Institute of Information Technology
Jahangirnagar University
Professional Masters in IT

1st Trimester Special Final Examination, Summer 2018

Duration: 3 Hours
Course Code: PMIT – 6111

Full Marks: 60
Course Title: Software Testing & Quality Assurance

Do not write anything on the question paper.
There are **7 (Seven)** questions. Answer any **5 (Five)** of them.
Figures in the right margin indicate marks.

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1. a) Write the agile manifesto. Why agile methods was proposed? **4**
   b) Write the activities of Test-driven Development. Write its benefits. **4**
   c) How testing is done in agile environment? **4**

2. a) Draw the unit testing environment. **3**
   b) A web application has several functional components. To test the functionalities which tests are conducted from developers' and users' end? **5**
   c) What are the stages of Testing? What is smoke testing? **4**

3. a) Show the model of testing process. Why programmers' test is not enough for their code? **4**
   b) A system decomposition diagram is given in fig.1. Apply an appropriate testing strategy for the system. Justify your opinion. **4**
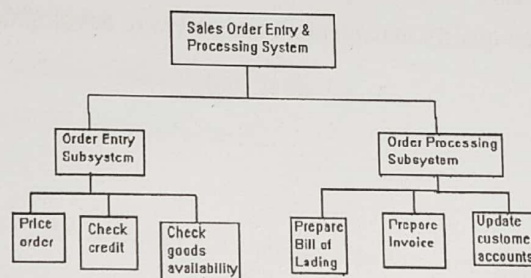

Fig. 1

   c) Show the acceptance testing process? Write its importance. **4**

4. a) Give example of different types of defects and priority of defects for any web based system. **4**
   b) Fill in the blanks: **5**
      i. When expected result of test mismatched with actual result of the application, this mismatch is called _____.
      ii. Defect _____ signifies how important it is to fix this defect.
      iii. A _____ is a special type of bar chart to show the defect type with the highest frequency of occurrence of defects.
      iv. _____ involve a set of steps, conditions, and inputs that can be used while performing testing tasks.
      v. The _____ is a measure of estimating the software testing size and effort.
   c) Show the defect life cycle. **3**

5. a) Suppose you need to give unique ID no consisting 7 digits for all your employees. Again age   5
        range of your employees are from 23 to 55. Find test cases using an appropriate technique.

    b) Show the definitions and uses for the program below.   3

    ```
    1. read (a, b);
    2. sum = a + b;
    3. if (a >= b)
    4.      then sub = a - b;
               div = a / b;
    5. else
    6.      sub = b - a;
            div = b / a;
    7. mul = a * b;
    8. print (sum, sub, mul, div);
    ```

    c) How many coverage can we calculate from testing? Write the factors for choosing a testing   4
        technique.

6. a) Explain quality assurance, quality control and testing concepts.   4
    b) Write the SQA goals and attributes.   5
    c) How can you develop quality standards for your organization?   3

7. a) When we need to apply experienced based techniques? Draw a decision table from the following 5
        story:

        "A customer requests a cash withdrawal. One of the business rules for the ATM is that the ATM
        machine pays out the amount if the customer has sufficient funds in their account or if the
        customer has the credit granted."

    b) Write the advantages of team work? Why integration is daily practice in agile methods?   4
    c) Show the relation between quality management and software development.   3