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1 function dydt = apocalypse(t, y, a, b, b_d, d, i, n, r, q_i, q_z, d_q)
2 % System of diff.eq. from TTK4130 Modsim 2020 Assignment 1
3 % Zombie apocalypse modeled
4 %
5 % Populations:
6 % H: healthy
7 % I: infected
8 % Z: zombie
9 % D: dead
10 % Q: quarantined
11 %
12 % Population in y vector: y = [H; I; Z; D; Q]
13
14 H = y(1);
15 I = y(2);
16 Z = y(3);
17 D = y(4);
18 Q = y(5);
19
20 dH = b * H - b_d * H^2 - d * H - i * Z * H;
21 dI = i * Z * H - (a + d + q_i) * I;
22 dZ = r * D + a * I - n * H * Z - q_z * Z;
23 dD = d * H + n * H * Z + d * I + d_q * Q - r * D;
24 dQ = q_i * I + q_z * Z - d_q * Q;
25
26 dydt = [dH; dI; dZ; dD; dQ];

```