

**Implementation of DBMS**  
**Exercise Sheet 15**  
**Klingemann, WS 2024 / 2025**

1) Consider a clustered relation  $R(A, B, C, D)$  that has a clustering index on  $A$  and a non-clustering index on each of the other attributes. The relevant parameters are:  $B(R) = 1000$ ,  $T(R) = 5000$ ,  $V(R, A) = 20$ ,  $V(R, B) = 1000$ ,  $V(R, C) = 5000$ , and  $V(R, D) = 500$ . Give the best query plan for the following selection and the corresponding number of disk I/O's. You can ignore the cost for accessing the index.

$\sigma_{A=10 \text{ AND } C=2 \text{ AND } D=3}(R)$