SVKM
Mithibai College (Arts, Sci & Comm)

Programme: B.Sc (Computer Science) - (CBCGS)
Year: III/Semester V(Exam Year: 2023-2024)
Subject: SKILL ENHANCEMENT: SOFTWARE TESTING AND QUALITY ASSURANCE
Date: 28 Oct 2023 **Time: 10:30 am to 01:00 pm (02:30 Hrs.)**
Max. Marks: 75

FINAL EXAMINATION (Acad. Year:**2023-2024)**

Instructions:
1. This question paper contains 3 pages.
2. Answer to each new question to be started on a fresh page.
3. Figure in right hand side indicates full marks

Q-1 Attempt any FOUR Questions : **(20)**

A) Write any 3 different scenarios for positive and negative test cases (5)

B) Enumerate the different phases of Software testing with respect to SDLC. (5)

C) Explain Boundary Value Analysis with the help of a problem of checking if three given numbers qualify to make a triangle (5)

D) Discuss the levels of independence when it comes to the software tester. Also list some points relevant to choosing the tester (5)

E) Write at least 5 differences between Black box Technique and Whitebox Technique (5)

Q-2 Attempt any FOUR Questions : **(20)**

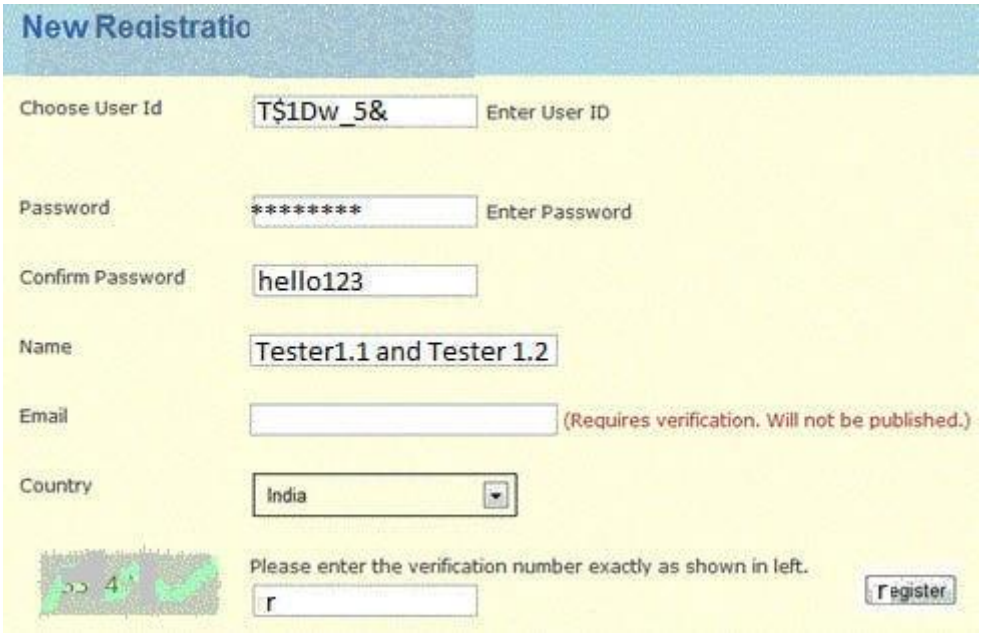
A) How does Function oriented metric work ? What are the factors considered in this metric and write the formula (5)

B) Write a note on Process Metrics and Product Metrics. (5)

C) How is Cyclomatic Complexity calculated ? Explain it with the help of a coding example. Discuss its limitations (5)

D) In a programming module, the number of unique operators present are 10, the number of unique operands are 5. Total number of operator occurrences and operand occurrences are 18 and 13. Calculate the Vocabulary, Program volume and Program Difficulty (5)

E) Observe the webpages given below and list out at least 5 problems you see in those pages. It may be a problem / defect / miscommunication / unwanted information / lack of clarity, etc. (5)



Q-3 Attempt any FOUR Questions : (20)

A) What is the role of SQA group ? List any 6 activities performed by the group. (5)

B) List and explain at least 5 Review Guidelines (5)

C) Enumerate the objectives of standards and write the importance of standards for business and consumers (5)

D) What is Statistical SQA ? List the steps in it. (5)

E) Explain Cause-Effect Diagram and Pareto Diagram with appropriate examples (5)

Q-4 Answer any THREE questions (15)

A) What is Object Oriented Metric ? List its measurable characteristics. **(5)**

B) Write at least 5 principles of ISO:9000 standard **(5)**

C) List at least 5 points related to verification **(5)**

D) Observe the following C code and answer the question that follow **(5)**

```
#include<stdio.h>
#include<conio.h>

1.  void main()
2.  {
3.  int a,b,c,x=0,y=0;
4.  clrscr();
5.  printf("Enter three numbers:");
6.  scanf("%d %d %d",&a,&b,&c);
7.  if((a>b)&&(a>c)){
8.          x=a*a+b*b;
9.  }
10. if(b>c){
11.         y=a*a-b*b;
12. }
13. printf("x= %d y= %d",x,y);
14. getch();
15. }
```

Create a Control Flow Graph using the labels given for each line for the above program and Identify the independent paths.

17 OCT 2022

SVKM'S
Mithibai College of Arts, Chauhan Institute of Science &
Amrutben Jivanlal College of Commerce and Economics (Autonomous)
Academic Year (2022-23)
Class:T.Y.B.Sc. Semester: V

Program: B.Sc. Computer Science **Max. Marks: 75**
Course Name: Software Testing and Quality Assurance **Time: 10:30 a.m to 1:00 p.m**
Course Code: USMACS502 **Duration: 2 hrs 30 minutes**
Date:

REGULAR EXAMINATION

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

1) This question paper contains 2 pages.
2) All Questions are compulsory.
3) Answer to each new question to be started on a fresh page.
4) Figures in brackets on the right hand side indicate full marks.
5) Assume Suitable data if necessary

Q-1	**Attempt any THREE Questions :**	**(21)**
a)	Explain any 7 desirable qualities of a Software project	(7)
b)	Write at least 7 differences between Black box Technique and Whitebox Technique	(7)
c)	Explain Boundary Value Analysis with at least 2 examples	(7)
d)	Consider the process of Hotel Room Reservation System. Enumerate the list of states and draw a state transition Diagram	(7)

Q-2	**Attempt any THREE Questions :**	**(21)**
a)	How does Function oriented metric work ? What are the different factors considered in this metric and write the formula and	(7)
b)	Explain Defect Life Cycle with a neat diagram	(7)
c)	How is Cyclomatic Complexity calculated ? Explain it with the help of a coding example. Discuss its limitations	(7)
d)	What is Halstead metric used for ? In a programming module, the number of unique operators present are 10, the number of unique operands are 5. Total number of operator occurrences and operand occurrences are 18 and 13. Calculate the Vocabulary, Program volume and Program Difficulty.	(7)

Q-3 Attempt any THREE Questions : **(21)**

a) What is the role of SQA group ? Explain the activities performed by the group. (7)

b) List and explain at least 7 Review Guidelines (7)

c) Explain Cause-Effect Diagram and Create a Cause-Effect Diagram for a Defective Product Delivery Problem (Hint : Different Errors may be the main cause). (7)

d) Elaborate on the Six Sigma process of Software Engineering (7)

Q-4 Answer any THREE questions **(12)**

a) Observe the table below and frame the conditions that are mentioned in the table. **(4)**

Conditions	**Rule 1**	**Rule 2**	**Rule 3**	**Rule 4**
Over 23?	F	T	T	T
Clean driving record?	Don't care	F	T	T
On business?	Don't care	Don't care	F	T
Actions				
Supply rental car?	F	F	T	T
Premium charge?	F	F	F	T

b) Write at least 4 principles of ISO:9000 standard **(4)**

c) Write at least 4 advantages of static testing technique **(4)**

d) Given the following, compute the FP when all complexity adjustment factors and weighted factors have average range (4, 5, 4, 10, 7). **(4)**

User i/p – 40, User o/p – 30, User inquiries – 25, Files – 4 External interfaces – 6