

Statistical Sampling – 2021/20 GCE Statistics Mathematics A**1. Nov/2021/Paper_H240/02/No.11(a _ c)**

Zac is planning to write a report on the music preferences of the students at his college. There is a large number of students at the college.

(a) State one reason why Zac might wish to obtain information from a sample of students, rather than from all the students. [1]

(b) Amaya suggests that Zac should use a sample that is stratified by school year.

Give one advantage of this method as compared with random sampling, in this context. [1]

Zac decides to take a random sample of 60 students from his college. He asks each student how many hours per week, on average, they spend listening to music during term. From his results he calculates the following statistics.

Mean	Standard deviation	Median	Lower quartile	Upper quartile
21.0	4.20	20.5	18.0	22.9

(c) Sundip tells Zac that, during term, she spends on average 30 hours per week listening to music.

Discuss briefly whether this value should be considered an outlier. [3]