6. A large company surveyed its staff to investigate the awareness of company policy. The company employs 6000 full-time staff and 4000 part-time staff.

(a) Describe how a stratified sample of 200 staff could be taken.

(3)

(b) Explain an advantage of using a stratified sample rather than a simple random sample.

(1)

A random sample of 80 full-time staff and an independent random sample of 80 part-time staff were given a test of policy awareness. The results are summarised in the table below.

	Mean score $(\bar{x})$	**Variance of scores** (s^2)
Full-time staff	52	21
Part-time staff	50	19

(c) Stating your hypotheses clearly, test, at the 1% level of significance, whether or not the mean policy awareness scores for full-time and part-time staff are different.

(7)

(d) Explain the significance of the Central Limit Theorem to the test in part (c).

(2)

(e) State an assumption you have made in carrying out the test in part (c).

(1)

After all the staff had completed a training course the 80 full-time staff and the 80 part-time staff were given another test of policy awareness. The value of the test statistic z was 2.53

(f) Comment on the awareness of company policy for the full-time and part-time staff in light of this result. Use a 1% level of significance.

(2)

(g) Interpret your answers to part (c) and part (f).

(1)

(Total for Question 6 is 17 marks)