**EXST7015 : Daily Design Question 17**

**Carefully read the description of the experiment below. Be prepared to answer the questions that follow the design description as a class quiz.**

**A food science student wants to evaluate the levels of toxicity of baby food products. He decides to use techniques developed by researchers of the Consumers Union. This involves calculating a "Toxicity Index" (TI) that is based on frequency of detection of toxins as well as the mean concentration and toxicity of the residues found in food.**

**The student is particularly interested in comparing toxicity between major food groups. He obtains a list of all of the types of cans and jars of baby food produced by one of the largest national brands. From among the hundreds on the list he establishes 3 major food groups of interest. The major groups are (1) meat, (2) vegetables and (3) fruit. From each group he randomly chooses 4 products. For example, in the vegetable group he got "strained squash", "potato pure", "carrot medley", and "broccoli". The meat group included "lamb stew", "turkey pie", etc.**

**Measurements of the TI mentioned above are taken on five randomly chosen jars from each of the 4 products from each of the 3 main groups. The investigator is interested in both within group and between group differences. The dependent variable is the value of the TI.**

**Questions:**

**What is the treatment arrangement for this experiment?**

**(a) single factor (b) factorial (c) nested**

**What is the experimental design for this experiment?**

**(a) CRD (b) RBD (c) LSD (e) Split-plot (d) Repeated Measures**

**Does it seem to you that the treatments are fixed or random?**

**(a) fixed (b) random**

**What is the experimental unit for this experiment?**

**(a) student (b) toxicity (c) Toxicity Index (TI) (d) cans or jars (e) groups**

**What is the sampling unit for this experiment?**

**(a) student (b) toxicity (c) Toxicity Index (TI) (d) cans or jars (e) groups**

**What is the dependent variable for this experiment?**

**(a) student (b) toxicity (c) Toxicity Index (TI) (d) cans or jars (e) groups**

**If the design is RBD, what are the blocks?**

**(a) student (b) toxicity (c) Toxicity Index (TI) (d) cans or jars (e) groups**

**How many degrees of freedom are available for testing the treatments?**

**Enter the correct value here: _____**