

Department of Computer Science & IT
The Islamia University of Bahawalpur

Date: Tuesday, 22 Nov. 2016

MSCS (1st – Fall 2016-18) – Mid-term

Subject: Software Engineering and Formal Specification

Course Instructor: Dr. Nadeem Akhtar

Time: 75 min.

CSIT-31012

Total: 30 Marks

Question no. 1

Short Questions. Answer very briefly.

- (a) State briefly the benefits of using Formal approaches in the analysis, design, architecture and implementation of modern software?
- (b) Write the benefits of the principle “Modularity”? Give examples.
- (c) Define the term “Formal Verification of Software Correctness by using testing”. Give examples.
- (d) Define the term “Separation of Concerns”. Give examples.
- (e) Differentiate between *Verification* and *Validation* from formal perspective.
- (f) Differentiate between Simulation and Testing. Give examples.
- (g) What is a Reactive System? Give examples

(2 + 2 + 2 + 2 + 2 + 2 + 2 = 14 points)

Question no. 2

- a) Briefly define the relationship between quality attributes of Correctness and Reliability? Give examples.
- b) What are the advantages of using the abstraction? What are the disadvantages?

(4 + 4 = 8 points)

Question no. 3

- a) What is meant by the term “formal specifications”? Give examples
- b) State briefly the relationship between Formality and Rigor. Give examples.

(4 + 4 = 8 points)