Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

III SEMESTER MCA END SEMESTER EXAMINATIONS, NOVEMBER - 2018

SUBJECT: Quality Assurance & Testing [MCA 5103]

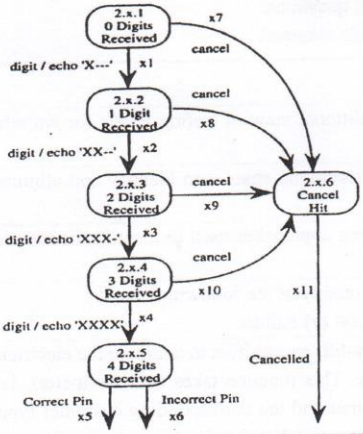
REVISED CREDIT SYSTEM
(24/11/2018)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL FIVE FULL** questions.
- Missing data may be suitable assumed.

1A.	With a neat diagram, explain the traditional view of testing levels for waterfall-life cycle model.	**5**
1B.	Discuss how the root cause analysis technique enables to identify and eliminate the process faults in quality assurance.	**3**
1C.	Write about the two fundamental testing approaches used to identify the test cases in software testing.	**2**
2A.	In software testing, describe the functionality of the following objects: **(i)** Stubs **(ii)** MM-Path **(iii)** Data **(iv)** Test **(v)** Failure	**5**
2B.	A function named **compute-electricity-bill** was written to compute the electricity bill by an electricity distribution company. This function takes two parameters, i.e., the number of units consumed by a customer and the corresponding customer type. The customer type is an integer value in the range 1 to 5 indicating whether the customer is domestic, industrial, commercial establishment, etc. The tariff depends not only the customer type, but also on the number of units consumed. The slabs for different charges based on the units consumed are 0 to 100 units, 100 to 200 units, 200 to 500 units, and 500 units and above. How many test cases are required for function compute-electricity-bill in case of: i. Weak equivalence class testing. ii. Strong equivalence class testing. iii. Strong robust equivalence class testing.	**3**
2C.	Draw the lever and dial finite state machines of saturn windshield wiper controller.	**2**

3A.	Justify the usage of boundary value analysis with function of two variables. Also discuss the limitations of boundary value analysis.	**5**
3B.	With an example of Graphical User Interface (GUI) discuss the currency conversion program in software testing.	**3**
3C.	A defect is an imperfection or deficiency in a work product where it does not meet its requirements or specifications. In software testing it is believed that "Defect is a good synonym for fault, as is bug". Justify your answer.	**2**
4A.	State and explain the triangle problem by constructing the decision table.	**5**
4B.	Differentiate between i. Normal boundary value testing and Worst Case boundary value testing. ii. Integration testing and System Testing	**3**
4C.	Specify the port events sequence for wrong pin 1235 in the first try. Correct pin is 1234.  	**2**
5A.	Explain the various methods of decomposition based integration testing with suitable examples.	**5**
5B.	Explain any three dependability properties that help to maintain the software quality.	**3**
5C.	Justify the roles of time and position in classification of interaction testing.	**2**