Total Number of Pages: 01   **B.Tech**
                                                                                                                    PEEC5405

8th Semester Regular / Back Examination 2016-17
EMBEDDED SYSTEMS
BRANCH(S): BIOMED, ECE, EEE, ELECTRICAL, ETC
Time: 3 Hours
Max Marks: 70
Q.CODE: Z267
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1   **Answer the following questions:**   **(2 x 10)**
  a) What are operational and non-operational quality attribute?
  b) What is inter-task communication?
  c) Differentiate between compilers and cross-compiler?
  d) What is hardware software co-design?
  e) What is task scheduling in OS context?
  f) What is kernel?
  g) What is the role of programming languages in system design?
  h) What is MTBF in a embedded product?
  i) Why Embedded System is called as Real-Time?
  j) What is NVRAM?

Q2 **a)** What is operational quality attribute? Explain the important operational   **(5)**
               quality attributes to be considered in any embedded system design?
       b) Explain time-to market and time –to-prototype?   **(5)**
Q3 **a)** What is the difference between DFG and CDFG?   **(5)**
       b) What is 'State chart'? Explain its role in embedded system design.   **(5)**
Q4 **a)** Explain the important hardware software trade-offs in hardware software   **(5)**
               partitioning?
       b) What is EDA tool? Explain the role of EDA tools in embedded system design.   **(5)**
Q5 **a)** What is the task control block? Explain the structure of TCB.   **(5)**
       b) Explain how threads and processes are related?   **(5)**
Q6 **a)** Explain the different types of semaphores supported be MicroC/OS-II kernel.   **(7)**
       b) Explain the kernel service of VxWorks   **(3)**
Q7   Write a program for "interlockedCompareExchange" interlocked intrinsic   **(10)**
             function for windos XP OS.
Q8   **Write short notes on any Two from the following**   **(5 x 2)**
  a) EDLC
  b) VxWorks
  c) IDE
  d) MicroC/OS-II