#1: Show the memory hierarchy.

#2: What is the trade-off problem in the memory hierarchy?

#3: What is “external memory fragmentation”?

#4: How does “external memory fragmentation” happen?

#5: Why is “memory external fragmentation” a serious problem?

#6: What is “compaction”?

#7: What are the problems in compaction?

#8: Where in the memory hierarchy “virtual memory” exists?

#9: What is “virtual memory”?

#10: What are the three advantages in “virtual memory”?

#11: What is “logical memory address space”?

#12: What is “page fault”?

#13: What is “valid flag” used in virtual memory for?

#14: Sketch the contents in VMT (virtual memory table).

#15: What is the primary problem in virtual memory?

#16: What is “the internal memory fragmentation”?

#17: How is “dirty flag” used in virtual memory for?

#18: What is “demand paging”? What is the primary advantage?
#19: What is “locality in memory reference”? What are the two different types of “locality”?

#20: What does “TLB” stand for?

#21: In the virtual memory (as we discussed in the classroom), how many disk accesses can happen in the worst case?

#22: Sketch the structure of “segmentation table (or “segmentation descriptor table”)”.

#23: What is the advantage of using segmentation?

#24: How is “segmentation fault” caused?

#25: Which of “page fault” or “segmentation fault” is fatal?

#26: What is “pipeline memory accesses”? What is “memory interleaving” (make sure to emphasize the difference from “pipeline memory accesses”)?