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| Manisa Celal Bayar University  Department of Computer Engineering, 2022-2023/Spring  CSE1120 Discrete Structures |
| Student ID:  Student Name: March 31, 2023  Signature: Quiz 1st Ed. (60 min) |

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|  | Q1 | Q2 | Q3 | Q4 |
| *Learning Outputs* | **1** | **1** | **2** | **2, 3** |
| *Grade* |  |  |  |  |

1. A witness to a hit-and-run accident tells the police that the license plate of the car in the accident, which contains three letters followed by three digits, starts with the letter A and contains both the digits 1 and 2. How many different license plates can fit this description? (20 pts)

**Answer:**

1. A student is to answer seven out of 10 questions on examinations. In how many ways can he make his selection;

**a)** If he must answer the first two questions? (10 pts)

**Answer a)**

**b)** If he must answer at least four of the first six questions? (10 pts)

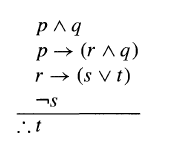
**Answer b)**

1. Show that following argument is a tautology by using truth tables. (20 pts)

**a)**

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**b)** Establish the validity of the following argument by using rules of inference. (20 pts)



**Answer:**

1. Assume that p1, p2, p3, p4 denote the premises. Determine whether the argument is valid. (20p)

p1: Andrea can program in C++ or she can program in Java.

p2: If she can program in C++, then she will apply to the academy.

p3: She did not apply to the academy.

p4: Therefore, she programs in Java.

**Answer:**