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

Total Number of Pages : 02 **B.Tech**
PIT5D001

5th Semester Regular Examination 2019-20
REAL TIME SYSTEMS
BRANCH : IT
Max Marks : 100
Time : 3 Hours
Q.CODE : HR468

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) Mention any four application of real time systems.
b) Differentiate between task scheduling and clock-driven scheduling.
c) Distinguish between safety and reliability .
d) Explain data dependency and its types.
e) Fixed priority vs dynamic priority scheduling.
f) Elaborate firm deadline model.
g) What do you mean by priority inversion ?
h) State the principal difference between pool and channel.
i) What is code sharing ? explain serially reusable and reentrant code .
j) Define and differentiate between deadline and execution time.

Part-II

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

a) Define real time system. What are the characteristic of real time system? Explain with example.
b) Explain the basic model of real time system.
c) Explain the batch process and continuous process.
d) Define :
i) Asynchronous and synchronous transmission technique.
ii) Interrupt response vector
iii) Polling
e) Explain the approaches of application oriented software.
f) Describe mutual exclusion using binary semaphore.
g) With flowchart explain foreground and background.
h) What do you mean by precedence constraints? Explain precedence graph and task graph.
i) Give advantages and disadvantages of priority inheritance protocol.
j) Explain use of priority ceiling protocol in dynamic priority system.
k) Elaborate resource conflicts and blocking.
l) Draw and explain task state diagram.

Part-III

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

Q3		Explain with suitable diagram the multi-user and multi-tasking operating systems.	**(16)**
Q4	**a)**	Describe clock driven and weighted round robin scheduling algorithm with example.	**(8)**
	b)	Explain dynamic versus static system.	**(8)**
Q5		Explain RM and DM algorithm with suitable example.	**(16)**
Q6		**Explain the following in detail :**	
	a)	Polling server	**(8)**
	b)	Deferrable server.	**(8)**