1. The pin connections the 8088 MPU in Min mode (IC1), address bus latch (IC2), data bus transceiver buffer (IC3) and the memory system (IC4) is given in the following figure. For a memory read bus cycle, label and name the required pins and buses.

(a) Write the name and the Logic-levels of the following pins for above operation;

Pin 1: __________________________ ; Bus 3: __________________________ ;
Pin 4: __________________________ ; Pin 5: __________________________ ;
Pin 2: __________________________ ; Pin 3: __________________________ ;

(b) Write the steps that are performed by CPU to complete the above operation;
2. Fill the following questions:

(i) 8086 microprocessor has _______ bit address-bus and _______ bit data-bus.

(ii) In 8086, the bus cycle consist of at least _____ clock pulses and if required
wait status can be inserted by using the ___________ pin of the microprocessor.

3. Define the following functions according to the preceding order (to occure
in 1st, 2nd and 3rd) during a write bus cycle :  DEN, IO/M and ALE.

<table>
<thead>
<tr>
<th>Signal name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st to occure</td>
<td></td>
</tr>
<tr>
<td>2nd to occure</td>
<td></td>
</tr>
<tr>
<td>3rd to occure</td>
<td></td>
</tr>
</tbody>
</table>

4. Solve the problems of Chapter 8.