Suppose that the replacement selection is applied to generate longer runs for N numbers with a priority queue of size M, the possible maximum length of the longest run is 2M.

○ T ◉ F

答案正确：1 分 创建提问

The bottleneck of external sorting is to merge the records from input buffers to the output buffers.

○ T ◉ F

答案正确：1 分 创建提问

Polyphase merge is a method for speeding up k-way merge in external sorting.

F

Replacement selection is a method for generating longer runs in external sorting.

◉ T ○ F

答案正确：1 分 创建提问

For the purpose of parallel operations, we need 2k input buffers and 2 output buffers for a k-way merge.

◉ T ○ F

答案正确：1 分

For a k-way merge in external sorting, the primary reason for k not assuming a large value is that:

◉ A. the I\O time would increase

○ B. k has to be a finite integer

○ C. during merging, the number of comparisons would increase

○ D. k is bounded above by the number of runs

答案正确：1 分 创建提问

Suppose we only have 2 tapes, T_a and T_b, to do external sorting. Suppose that the data which has N records is initially on T_a. Suppose further that the internal memory can hold (and sort) M records at a time. A simple algorithm works as the following:

- Step 1: read M records at a time from T_a, sort the records internally, and then write the sorted records to T_b.
- Step 2: read M records at a time from T_a, sort the records internally, and merge them with sorted records from T_b, and write them ($2M$ records) to T_a.
- Step 3: read M records from T_a, sort them internally, and merge them with sorted $2M$ records from T_a, and write them ($3M$ records) to T_b.

Repeat steps 2 and 3 until all the records are sorted. This algorithm will require __ passes.

○ A. $\lceil N/M \rceil$

○ B. $logN$

◉ C. $log_M N$

○ D. $\lceil log(N/M) \rceil$

答案未知