**STATISTICS ASSIGNMENT NO.3**

**Question 1**

Given that seasons are equally likely and all 4 seasons (winter, spring, summer, fall) occur at least once each among their birthdays

Total outcomes: Each person is allotted a season out of 4. Hence 48 possibilities

Number of Outcomes that one or more season has no student having their birthday:

Using Inclusion and Exclusion, 4C1\*38 - 4C2\*28 + 4C3\*18

Probability that one or more season has no student having their birthday:

(4C1\*38 - 4C2\*28 + 4C3\*18 ) / 48 = 0.377

Required probability that all 4 seasons (winter, spring, summer, fall) occur at least once each among their birthdays:

1-0.377=**0.623**

**Question 2**

Using inclusion exclusion:

=1-(P()……..+P()

= 1 -

= 1