**UNIVERSITY OF ATHENS**

**Department of Economics**

**Graduate and UA DPhil Programs**

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**Course: Development Microeconomics**

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**Review questions, problems**

1. Suppose you are designing a sample survey of adults in a region that has three cities with populations (of adults) of 100000, 50000 and 40000 respectively, and 100 villages in rural areas with a total adult population of 210000. a) What size sample would you choose under a simple random sampling (SRS) design to obtain 2% accuracy? How would you adjust the sample size if you expected a 10% nonresponse rate? b) How would you allocate your sample to improve the precision of the estimate of the population mean? How would you split your sample under a proportional stratification design? c) How would you allocate your sample to get a precise estimate of the difference between urban and rural areas, assuming that the cost of obtaining a questionnaire in rural areas is 4 times as high as the similar cost in urban areas? d) Suppose that you decided to sample 20 villages. How would you choose the villages so that each adult in every village has equal probability of being selected?
2. Suppose you have a fixed budget for a survey in a region and a given sample of 400 households that you must interview. Suppose that your region is large and contains many villages. Since your budget is fixed you have the choice of sampling many villages with few households per village or few villages with many households per village. How would you decide on your sampling strategy?
3. Suppose that you are interested in estimating the human capital of households, and you are interviewing households. a) Who would you interview in each household? b) What type of question would you ask if you are interested in obtaining a quantitative estimate of the level of human capital of the household? (state two or three questions, with the options that you would give the respondent)
4. Suppose that you are designing a survey in an area that has 600.000 people according to the latest census. People live in 4 provinces, each one of which has the following number of villages and households.

Province number 1 2 3 4 Total

Number of Villages 30 50 40 80 200

Number of Households 3000 45.000 20.000 32.000 100.000

Suppose that you have decided to have a sample of 1000 households.

1. How would you allocate the sample among provinces under a proportional stratification design?
2. Suppose that you decide to sample 10 households in each village that you visit. How many villages will you choose from each province under the above proportional stratification system?
3. How would you choose the villages within each province so as to assure an EPSEM design? (just discuss the methodology and procedures)
4. How would your design differ (in other words how would you allocate the sample) if your main interest was to study differences in the characteristics between the provinces?
5. Suppose you are doing an expenditure and consumption survey on households in a rural area in a developing country.
6. Discuss how you would define the household, and who you would try to talk to in the household.
7. Discuss the advantages and disadvantages of doing a survey based on recall, versus one based on actual measurements.
8. If you conduct a survey based on recall, discuss the recall period you would use to obtain expenditures on food, clothing, and refrigerators.
9. Consider a village in a poor country composed of several households. Each household has a farm, and farm income is subject to of random shocks, some of which are idiosyncratic, namely affecting only a particular household, while others ar covariate, namely affecting the whole village.
10. Discuss what perfect insurance would mean in this context, and how you would test it.
11. Suppose that the shocks to each farmers’ income are of two types, good and bad harvests, and the magnitude of a good and bad harvest is the same for all farmers that have them. Discuss the limits to perfect insurance imposed by information about the production. Is an insurance system more likely if the difference in income between the good and bad states is large of if the difference is small?
12. Consider the incentives of a farmer to participate in a village based insurance system. Are these incentives larger when the social sanctions about not participating are larger or not? Are the incentives larger when the difference between good and bad harvests are larger?
13. i) Explain and give an example of the notion of risk aversion. Suppose that a person is indifferent between having 1000 money units in the bank at 10 percent interest and giving out a loan of 1000 units at interest rate 100 percent with a probability of default equal to 0.4. What is this person’s risk premium?
14. Explain in words the idea that consumption credit can induce more investment and hence growth.

8. Suppose that you have identified that the availability of credit is a serious constraint to investments of small scale and poor farmers in a low-income economy, and that the current sources of credit to them are available from informal sources (namely not from banks or other formal institutions) and at very high interest rates compared to those prevailing in formal credit markets. Suppose that the agrarian structure is such that there are both poor and rich farmers in the country. Suppose that you wish to improve the amount of credit available to the poor farmers. Discuss what type of policy you would recommend that the government follows to enhance the availability of credit to these poor farmers, and what problems it may encounter in its application. Discuss the assumptions under which your recommendations are valid.

9. Explain in words the idea that consumption credit can induce more investment and hence growth.

How can credit act in such a context, and why can it induce growth?

Is there any difference between consumption and production credit in the context of a low level agrarian economy?

10. If people have different costs of default, such that for each person there is a threshold repayment burden that they will always want to default upon, explain why loans above a certain size will never be offered by any lender, even with very high risk premiums built into the rate of interest.

11. An expansion of credit from formal financial institutions to large informal lenders will increase competition among such lenders and improve the terms of credit for small borrowers with no access to formal credit. Discuss.

12. Discuss the main problems with agricultural crop insurance. Pay particular attention to to the problems of correlation and information. Using these concepts, comment on the possibility of a two tier system in which a giant insurance company makes insurance payouts to the village as a whole, while the village council decides on how to allocate the payouts to individual residents.

13. Suppose that we find that temporary income shocks (such as those due to weather fluctuations) have small effects on the consumption of the households. Then this is prima facie evidence that households can smooth such shocks, but the smoothing may arise from self-insurance, credit, or mutual insurance. If you have data on consumption and income for the household over several periods of time, discuss how you might use the intertemporal data to distinguish between these three sources of smoothing.