Department of Mathematics and Statistics KFUPM

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MATH560 Quiz2 **Time: 30 min**

Name: ----------ID: ----------

A product developer is investigating the tensile strength of a new synthetic fiber that will be used to make cloth for men's shirts. Strength is usually affected by the percentage of cotton used in the blend of materials for the fiber. The engineer conducts a completely randomized experiment with three levels of cotton content (P1, P2, P3) and replicated the experiment six times. The data are shown in the following table. Assume non-normality for this dataset.

P1	P2	P3
10.29	12.21	11.41
12.14	14.59	11.54
10.50	13.25	8.96
10.46	12.74	8.11
10.41	12.20	8.01
10.98	19.27	8.00

a). The engineer believes that there is no significant difference between the median tensile strengths of P1 and P2. Based on the conclusion of part(a), choose an appropriate test to test the engineer's belief. Use $\alpha = 0.05$.

H0: ----------

H1: ----------

Level of significance: ---------- ----------

Name of the test: ----------

Value of the test statistic: ----------

P-value: ----------

Decision: ----------

Conclusion: ----------

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b). The engineer further believes that there is no significant difference among the median tensile strengths of P1, P2.and P3. Choose an appropriate test to test the engineer's belief. Use $\alpha = 0.05$.

H0: ----------

H1: ----------

Level of significance: ---------- ----------

Name of the test: ----------

Value of the test statistic: ----------

P-value: ----------

Decision: ----------

Conclusion: ----------