Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **M.Tech**
P2ARCC07

2nd Semester Regular / Back Examination 2018-19
EMBEDDED SYSTEM DESIGN
BRANCH : COMMUNICATION ENGG, COMMUNICATION SYSTEMS, ELECTRO & COMM. ENGG, ELECTRO AND TELECOMMUNICATION ENGG
Max Marks : 100
Time : 3 Hours
Q.CODE : F429

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1 **Only Short Answer Type Questions (Answer All-10)** **(2 x 10)**

a) Discuss briefly about an embedded system?
b) Discuss the various embedded system requirements?
c) Define is the non-operational quality attribute?
d) Give the difference between microprocessor and microcontroller?
e) Write the difference between masked ROM and OTP?
f) Define Relay? What are the different types of relays being available?
g) Define is PPI device?
h) Write the merits and limitations of the RS232 interface?
i) Discuss about format of the assembly level language?
j) What is mean by mnemonics? Give the example?

Part- II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) Explain the various purposes of embedded systems in detail with illustrative examples?
b) Define operational quality attribute? Explain the important operational quality attributes to be considered in any embedded system design?
c) Give examples for general purpose processor? And explain in detail about processor?
d) Discuss about the product life cycle of an embedded product development?
e) Classify the advantages of FLASH over other program storage memory in Embedded system design?
f) Draw the interfacing diagram for connecting an LED to the port pin of a microcontroller. The LED is turned ON when the microcontroller port pin is at Logic 0.
g) Write a ALP program to interfacing matrix keyboard to microcontroller 8051?
h) What is embedded firmware? What are the different approaches available for embedded firmware development?
i) Define RESET Circuit. Explain the role of RESET circuit in embedded
j) Discuss in detail about the functionality and role of Watch dog Timer in embedded system.
k) Define kernel. What are the different functions handled by a general purpose kernel?
l) Determined how multithreading can improve the performance of an application with an illustrative example?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3 Explain the various process interaction models in detail. **(16)**

Q4 Discuss in detail about the critical section object for process synchronization. Why critical section object is based synchronization **(16)**

Q5 Give the examples for situations demanding mixing of C with assembly. Explain the techniques for mixing of C with assembly. **(16)**

Q6 Explain about library file creation and usage in the assembly language based development. **(16)**