6. (a) List the six steps of the heuristic algebraic optimisation algorithm. [12]

   (b) Apply the optimisation algorithm to the following query.

   ```
   SELECT Fname, Lname, Salary
   FROM EMPLOYEE, WORKS_ON, PROJECT
   WHERE Pno=Pnumber AND Ssn=Essn AND Pname='Product X';
   ```

   [6]

   (c) A file of 2016 blocks is to be sorted with an available buffer space of 10 blocks. How many passes will be needed in the merge phase of the external sort-merge algorithm? [4]

   (d) What are the benefits of pipelining over materialised evaluation? [3]

Total mark for this question: 25