COURSE CODE: 12M1WEC232   MAX. MARKS:25

COURSE NAME: REAL TIME EMB. SYSTEMS

COURSE CREDITS: 03   MAX.TIME: 1Hr 30Min

Note: *All the questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

Q.-1(a) In a real-time system what is difference between a performance constrain and a behavioral constraint?   [4]

(b) Represent a washing machine having the following specification by means of an extended state machine diagram:

The washing machine waits for the start switch to be pressed. After the user presses the start switch, the machine fills the was tub with either hot or cold water depending upon the setting of the hot wash switch. The water filling continues until the high level is sensed. The machine starts the agitation motor and continues agitating the wash tub until either the preset timer expires or the user presses the stop switch.   [4]

Q.-2 Explain the following issues related to the Rate Monotonic Algorithm(RMA):   [6]

   (i) Self suspension
  (ii) Context Switching Overhead
 (iii) Handling Critical Tasks with Long Periods
 (iv) Coping and Limited Priority Levels

Q.-3: (a) Explain the usefulness of clocks in the distributed systems.   [3]

(b) Describe the focused addressing and bidding and buddy schemes for running a real-time tasks in a distributed environment.   [3]

Q.-4: (a) Explain the priority ceiling plan(PCP)?   [2]

(b) What are different types of priority inversions under PCP?   [3]