

Department of Computer Science & IT
The Islamia University of Bahawalpur

Date: Thursday, 08 June 2017

MSCS (1 st – Spring 2017-19) – Final-term	Subject: Software Engineering and Formal Specification
Course Instructor: Dr. Nadeem Akhtar	Time: 90 mins
CSIT-31012	Total: 50 Marks

Q. no. 1. Short Questions.

- a) Describe Software Simulation. Give examples.
- b) Differentiate between Black Box Testing and Transparent Box Testing. Give an example.
- c) Define Peer Reviewing. Differentiate between Peer Reviewing and Testing.
- d) How the *Correctness* of a software system can be improved?
- e) Define Model Checking.
- f) Define the following terms, *Pre-condition*, *Post-condition*, and *Invariant*.

(5 + 5 + 5 + 5 + 5 + 5 = 30)

Q. no. 2. Describe Safety Critical Systems. Differentiate between Formal Validation and Formal Verification of Safety Critical Systems.

(10)

Q. no. 3. State why the verification of parallel systems is challenging as compared to Sequential systems. Describe the formal verification of Parallel Systems.

(10)