



# UNIVERSITY OF THE PUNJAB

Eighth Semester - 2017

Examination: B.S. 4 Years Programme : Roll No. ....

PAPER: Software Quality Assurance  
Course Code: IT-407

TIME ALLOWED: 2 hrs. & 30 mins.  
MAX. MARKS: 50

*Attempt this Paper on Separate Answer Sheet provided.*

## Short Questions (Marks 20)

*Each question is of 5 marks*

1. Differentiate "Measure" and "Metric" with example?
2. Name the main heads of a "test plan"?
3. Differentiate 'defect' and 'failure' with example?
4. Shortly explain the "Alpha Testing" and "Beta Testing"?

## Subjective Questions (Marks 30)

**Question 1: (10 Marks)**

Briefly explain Dromey's Quality Model?

**Question 2: (10 Marks)**

Explain "testing principles" in short?

**Question 3: (10 Marks)**

Write a short note on:

- A. Review Techniques
- B. ISO 9126 Model



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**PAPER: Software Quality Assurance**  
**Course Code: IT-407**

**TIME ALLOWED: 30 mins.**  
**MAX. MARKS: 10**

*Attempt this Paper on this Question Sheet only.*

## Objective Type Questions (Total Marks 10)

*Choose the best option:*

- Which testing is concerned with behavior of whole product as per specified requirements.  
A. Acceptance Testing  
B. Component Testing  
C. System Testing  
D. Integration Testing
- Software tester should be involved very early during development phase of a project.  
A. True  
B. False
- System Testing is a \_\_\_\_\_.  
A. Black Box Testing  
B. White Box Testing  
C. Gray Box Testing  
D. None of the above
- Beta testing is useful way of compatibility testing.  
A. True  
B. False
- Who is responsible for component testing?  
A. Software Tester  
B. Designer  
C. User  
D. Developer
- User Acceptance Testing is \_\_\_\_\_.  
A. White Box Testing  
B. Black Box Testing  
C. Gray Box Testing  
D. None of the above
- Which of the following is not the part of test plan?  
A. Scope  
B. Mission  
C. Objective  
D. Risk Right
- "The degree of a function to give right result" is known as \_\_\_\_\_.  
A. Reliability  
B. Correctness  
C. Scalability  
D. Maintainability
- Black Box Testing is only functional testing.  
A. True  
B. False
- Software Quality Control consists of the auditing and reporting functions of management.  
A. True  
B. False



**UNIVERSITY OF THE PUNJAB**  
B.S. 4 Years Program / Eighth Semester – 2019

Paper: Software Quality Assurance  
Course Code: IT-407 Part – I (Compulsory)

Time: 15 Min. Marks: 10

Roll No. in Fig. ....

Roll No. in Words. ....

Signature of Supdt.:

**ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.**  
**Division of marks is given in front of each question.**

**This Paper will be collected back after expiry of time limit mentioned above.**

Q.1. Encircle the correct option.

(10x1=10)

1. \_\_\_\_\_ Testing is performed by Developer?  
A. White BOX  
B. Black BOX  
C. Grey BOX  
D. UNIT testing
2. Internal details are hide in \_\_\_\_\_ Testing  
A. White  
B. Black  
C. Red  
D. Grey
3. Which statement is not True about SQA?  
A. Audits and reviews to be performed by the team  
B. Amount of technical work to be performed  
C. Evaluation to be performed  
D. Documents that are produced by the SQA team
4. Select the people who identify the document and verifies the correctness of the software.  
A. Project manager  
B. SQA team  
C. Project team  
D. All of the mentioned
5. Which of the following is not an External failure costs?  
A. Testing  
B. Helpline support  
C. Warranty work  
D. complaint resolution
6. Component testing is responsible of which of the person  
A. software tester  
B. designer  
C. developer  
D. User
7. The level of testing used to identify the defects  
A. Acceptance testing  
B. Integration testing  
C. Unit testing  
D. System testing
8. Test level is performed in which level.  
A. It depends on nature of a project  
B. Unit, System, Integration, Acceptance  
C. Unit, Integration, Acceptance, System  
D. Unit, Integration, System, Acceptance
9. Choose which effort is required for locating and fixing an error in operational program  
A. Efficiency  
B. Usability  
C. Maintainability  
D. Testability
10. Is the 100% Quality of a Software is achievable?  
A. Yes  
B. No  
C. Depend on tester  
D. Environment factor involve



**UNIVERSITY OF THE PUNJAB**

B.S. 4 Years Program / Eighth Semester – 2019

Paper: Software Quality Assurance Course Code: IT-407 Part – II

Roll No. ....  
Time: 2 Hrs. 45 Min. Marks: 50

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Short Questions (Marks 20)**

*Each question is of 5 marks:*

1. Write 3 difference between White Box and Black Box testing?
2. Why do we use Regression Testing?
3. What you understand from the term PROCESS Quality?
4. Differentiate 'validation' and 'verification'?

**Subjective Questions (Marks 30)**

**Question 1: (10 Marks)**

Explain in details the difference between "Quality Assurance" and "Quality Control" by taking relevant examples?

**Question 2: (10 Marks)**

Define heretical and non-heretical model. it in details?

**Question 3: (10 Marks)**

What is meant by Testing? How many types of testing are there? Define Alpha and Beta Test.



# UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Eighth Semester - Spring 2022

Paper: Software Quality Assurance

Course Code: IT-407

Roll No.

Arslan  
**Gebsky**

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

Q.1. Write short answers to the following questions.

1. Consider the following activities with their predecessors, duration (in days), and total cost. [5 marks]

Activity	Predecessor	Duration (in days)	Total cost
A	-	2	600
B	A	3	1200
C	B	3	1200
D	B	2	400
E	D	3	300

Find the cost/day for each activity

Activity	Cost/day
A	
B	
C	
D	
E	

2. The following metrics are either product (P), process (PR), or project (PJ) metrics.

Classify the following. (8 marks)

Metrics	P or PR or PJ?
1. Mean time to failure	
2. Defect Removal Efficiency	
3. Size	
4. Defect density	
5. Cost	
6. Customer satisfaction	
7. Schedule	
8. Cyclomatic complexity	

9. Development time	
10. Resources	
11. LOC	
12. Defect rate	
13. OO metrics	
14. Defects/KLOC	
15. Errors/KLOC	
16. Maintenance metrics	

3. What will be the output of the following script in Pytest? (4 marks)

```

@pytest.fixture(scope="session")
def func1(request):
    print("S1")
    def fin():
        print("S2")
        request.addfinalizer(fin)
    return f

@pytest.fixture(scope="function")
def func2(request):
    print("F1")
    def fin():
        print("F2")
        request.addfinalizer(fin)
    return b

def test_one(func1,func2):
    pass
def test_two(func1,func2):
    pass

```

4. Let's take an example where a Software Development Manager wants to analyze the top reasons which contribute to defect at the Coding Phase. To get the data, Manager will get the list of coding issues which contributed to defect from defect management tool. (6 marks)

Coding issue type	Frequency
Incomplete code review	10
Lack of technical expertise	25
Non adherence to coding standards	40
Coding errors	15
Others	2

Calculate the percentage of each Issue type by dividing frequency with TOTAL.

5. Considering the scenario in the last question (Question 4), calculate cumulative percentage (7 marks)

Q.2. Write detailed answers to the following questions. (3x10=30)

[10 marks] Part A

Consider the following code of bubble sort.

```
bubble_sort
void bubble_sort(long list[], long n)
{
    long c, d, t;
    for (c = 0; c < (n - 1); c++)
    {
        for (d = 0; d < n - c - 1; d++)
        {
            if (list[d] > list[d+1])
            {
                /* Swapping */
                t = list[d];
                list[d] = list[d+1];
                list[d+1] = t;
            }
        }
    }
}
```

Note: Exclude function header. Variable/array names and constant values/literals are considered as operands. Consider the rest of the things as operator.

N1 - total number of operators in a program

N2 - total number of operands in a program

Find n1 and n2.

n1: distinct number of operators

n2: distinct number of operands

Note: Don't consider pair of brackets as one entity. Count starting and ending brace/bracket separately. Exclude function header/signature in calculation.

[10 marks] Part B

Consider the database of player with:

1. Player Id
2. Player Name
3. Team Name
4. Age
5. Average Score

```
Database={
1["Ali","A",23,56],
2["Amna","B",22,66],
3["Bisma","C",23,58],
4["Aliya","D",24,53]
}
```

```
def read_player(payload):
    id=payload["Player_id"]
    if id in Database:
        entry=Database[id]
        return {"Code":200,
        "Response": {"Name":entry[0],"Team":entry[1],"Age":entry[2],"Average":
        entry[3]},
        "Message":"Read Operation Successful"}
    else:
        return {"Code":404,"Message":"Player does not exist"}
```





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