[Time: 3 hrs] **[Total Marks: 80]**

Note : 1. Question 1 is compulsory
2. Answer any three out of remaining five question
3. assume suitable data where required

Q1	Attempt any four	20
a)	What is the Purpose of Data Acquisition in Sensors	5
b)	What is the difference between Capacitive and Inductive Displacement sensors	5
c)	Explain the use of membrane and Bellows in Pressure Sensors	5
d)	How can artificial Microsystems help in building applications using MEMS and CMOS Technology ?	5
e)	Write a short note on Signal Conditioners ?	5
Q2		
a)	Explain the features of different type of Single Board Computers	10
b)	Write a short note on Optical and Oscillating Hygrometers?	10
Q3		
a)	What are the steps to install OS in raspberry pi	10
b)	Explain different sensors used in Aerospace Applications	10
Q4		
a)	Which are different sensors used in Automobile Applications	10
b)	Illustrate the working of Ultrasonic and Level Sensors using Suitable Applications?	10
Q5		
a)	Explain the parameters based on which of sensor and actuator are identified for real-time application	10
b)	Compare Photosensors: Photodiode, phototransistor and photo resistor.	10
Q6		
a)	Write a short note on VRP Sensors.	10
b)	Write a short note on different Semi Conductor IC Technologies	10