Question 2) Short Question answers

1) Which method is adopted for glitch-free outputs? (2 points)
   a. Output buffers
   b. Lookahead
   c. Use Mealy outputs

2) Hold time is defined as the time required for the data to ________after the triggering edge of clock. (2 points)
   a) Remain stable
   b) Increase
   c) Decrease

3) Consider the following entity with the ROM_array type for a single port ROM with asynchronous read (3 points)

4) Consider the following entity with the ROM_array type for a single port ROM with asynchronous read. (3 points)

   entity ROM is
   port (
       addr : in std_logic_vector(3-1 downto 0);
       dout : out std_logic_vector(12-1 downto 0));
   end ROM;

type rom_type is array (0 to 2**3-1) of std_logic_vector (12-1 downto 0);
constant ROM_array : rom_type :=
   ( X"0C4", X"6C2", X"0F1", X"7D6",
     X"4D2", X"4D0", X"4DB", X"F9F");

Which of the following is the data out signal (dout)?
   a) dout <= ROM_array(unsigned(to_integer(addr)));
   b) dout <= ROM_array(to_integer(unsigned(addr)));
   c) dout => ROM_array(to_integer(unsigned(addr)));
   d) dout => ROM_array(unsigned(to_integer(addr)));

**Question 3**) Write the VHDL code for the free-running binary counter shown in the block diagram

Entity

Architecture

Begin
    Process( awesomeness: Integer)

Question 4) Draw the Algorithmic state machine for the following state diagram.