(1) In the following sentence: “The long-term scheduler is the main component that controls ________ in multitasking operating systems”, fill out the blank by a phrase (sorry, it’s not a “word”) that best fits to the blank.

“degree of multitasking”

(2) Show a sketch of the integration of the short-term, medium-term, and long-term process scheduling as a directed state-transition diagram.

```
Three Different Layers of Process Scheduling

New  |  Ready  |  Running

<table>
<thead>
<tr>
<th>Blocked</th>
<th>Medium-term Scheduling</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term Scheduling</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Short-term Scheduling
```
(3) What is “Blocked” state in “the short-term process scheduling”?

It is the state for the processes that have been started and executed, but those that are currently waiting for some events, mostly I/O calls (such as inputs from keyboard and hard drive or output to a printer).

(4) How does “SRTF” process scheduling algorithm work?

SRTF is a preemptive scheduling algorithm which chooses the next process based on processes’ shortest remaining running time. When another process is submitted for execution while the current process is running, the current process will be preempted and the processor will be assigned to the new process that has the shorter process remaining time.

(5) What is the “non-preemptive process scheduling”?

Non-preemptive process scheduling is a type of process scheduling that allows a process to hold a processor until either the process completes or voluntarily releases a processor once a processor is assigned to a process (i.e., a process will never be forced to release a processor it holds).