Examination Feedback for EEE6207 – Advanced Computer Systems
Spring Semester 2015-16

Feedback for EEE6207 Session: 2015-2016

Feedback: Please write simple statements about how well students addressed the exam paper in general and each individual question in particular including common problems/mistakes and areas of concern in the boxes provided below. Increase row height if necessary.

General Comments:

Question 1:

Part (a) was generally well done although some of the descriptions of the copy-on-write mechanism talked about copying registers; registers only have meaning when the program is executing and are not relevant in this context.

The description of process termination was done poorly by many who rambled on, often inaccurately, about zombie states. In fact, zombie states are *part* of the UNIX process termination and should be included in a full description of the termination mechanism; the question was really asking for a description of the signal-based mechanism by which the kernel terminates a process. Ultimately this does lead to a zombie state that is not the whole story, only the end of it.

The section on Java Virtual machines as well done.

Question 2:

The first section about the motivation for a journalling file system was generally answered well although a significant number of people only discussed loss of power – the rather more common problem is a *crash* of the operating system, which is not the same thing. There was one rather eccentric answer which discussed processor caches!

Description of the redo journalling system was generally well done although a couple of answers stated that a crash during the writing of the transaction to the journal file is recoverable – it is not! Crash here means that data is irrecoverably lost.

Interrupting and dispatch latencies were generally well dealt with, apart from a few confused answers.

Similarly, discussion of pre-emption in real-time kernels was good; answers to the section on priority inversion were very good.

Question 3:

There was a problem with Q3 – there should be feedback from the input to D to the input to C (with a multiplexer here). Most people who did this question assumed that it should have been there and worked accordingly. For those people for whom it presented a problem, leniency was shown. Within this constraint, part a was answered reasonably well. In part b, some people proposed changes to the system to improve performance because the question says ‘to get as much performance out of the system as possible’ – not to make changes to the system to improve performance. The key was to recognize that by switching the function of C to introduce a NOP, the two consecutive uses of D can be split up. Overall, however, the question was reasonably well answered.

Question 4:

Fewer people did this question and those that did generally did not give good answers.