

**Comments** 18 students sat this exam paper. The average overall mark was 58.3%.

Question 1 - This was the most popular question; 15 students attempted it. The average mark awarded was 12.0/20. The highest mark was 14/20 and the lowest 4/20. In part b), candidates did not recognise that the difference between execution time on one core for the two implementations was probably due to scheduling costs; implementation B has two parallel loops, both of which have to be scheduled, while implementation A has only one. This also suggests that the sequential reference time should be exactly 0.3 seconds, making the ideal times much easier to calculate. No-one identified a plausible source for the unknown overheads after non-parallel code and memory access have been accounted for. Marks were mostly lost for inaccurate analysis of the lower triangular matrix multiplication in part c); please note that the sample answer given for this is wrong about which of L and M are accessed stride-1.

Question 2 - Only 5 candidates attempted this question. The average mark was 9.8/20. The highest mark was 15/20 and the lowest 6/20. Marks were mostly lost because analysis was inaccurate.

Question 3 - This was the second most popular question; 14 students attempted it. The average mark was 11.93/20. The highest mark was 16/20 and the lowest 9/20. Marks were mostly lost because analysis was inaccurate.

Question 4 - Just 2 candidates attempted this question. The highest mark was 15/20 and the lowest 9/20. Marks were mostly lost due to inaccuracies in the answers. Part d) required knowledge additional to that provided in the course, but one candidate provided a valiant attempt at an answer.

Some candidates provided answers to more than 2 questions. Where this happened, all answers were marked as normal and the 2 highest marks were returned as the outcome. The numbers of answers appearing above exclude the answers discarded in this process.

---