**Bahria University, Islamabad Campus**

**Department of Computer Science**

**Quiz # 1**

**Class: BSIT-2B**

**(Fall 2019 Semester)**

**Course: Discrete Mathematics Date: 03/10/2019**

**Time Allowed: 20 mins Total Marks: 10**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enrolment #: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. What is tautology and contradiction? Determine whether the statements forms are logically equivalent or not? (3)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| p | q |  |  |  |  |
| T | T |  |  |  |  |
| T | F |  |  |  |  |
| F | T |  |  |  |  |
| F | F |  |  |  |  |

1. Verify the logical equivalences and supply a reason for each step. (3.5)

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| --- |
|  |

3. Determine whether the given argument is valid or invalid (3.5)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| p | q | r |  |  |  |
| T | T | T |  |  |  |
| T | T | F |  |  |  |
| T | F | T |  |  |  |
| T | F | F |  |  |  |
| F | T | T |  |  |  |
| F | T | F |  |  |  |
| F | F | T |  |  |  |
| F | F | F |  |  |  |