Registration No :

Total Number of Pages : 01   **B.Tech**
                                                                                    PEEE5407
7th Semester Back Examination 2019-20
INDUSTRIAL AUTOMATION AND CONTROL
BRANCH : AEIE, ECE, EEE, EIE, ELECTRICAL, ETC, IEE, MECH, METTA, MME, PE
Time : 3 Hours
Max Marks : 70
Q.CODE : HB484
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)	Give some application of selective control.	
b)	How much is accuracy of pneumatic controller (in %)?	
c)	What are the categories of control valve?	
d)	What are the advantages of DCS?	
e)	What is the role of actuator?	
f)	What is the role of feedback in Control system?	
g)	State the importance of ratio Control.	
h)	Give the topology of Adaptive Control.	
i)	A task is in which state, when it is not in the reckoning for execution.	
j)	Why a PID controller is more preferred over PI controller?	

Q2	**a)**	Explain the functional requirements of distributed process control system.	**(5)**
	b)	Illustrate comparison between Distributed vs. Centralized control.	**(5)**

Q3	**a)**	Explain the Hydraulic Actuation briefly.	**(5)**
	b)	Explain the feedforward control of a distillation column briefly.	**(5)**

Q4	**a)**	What are the advantages of cascade control configuration?	**(5)**
	b)	Draw PLC ladder diagram to realize 8:1 MUX.	**(5)**

Q5	**a)**	In a real time operating system explain how the inter-task Communication is achieved?	**(5)**
	b)	Explain task Management.	**(5)**

Q6	Explain Multivariable Control with some examples.	**(10)**

Q7	What is the need of tuning in PID Controller .Also explain Zeigler-Nichols Tuning Method briefly.	**(10)**

Q8		**Write short Notes on any TWO :**	**(5 x 2)**
	a)	Pneumatic Actuation	
	b)	Digital PID Controllers	
	c)	control valve characteristics	