APJ Abdul Kalam Technological University
Ernakulam II Cluster
Second Semester M.Tech Degree Examination April/May 2018

**05EC 6006 - Embedded Real Time Systems**

Time: 3 hrs.                                                                 Max. Marks: 60

1. a) What is priority inversion problem?                                   (6 Marks)

   b) How isa task is scheduled inμC/OS-II?                                 (6 Marks)

2. a) Differentiate *OSTaskcreate( ) OSTaskcreateExt( )* functions.        (6 Marks)

   b) How μC/OS-II resume a delayed task?                                  (6 Marks)

3. a) What is semaphore? Write the steps for waiting on a semaphoreusing *OSSemPend().*

                                                                            (8 Marks)

   b) What is message queue? Draw the message queue data structure and describe the different fields in it.                                                         (10 Marks)

**OR**

4. a) Differentiate *OSMboxPend () and OSMboxAccept().*                    (8 Marks)

   b) Write notes on *OSQPost() OSQPostFront () OSQPostOpt ().*            (10 Marks)

5. a) Write the steps to obtain and return memory blocks using functions *OSMemGet()* and *OSMemPut().*                                                             (10 Marks)

   b) With a suitable example show how dynamic memory allocation feature can be used in μC/OS-II.                                                                  (8 Marks)

**OR**

6.  a) What is the data structure of memory control block?                 (8 Marks)

    b) What are the operations performed by the following functions        (10 Marks)
        i. *OSMemCreate()*
        ii. *OSMemQuery*