Subject: SQE(SE-309)

Roll# & Section SE-19076 (B)

Test(c) Module 1 [Marks:5]

Instructions: You can pick questions in any order but all parts of a question must attempt altogether

1.a Briefly explain SQA activities also explain the possible effect on software quality in absence of each activity.[2]

1.b Explain Quality Engineering ,Quality Assurance , Quality control and Testing with the help of a diagram.[2]

1.c Why it is important to prepare SQA plan for a project? Explain [1]

Subject: SQE(SE-309)

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Test(c) Module 2 [Marks:5]

2.a Explain Top down and bottom up testing approaches? At what testing level we should applied these approaches and why? Also Differentiate Alpha , Beta and Acceptance Testing.[2]

2.b **Refer Figure 2.b**Apply Basian path method to the following code. And design test cases.[2]

2.c Differentiate Load, Stress and volume Testing.[1]

```
IF A = 10  or
 IF B > C or
  IF C<8 then
   A = B
   ELSE
   A = C
  ENDIF
ENDIF
EndIF
Print A
Print B
Print C
```

Figure 2.b

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MODULE : 2

No. 2a:

TESTING APPROACH: This testing approach is used to find errors in a system. In this approach, the system is first tested as a whole to check if it has any faults. If any fault is detected, then further components of systems are tested.

BOTTOM-UP TESTING APPROACH: In this testing approach, all the modules are first tested individually and then they are integrated together to get tested as a whole system.

Alpha Testing: This testing is done in developer's environment before deploying the system to the client.

Beta Testing: This testing takes place in customer's or user's environment to ensure no fault is present after deployment of system.

Acceptance Testing: The system is given to the user few days before actual deployment and user is asked to report any errors occurring inside system. The errors are then rectified to deploy the system finally.

The bottom-up testing approach is check in beta testing mostly before integration of components. The Top down approach is used at system level.

QUESTION No. 2c:

Load Testing: Load testing is done by putting load on the system. When more number of users are simultaneously accessing the system, the system sometimes may get crashed. To avoid this crash load testing is done.

Stress Testing: When the system performs more than a specified number of tasks, the performance may lag and the system may misbehave. To avoid this lagging, the system is checked for stress testing.

Volume Testing: This testing is done when system is put to work with more number of tasks and more number of users.

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MODULE: 1

...N No. 01(a):

... Activities:

1.5

...epare a plan for SQA.
Start the development in accordance with the SQA plan.
Review if the work products are in compliance with the SQA plan.
Audit the software engineering process to assure SQA plan is being follou
Check the maintainance and report any issue that is found during the process to the senior manager.

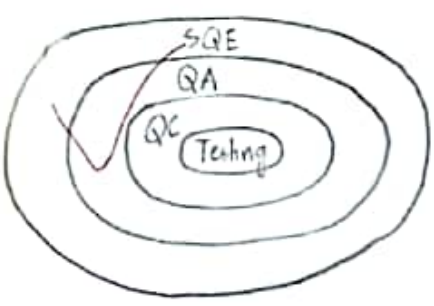
Effect of Absence of activities:

Without a proper plan, no system can be checked for validation as there is no scope.
The development, if not goes according to the plan, then the system is useless for client.
The milestones and work products assures that the development is being done adequately.
The processes validate the system development No validation of system would be discouraged by client.
If no reports are generated then the system would not be considered reliable and will get off the market.

QUESTION No. 01(b):

1

Quality Engineering: It is an engineering of how the system aims to identify, prevent and detect the defects to deploy the system as early as possible. The Quality control is done at product level and Quality assurance is done at process level. The Testing of system is done throughout the SDLC phases.



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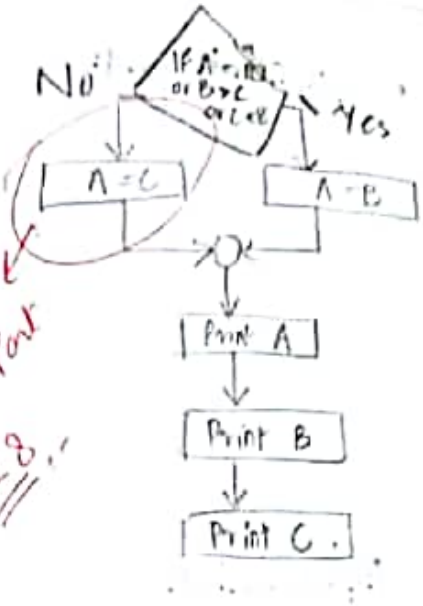
* QUESTION NO. 01(c):

- SQA Plan:

SQA plan is necessary for a project to keep a check of activities being followed throughout the SDLC while keeping the quality of system maintained and the errors are detected timely according to the plan. With a proper SQA plan, the methods, processes and models that are required for development of system are finalized and the system becomes reliable for a longer period of time.

01

QUESTION No. 2b :



This statement is only the part of C < 8.

Independent Paths:

1, 2, 4, 5, 6

1, 3, 4, 5, 6

$V(G) =$ Closed areas $+ 1$

$= 1 + 1$

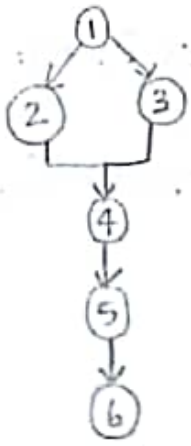
$= 2$

Total number of Paths

1, 2, 4, 5, 6

1, 3, 4, 5, 6

1.5



Control flow Graph

Test Cases:

For Path 1: (1, 3, 4, 5, 6)

$A = 10$, $C = 7$, $B = 8$

For Path 2 (1, 2, 4, 5, 6)

$A = 9$, $C = 90$, $B = 0$

Statements:

1. If $A > 10$ or $B > C$ or $C < 8$
2. $A = B$
3. Else $A = C$
4. Print A
5. Print B
6. Print C

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a) 1, 6, 7

b) 1, 2, 6, 7.

c) 1, 2, 3, 5, 6, 7

d) 1, 2, 3, 4, 6, 7

A = 10, B = 10, C = any no.

A = 10, B = 12, C = 11

A = 10, B = 8, C = 10

A = 10, B = 5, C = 6

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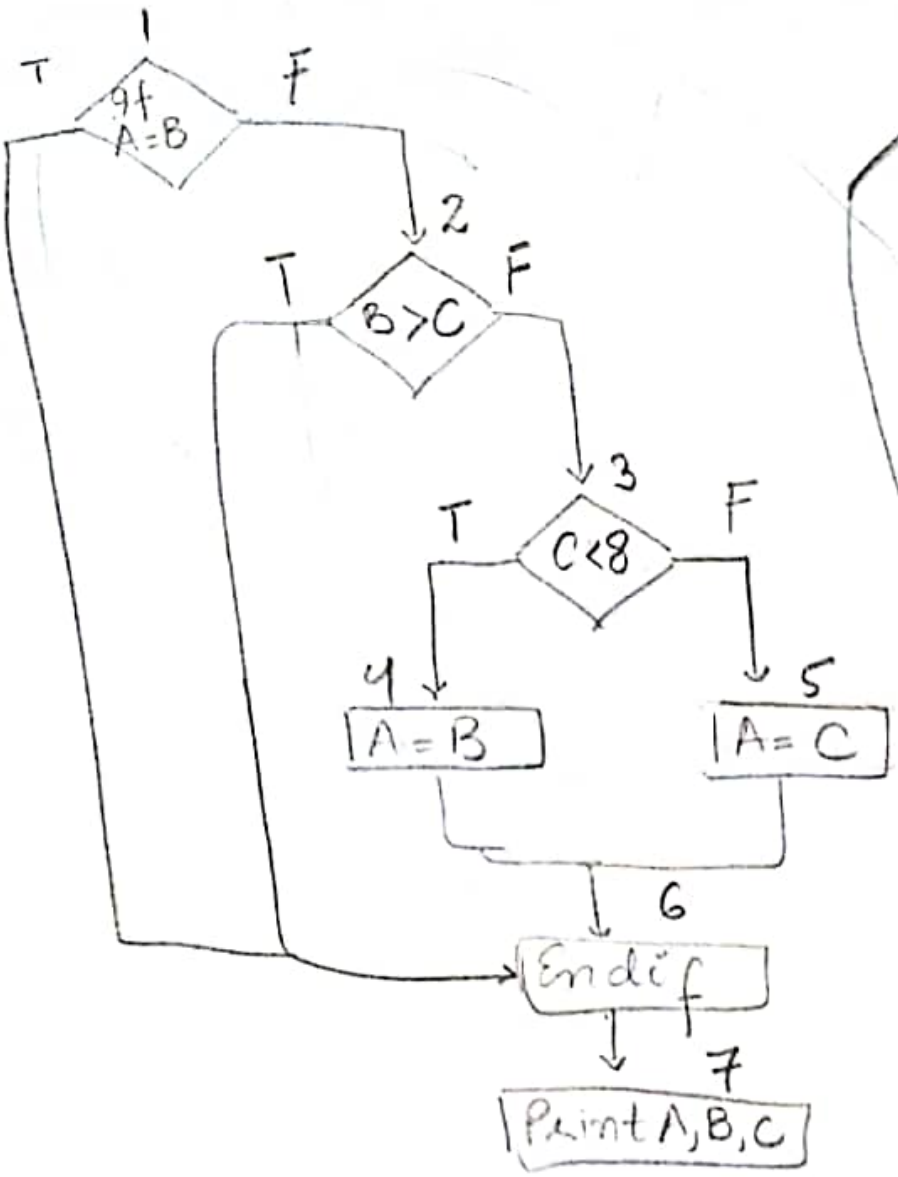

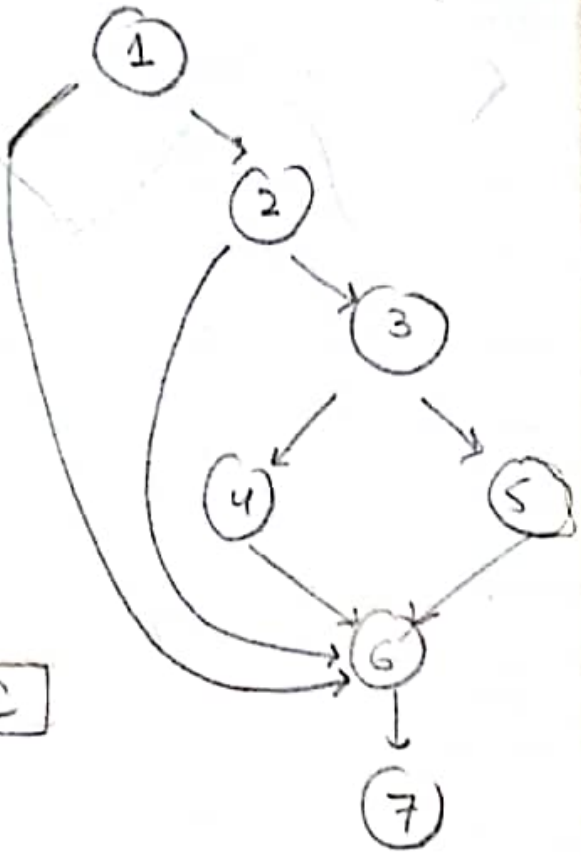

9 - 7 + 2

$\Rightarrow 2 + 2 = 4$

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