(1) In many real-time process scheduling algorithms, determinism and responsiveness are in a trade-off relationship. Describe (explain) how they are in a trade-off relationship (10 points).

To keep the determinism under control, we need to use pre-emptive real-time scheduling (otherwise it is impossible to control determinism even for high-priority processes). However, preemptive scheduling lets responsiveness out of control (except for the highest-priority process). As a result, it is impossible to control both responsiveness and determinism.

(2) What is “static real-time scheduling” (10 points)?

Static real-time scheduling is a class of real-time scheduling that:
   (a) has to calculate process schedules before they are started.
   (b) is for periodic processes

(3) What are the three essential decision-making factors for code migration and cloning (10 points)?

① When to transfer code?
② Which code to transfer?
③ Where to transfer code?
(4) Mention three different actual metrics popularly used for “Transfer Policy”?

- CPU utilization
- Degree of multitasking
- Queue length for major I/O devices

(5) What are the primary advantages and disadvantages in “process cloning” (compared with “process migration”)?