**جامعة الملك سعود الاختبار الثاني**

**كلية العلوم الفصل الثاني 1430 / 1431**

**قسم الإحصاء وبحوث العمليات مقرر105 احص**

**الأحد 9 / 6 / 1431 هـ الوقت: 8.00 –9:30**

**اسم الطالبة : ---------------------------------------------------------------------------**

**رقم الطالبة : ---------------------------------------------------------------------------**

**رقم الشعبة : ----------------------------- رقم التسلسل : -------------------------------**

**أستاذة المقرر : -------------------------------------------------------------------------**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Question*** | **1** | **2** | **3** | **4** | **total** |
| ***Degree*** |  |  |  |  |  |

***Good Luck***

**Answer the following questions:**

**Question (1)**

A random sample of 16 persons traveled to Egypt for tourism, we found that the average money they paid per day is 110 $ and standard deviation 18 $. if we are interested to measure the money they paid per day. Test whether the mean of money they paid is more than 100 Dollars per day Assuming that it follows the normal distribution

1. The hypothesis is:
2. The test statistic is:
3. The value of statistic is:
4. The decision is:
5. The type I error is:
6. Reject when it is true
7. Reject when it is false
8. Accept when it is true
9. Accept when it is false
10. None of these

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**Question (2)**

If we take two random samples of students. The first sample of size 125 boys and we recorded that 105 of them are succeeded in all courses . the second sample of size 150 girls and we recorded that 120 of them are succeeded in all courses. Test whether the proportion of successful of boys different from the proportion of successful of girls at

1. The hypothesis is:
2. The test statistic is:
3. The value of statistic is:
4. The decision is:

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**Question (3)**

If we have two factors A and B, where the factor A consists of 4 categories while the factor B consists of 3 categories. Complete the following ANOVA table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Source** | **DF** | **SS** | **MS** | **F** |
| **Factor A** |  | **210** |  |  |
| **Factor B** |  |  | **32** |  |
|  | **6** | **100** |  |  |
| **Error** |  | **240** |  |  |
| **Total** | **35** | **614** |  |  |

Is there exist interaction between the factor A and the factor B at

1. The hypothesis is:
2. The test statistic is:
3. The table value is:
4. The decision is:
5. Can we make any other test or not? Why?

**Question (4)**

A random sample of 250 women from different areas and give them 4 types of diets, then we get the following results:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Types of**  **diets**  **Areas** | **A** | **B** | **C** | **D** |
| **North** | **20** | **18** | **12** | **17** |
| **South** | **6** | **22** | **15** | **13** |
| **East** | **4** | **6** | **14** | **11** |
| **West** | **10** | **19** | **23** | **40** |

Is there is a relation between the type of diets and the area where the women live at ? Use the giving results from the computer .

1. The hypothesis is:
2. The test statistic is:
3. The statistic value is:
4. The table value is:
5. The decision is:

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End of Questions