**Birla Institute of Technology & Science, Pilani**

**Work Integrated Learning Programmes Division**

**First Semester 2022-2023**

**Comprehensive Examination**

**(EC-3 Regular)**

Course No. : SE ZG552

Course Title : Software Testing Methodologies

Nature of Exam : Open Book

Weightage : 50%

No. of Pages = 1

# No. of Questions = 5

Duration : 2 ½ Hours

Date of Exam : 27/11/2022 (FN)

Note to Students:

1. Please follow all the *Instructions to Candidates* given on the cover page of the answer book.
2. All parts of a question should be answered consecutively. Each answer should start from a fresh page.
3. Assumptions made if any, should be stated clearly at the beginning of your answer.
4. Explain at least 5 important factors to be considered while going for test automation. List at least 5 prominent metrics used for measuring automation success. (5 + 5 = 10 marks)
5. Draw state diagram to find out 110101 binary sequence for the binary input. List the output sequence for the given input Din = 110101110101 1110101 11010101101011010101 (10 marks)
6. Take an example of any process that you are aware and list the various failure modes in that particular process. Conduct FMEA (Failure modes and effects analysis) and calculate RPN (Risk priority Number) for each identified failure modes. Also explain how these failure modes can be avoided which helps in designing the process well (10 marks)
7. Assume that you are going to start a company which is going to design and produce smart phones to capture the untapped market and to grab the market share.
8. List and explain the importance of various Components of House of Quality? (2.5 marks)
9. Using QFD(Quality Function Deployment) tool, capture all the functional and technical requirements and prioritize them. (2.5 marks)
10. Explain how you will tackle the competing market using QFD and explain how your product differentiates it from the existing competitors. (2.5 marks)
11. Explain the relation between the different technical characteristics? Explain how these technical characteristics helps in building the product features as per the customers requirement? (2.5 marks)
12. Password field accepts minimum 6 characters and maximum 10 characters. It also accepts numbers from 0 to 9. It doesn’t accept any special characters except “@” character. Design at least 10 different and effective test cases to validate the password field using Boundary Value Analysis and Equivalence Partitioning Testing techniques. Ensure that there are no duplicate scenarios while designing test cases. (10 marks)

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