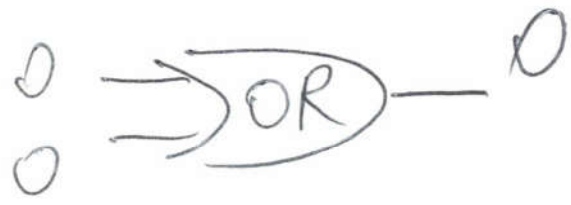
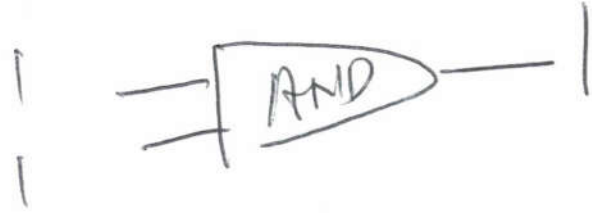
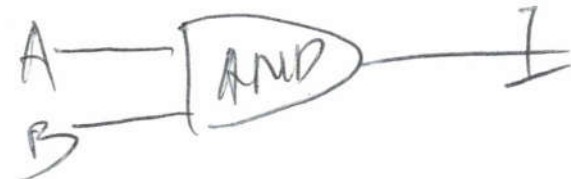
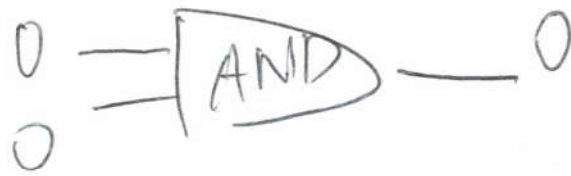
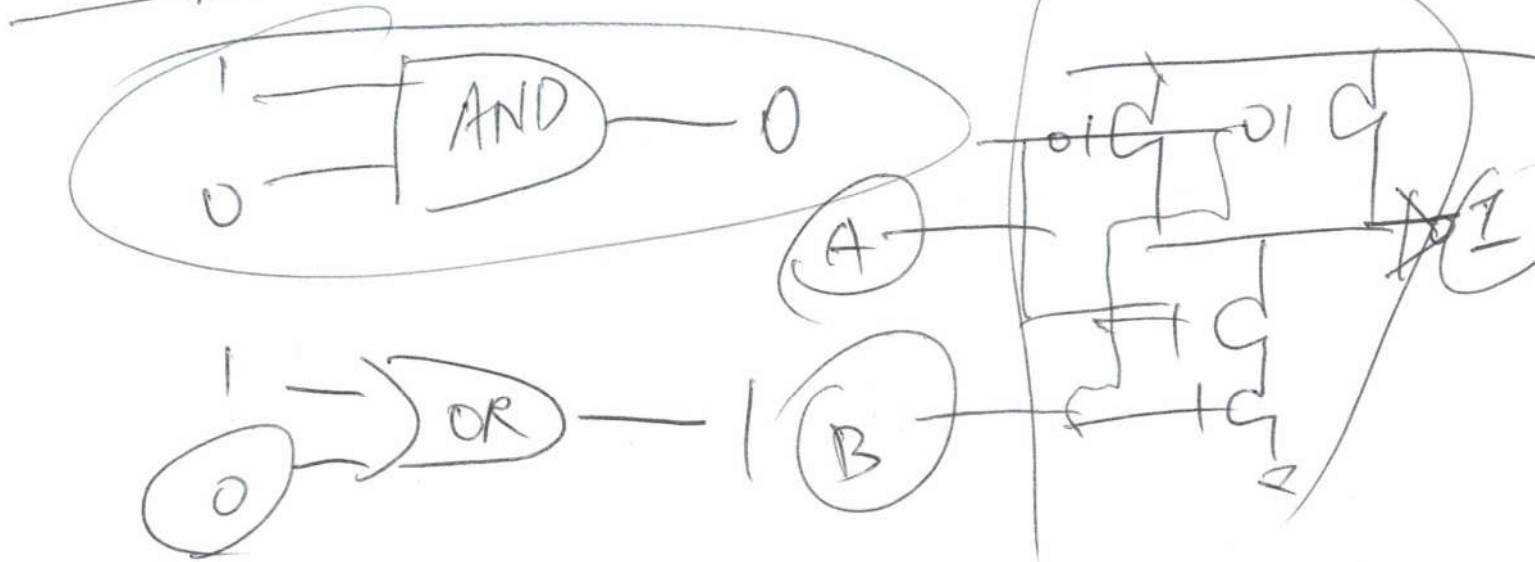


~~1 and 0 =~~



$$(10101.11)_2 \rightarrow (\quad)_{10}$$

$$\begin{aligned} & \downarrow \\ & 1x2^4 + 0x2^3 + 1x2^2 + 0x2^1 + 1x2^0 + 1x2^{-1} + 1x2^{-2} \\ & = 16 + 4 + 1 + 0.5 + 0.25 \\ & = (21.75)_{10} \end{aligned}$$

$$(51.625)_{10} \rightarrow (\quad)_2$$

$$\begin{array}{r|l} 2 \overline{) 51} & \\ 2 \overline{) 25} & 1 \\ 2 \overline{) 12} & 1 \\ 2 \overline{) 6} & 0 \\ 2 \overline{) 3} & 0 \\ 2 \overline{) 1} & 1 \\ 0 & 1 \end{array} \quad \uparrow$$

$$\begin{array}{r|l} 1/2 \overline{) 0.625} & \\ 1/2 \overline{) 0.25} & 1 \\ 1/2 \overline{) 0.5} & 0 \\ 1/2 \overline{) 0} & 1 \\ 0 & 0 \end{array} \quad \downarrow$$

$$(110011.101)_2$$

```
V = [ ]; j = 1;
for i = 1:length(V)
    if V(i) > 10
    else
        V2(j) = V(i);
    end
    j = j + 1;
end
```

```
x = linspace(-2*pi, 2*pi, 200);
for i = 1:length(x)
    if x(i) < -pi
        g(i) = cos(x(i)) + 2;
    elseif x(i) >= -pi && x(i) <= pi
        g(i) = 2;
    else
g(i) = cos(x(i)) - 2;
    end
end
```

(3)

plot(x, g);

Exam3.m

V = [];

[avg, maxx] = meanmaxx(V);

~~zerocut~~ zerocut(V);

~~Meanmax.m~~ Meanmax.m

function [avg, maxx] = meanmax(V)

S = 0;

for i = 1:length(V)

S = S + V(i);

end

avg = S / length(V);

maxx = V(1);

for i = 1:length(V)

if V(i) > maxx

maxx = V(i);

end

end

zerocut.m

function cutt zerocut (V)

~~for i = 1:~~

cutt = V == 0;

cutt
~~cutt~~ = sum(cutt);

end

method II:

for i = 1: length(V)

if @V(i) == 0

~~j = j + 1;~~

end

end

load noisyecg.mat

neecg = noisyECG_withTrend;

totalecg = [neecg' neecg' neecg'];

[PKS, locs] = findpeaks (totalecg, 'minPeakProminence', 1);

X = linspace (1, 6000, 6000);

plot (X, totalecg);

hold on

plot (locs, PKS, 'x');

hold on

P = polyfit (X, totalecg, 20);

yftrend = polyval (P, X);

yflat = totalecg - yftrend;

plot (X, yflat);

(b)

```
title ('ECG Signal Processing')
```

```
xlabel ('x');
```

```
ylabel ('y');
```

```
set(gcf, 'LineWidth', 2, 'FontSize', 12);
```

(1)