Experiment No.6

Code:-

```
clc;
clear all;
n=input('Enter the number:');
Hn=1;
for i=0:2:n;
  H2n=[Hn Hn; Hn -Hn];
  Hn=H2n;
end
disp(H2n);
[p,q]=size(H2n);
x=input('Enter Walsh code number:');
y=input('Enter Walsh code number:');
W1=H2n(x,1:q);
W2=H2n(y,1:q);
W=W1.* W2;
disp(W);
S=0;
a=1;
for b=1:q;
   S=S+W(a,b)
   b+1;
 end
if S==0;
  disp('The Walsh Code are Orthogonal');
else
  disp('the Walsh Code are not Orthogonal');
end
```

Output:-

For n=2:

```
Enter the number:2
  1   1   1   1
  1  -1   1  -1
  1   1  -1  -1
  1  -1  -1   1
Enter Walsh code number:2
Enter Walsh code number:4
  1   1  -1  -1
S = 1
S = 2
S = 1
S = 0
The Walsh Code are Orthogonal
```

For n=4:-

```
Enter the number:4
  1   1   1   1   1   1   1   1
  1  -1   1  -1   1  -1   1  -1
  1   1  -1  -1   1   1  -1  -1
  1  -1  -1   1   1  -1  -1   1
  1   1   1   1  -1  -1  -1  -1
  1  -1   1  -1  -1   1  -1   1
  1   1  -1  -1  -1  -1   1   1
  1  -1  -1   1  -1   1   1  -1
Enter Walsh code number:2
Enter Walsh code number:4
  1   1  -1  -1   1   1  -1  -1
S = 1
S = 2
S = 1
S = 0
S = 1
S = 2
S = 1
S = 0
The Walsh Code are Orthogonal
```