=0,digit=0;
			char ch[100];
			printf("Enter the String:\n");
			gets(ch);
			while(ch[i]!=0){
			if(ch[i]>='A' && ch[i]<='Z'){
			upper++;
			}
			else if(ch[i]>='a' && ch[i]<='z'){
			lower++;
			}
			else{
			digit++;
			}
			i++;
			}
			printf("lowercase letters: %d",lower);
			printf("\nuppercase letters: %d",upper);
			printf("\ndigits: %d",digit);
			}</pre>			

		b)	Consider a company "XYZ" portal allows the people with 5-10 years of experience and with expertise between 4-8 domains only to apply for a particular position. Analyze and generate test cases using robust boundary value analysis	*CO3*	*PO2*	**07**
		c)	Design test cases for Next Date problem using weak normal Equivalence class testing by considering portioning of Input domain of Month into 3 classes, date into 4 classes and Year into 3 classes.	*CO4*	*PO3*	**06**
			UNIT - III			

	5	a)	Design a data flow graph for the below code snippet.
			`int n,m`
			`sum=0`
			`Input n`
			`while(n>0)`
			`{`
			`m=n%10`
			`sum=sum+m`
			`n=n/10`
			`}`
			`Print sum`
				CO4	*PO3*	**06**

		b)	Analyze the below Data Flow diagram to find the factorial of a number and prepare the Definition Usage Table, DU Pair table and tabulate the test suite for feasible test inputs and their paths using All Definitions, All C-Uses, All P-Uses, All C-uses /Some P-uses and All P-uses/Some C-uses for variable **'i'**	*CO3*	*PO2*	**10**

						
	c)	A collaboration diagram shows the message traffic among classes in Object oriented testing. Illustrate the collaboration diagram for the ooCalendar application.	*CO1*		**04**
		UNIT - IV			
6	a)	Illustrate any six types of interface errors.	*CO1*		**06**
	b)	Apply appropriate System integration testing approaches which uses Stubs and Test drivers with an example each.	*CO2*	*PO1*	**08**
	c)	Imagine a bank "ABC" gives the interest rate on the fixed deposits (consider- Fixed deposit of 1,00,000/-) according to below age groups: Interest rate is 8% if the age of a person is > 60 years. Interest rate is 7% if the age of a person is 40-59 years. Interest rate is 6% if the age of a person is 20-39 years. Interest rate is 5% if the age of a person is <19 years. Design the appropriate test cases for the above criteria using equivalence class testing with the following columns given below: Test case number | Equivalence class being tested | Test value | Expected result	*CO4*	*PO3*	**06**
		UNIT - V			
7	a)	Imagine you are a part of User Acceptance testing team. Apply the pre-requisites required before the planning phase of User Acceptance testing begins.	*CO2*	*PO1*	**04**
	b)	Illustrate ISO 9126 quality characteristics	*CO1*		**06**
	c)	Describe all the McCall's quality factors and explain each of them.	*CO1*		**10**

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