The steps that I took to do the work:

1. I opened modelsim.
2. Then I opened a new project and saved it.
3. Then I created a design file called and12.v and wrote the following code:

module and12(input a,b, output out);

assign out = a&b;

endmodule

1. The created a testbench(tb) file called and12\_tb and wrote the following code:

`timescale 1ns/1ps

module and12\_tb();

reg a,b;

wire out;

and12 dut(a,b,out);

initial

begin

$monitor("Value of a=%b, b=%b, out=%b", a,b,out);

#0 a=0; b=0; // time t = 0 ns

#5 a=0; b=1; // time t = 5 ns

#10 a=1; b=0; // time t = 15ns

#10 a=1; b=1; // time t = 25ns

#20 $finish; // time t = 45ns

end

endmodule

1. Then I saved it and complied the files by clicking the compile all button. And a green tick showed next to the files as shown below.A screenshot of a computer

   Description automatically generated
2. Then I clicked the simulate button at the top, then a mini screen popped up. I clicked the plus(+) sign next to work and clicked on the file named and12\_tb and the clicked **OK.** Then screen below showed.

A screenshot of a computer

Description automatically generated

1. Afterward, I clicked on the box that is circled, then **Crtl A, Crtl C,** right-click, add to wave.

A screenshot of a computer

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1. Then the time from 100ps to 1us then clicked on the button right next to it. Then **NO** when the little box shows up.

A screen shot of a computer

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1. Then the waves show up. Then I clicked on the zoom full button to see the full waves as shown below. Then the full waves will show.

A screenshot of a computer

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