Institute of Information Technology
Jahangirnagar University
Professional Masters in IT

1st Trimester Final Examination, Summer 2022 | Intake: Spring & Summer, 2022
Duration: 3 Hours | Full Marks: 60
Course Code: PMIT 6111 | Course Title: Software Testing & Quality Assurance

There are 07 (Seven) questions. Answer any 5 (Five) of them.
Figures in the right margin indicate marks.

1. a) How scram works? What is the main drawback of sprint? 2+2
   b) Write test case before coding in test driven development on the following story. 4

> As a teacher, anyone can publish research interest and supervise not more than 5 students per session.
> As a student, anyone can request for supervision then get accepted if research interest matches with the teacher and teacher has less then 5 students assigned under his/her supervision.

   c) Mansion some agile practices. 4

2. a) Show the process of testing any software. 3
   b) How smoke testing works? 3
   c) Write one test condition for the following types of tests: 3
      i. Security testing
      ii. Recovery testing
      iii. Human factor testing
   d) Consider the following story. Mention the features you can test form the story. 3

> Kate is a nurse who specializes in mental health care. One of her responsibilities is to visit patients at home to check that their treatment is effective and that they are not suffering from medication side -effects.
> On a day for home visits, Kate logs into the MHC-PMS and uses it to print her schedule of home visits for that day, along with summary information about the patients to be visited. She requests that the records for these patients be downloaded to her laptop. She is prompted for her key phrase to encrypt the records on the laptop.

3. a) Explain how testing become larger as development proceeds. Why big bang approach cannot be applied for integration? 4
   b) Mention the types of interfaces. If any component A can send and receive parameters to module B then how this interface can be tested? 4
   c) Consider any five components of a system such as A, B, C, D and E. Where the pairs (A, B); (B, E); (C, D); (C, F) and (A, C) has interfaces between then. Apply an integration strategy and mention if there are any drawbacks. 4

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4. a) Suppose you are developing a system for student management. Give examples of the following types of requirements:
   i. Functional Requirements
   ii. Product requirement
   iii. Organizational requirement
   iv. External requirement

   b) Consider the following pseducode, find the coverage for three tescases. Can we get full coverage? 4

```
If (child age <=9)
      Print: You get 50% Discount.
If (child age <= 3)
      Print: You get free entry.
Else
      Print: Please pay the full entry fee.
```

   c) Mention the techniques of experience-based testing. Give example. 4

5. a) Draw the defect life cycle. How many ways any defect reached at closed status? 2+2
   b) Suppose you have an agile team with productivity and cost per month of 4 FPs and 50k. If total count is 500. Find function point, total time and cost. 2
   c) Give example of the following types of defects: 2
      i. High priority and low severity
      ii. Low priority and high severity
   d) Mention the types of risks. Give examples. 4

6. a) Draw the Quality review process. How review can be made easier with agile? 2+2
   b) How process and product quality depend on each other? Give example of product standard and process standard. 2+2
   c) Mention different types of faults with example in inspection checklist. 4

7. a) Show the stages of CMMI. What is continuous CMMI? 2+2
   b) Suppose you have total 120 FPs and total 500 defects were identify in a month. Find the following therms: (You can assume other parametters with respect to the total defect 500) 2×4=8
      i. Defect Density per FPs
      ii. Defect removal effectiveness (DRE)
      iii. Backlog management index (BMI)
      iv. Percent delinquent fixes

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