```
function [out1] = HOfunction(t,y,flag,P)
%
-------------------------------------------------------------------------
%   y(1) ... position x
%   y(2) ... velocity dx/dt
out1(1)= y(2);
out1(2)= -1*(P.b/P.m)*y(2) - (P.k/P.m)*y(1) + (P.A/P.m)*sin(P.wr*t);
out1= out1';    % wants output as a column vector
```