NPTEL-WEL Summer Workshop on Micro Controller

Test-2

Maximum Marks:-25

1. Write a program which will display the contents of 8051 registers on the liquid crystal display in the following format:
   First line of display should show the values of registers A, B and PSW in the format: "ABPSW = ?? ?? ??", The second line should display the contents of R0, R1 and R2 in the format "R012 = ?? ?? ??" Here ?? represents the actual content of those registers in Hex. This display should be held for about 5 seconds.

   After this, the display should show "R345 = ?? ?? ??" on the first line and "R67SP = ?? ?? ??" on the second line.
   Note:-you can use software delay or hardware timer for generating delay of 5 seconds.
   [10 Marks]

2. Write a program which will display the contents of 16 locations in the on-chip RAM. The location will be specified by setting switches on the board. (These are connected to the lower nibble of P1 on the Pt51 board). These 4 bits will be interpreted as the more significant nibble of the RAM address, the less significant nibble will be taken as 0. **Example:-**If the input from switches is 2, then contents of 20H to 2FH are to be displayed.
   You have to use `readNibble` sub-routine to read the switches and make sure that you give input less than or equal to 7(as above 7,it points to indirectly addressable range).
   Note:-The contents should be displayed 4 bytes per line with a blank space between two consecutive bytes in a line. Thus 8 bytes will be displayed at a time.

   The next 8 bytes should be displayed after a pause of 5 seconds.
   Note that you have to give the input such that the address range in question is in the directly addressable memory (00-7FH)

   The whole sequence should repeat endlessly. That is, read switches, display 8 bytes, wait for 5 seconds, display the next 8 bytes, wait for 5 seconds, read the switches again ... and so on.
   Note:-you can use software delay or hardware timer for generating delay of 5 seconds.
   [15 Marks]