The following MATLAB code generates Figure 5.

```
% Clear workspace
>> %% Parameter setting
alpha = 0.05;
beta    = 0.06;
p         = 0.25 + alpha;
trials = 20000;
n_list = 0:20:200;
sim_result = zeros(size(n_list));
theory_result = zeros(size(n_list));
for idx = 1:length(n_list)
      n = n_list(idx);
      threshold = floor(n * beta);
      success_case = 0;
      for t = 1:trials
            k = binornd(n,p);
            if(k <= threshold)
                  success_case = success_case + 1;
            end
      end
      sim_result(idx) = success_case / trials;
      term1 = beta * log(beta / p);
      term2 = (1 - beta) * log((1 - beta) / (1 - p));
      theory_result(idx) = exp(-n * (term1 + term2));
end
%% Plot figure
figure('Position',[100,100,640,400])
plot(n_list,sim_result,'o-','LineWidth',2,'DisplayName','Monte-Carlo Numerical Simulation');
hold on;
plot(n_list,theory_result,'--','LineWidth',2,'DisplayName','Chernoff Bound Theoretical
Upper-bound');
xlabel('Number of qubits $n$','Interpreter','latex');
ylabel('$P_{success}(n)$','Interpreter','latex');
title('Attack Success Probability: Simulation vs Theoretical Results');
legend;
grid on;
>>
```