Paper 43

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3. Consider the following scenario.

You are asked to carry out a survey to discover the career intentions of 700 students aged 16-19 in a sixth form college. You have been given three lists, each giving the name, gender, date of birth, and the courses studied for the students on that list.

List I contains all 380 students who are studying at least one A level; List II contains all 170 students not on List I who are studying vocational courses; and List III contains all the remaining 150 students.

You are going to collect data using a questionnaire, and you can afford to survey only 50 students.

(a) With reference to this scenario, write brief notes about

   (i)   simple random sampling   [3]
   (ii)   stratified random sampling   [3]
   (iii) quota sampling.   [3]

Your notes should include a brief description of how the sampling method might be used in this situation and either an advantage or a disadvantage it might have.

(b) Decide which is the most appropriate sampling method and give reasons for your choice.   [3]

4. In an experiment subjects were asked to judge a short video film for 'gratuitous violence'. The film was divided into 12 scenes and subjects indicated which scenes they thought were gratuitously violent. The experimenter predicted that females would judge more scenes to be gratuitously violent than males would.

Data: Number of scenes judged to be gratuitously violent out of 12

Males:	5	6	4	3	7	4	4	3	1	3
Females:	7	9	8	2	5	10	7	7	6	8

(a) State the null and alternative hypotheses.   [2]

(b) Which is the most appropriate test for the experimenter to use to test the prediction? Give reasons for your answer.   [2]

(c) Carry out the test, and present your conclusion clearly.   [5]