Sanjay Ghodawat University, Kolhapur

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

2020-21

EXM/P/09/00

Year and Program: TY B. Tech	**School of Technology**	**Department: Electronics**
Course Code: ECE302	**Course Title: Mechatronics**	**Semester : VI**
Day and Date:	**End Semester Examination**	**Time:2 Hrs.** **Max Marks:50**

Instructions: 1) All Questions are compulsory.

Q.1		**Answer the following (any Two)**	**Marks**	**Bloom's Level**	**CO**
	a)	Explain the elements of Measurement system with an example.	8	L2	CO1
	b)	Write a short note classification of mechatronics systems.	8	L1	CO1
	c)	Illustrate the working principle of DC motor with neat schematic diagrams.	8	L2	CO2
Q.2		**Answer the following (any two)**			
	a)	The following operating of a DC motor for speed control are obtained: a) Minimum speed = 200 rpm b) maximum speed = 1800 rpm. c) Set point= 1500 rpm d) actual motor speed= 1400 rpm. Determine the following: a) Percent set point b) Percent measured value c) error d) percent error.	8	L5	CO3
	b)	Illustrate PID controller with neat schematic and an example.	8	L3	CO3
	c)	Design and describe using a block diagram a PLC based product sorting machine based on any one parameter: Height or Weight or length.	8	L4	CO4
Q.3		**Answer the following (any two)**			
	a)	Compare and Contrast between Conventional system, NC systems and CNC systems.	9	L3	CO5
	b)	Explain the concept of Computer Numerical Control (CNC) system with a neat schematic diagram	9	L3	CO5
	c)	Illustrate the generic steps in design process of mechatronics system.	9	L2	CO6

*****