**Question 4 Explanation:**

We are going to conduct a Test of Independence using Chi-Square test with Contingency table

**Step 1**

**Make two Hypothesis one contradicting to other**

* **Null Hypothesis:** µ1=µ2 = µ3 = µ4
* **Alternative Hypothesis:** At least One of them is Different

**Step 2**

Decide a cut-off value

* Significance 5%
* Alpha = 0.05

**Step 3 (PYTHON CODE)**

**Step 4**

Comparing Evidence with Hypothesis

Compare p\_value with 'Alpha '(Significance Level)

If p\_value is > Alpha we fail to reject Null Hypothesis because of lack of evidence

If p\_value is < Alpha we reject Null Hypothesis

**ANSWER:**

Significance=0.050, p=0.425

Sine p>Alpha, Null Hypothesis is accepted.

Therefore, they are independent events and the defective percent doesn’t vary by centre.