MATLAB CODE FOR ECG:

```
x=0.01:0.01:2;
default=input('Press 1 if u want default ecg signal else press 2:\n');
if(default==1)
    li=30/72;

    a_pwav=0.25;
    d_pwav=0.09;
    t_pwav=0.16;

    a_qwav=0.025;
    d_qwav=0.066;
    t_qwav=0.166;

    a_qrswav=1.6;
    d_qrswav=0.11;

    a_swav=0.25;
    d_swav=0.066;
    t_swav=0.09;

    a_twav=0.35;
    d_twav=0.142;
    t_twav=0.2;

    a_uwav=0.035;
    d_uwav=0.0476;
    t_uwav=0.433;
else
   rate=input('\n\nenter the heart beat rate :');
   li=30/rate;

   %p wave specifications
   fprintf('\n\np wave specifications\n');
   d=input('Enter 1 for default specification else press 2: \n');
   if(d==1)
      a_pwav=0.25;
      d_pwav=0.09;
      t_pwav=0.16;
   else
     a_pwav=input('amplitude = ');
     d_pwav=input('duration = ');
     t_pwav=input('p-r interval = ');
     d=0;
   end


   %q wave specifications
   fprintf('\n\nq wave specifications\n');
   d=input('Enter 1 for default specification else press 2: \n');
   if(d==1)
      a_qwav=0.025;
      d_qwav=0.066;
      t_qwav=0.166;
   else
```

```
  a_qwav=input('amplitude = ');
  d_qwav=input('duration = ');
  t_qwav=0.166;
  d=0;
end



%qrs wave specifications
fprintf('\n\nqrs wave specifications\n');
d=input('Enter 1 for default specification else press 2: \n');
if(d==1)
   a_qrswav=1.6;
   d_qrswav=0.11;
else
  a_qrswav=input('amplitude = ');
  d_qrswav=input('duration = ');
  d=0;
end



%s wave specifications
fprintf('\n\ns wave specifications\n');
d=input('Enter 1 for default specification else press 2: \n');
if(d==1)
   a_swav=0.25;
   d_swav=0.066;
   t_swav=0.09;
else
  a_swav=input('amplitude = ');
  d_swav=input('duration = ');
  t_swav=0.09;
  d=0;
end


%t wave specifications
fprintf('\n\nt wave specifications\n');
d=input('Enter 1 for default specification else press 2: \n');
if(d==1)
   a_twav=0.35;
   d_twav=0.142;
   t_twav=0.2;
else
  a_twav=input('amplitude = ');
  d_twav=input('duration = ');
  t_twav=input('s-t interval = ');
  d=0;
end



%u wave specifications
fprintf('\n\nu wave specifications\n');
d=input('Enter 1 for default specification else press 2: \n');
if(d==1)
   a_uwav=0.035;
```

```
        d_uwav=0.0476;
        t_uwav=0.433;
    else
        a_uwav=input('amplitude = ');
        d_uwav=input('duration = ');
        t_uwav=0.433;
        d=0;
    end



end
pwav=p_wav(x,a_pwav,d_pwav,t_pwav,li);

%qwav output
qwav=q_wav(x,a_qwav,d_qwav,t_qwav,li);

%qrswav output
qrswav=qrs_wav(x,a_qrswav,d_qrswav,li);
%swav output
swav=s_wav(x,a_swav,d_swav,t_swav,li);

%twav output
twav=t_wav(x,a_twav,d_twav,t_twav,li);

%uwav output
uwav=u_wav(x,a_uwav,d_uwav,t_uwav,li);
%ecg output
ecg=pwav+qrswav+twav+swav+qwav+uwav;
figure(1)
plot(x,ecg);
```