|--|

Question Paper Code: 56503

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Sixth Semester

Electronics and Instrumentation Engineering

15UEI603-PROCESS CONTROL

(Regulation 2015)

Duration: 1:15hrs

Maximum: 30 Marks

PART A - $(6 \times 1 = 6 \text{ Marks})$

(Answer any six of the following questions)

1.	Which of the followinstrument?	ing are the o	dynamic	characteristics	of an		CO1- R	
	(a) Reproducibility	(b) Sens	sitivity	(c) Dead zo	one	(d) Fic	lelity	
2.	Thermocouple in a thermal well behaves as a true						CO1- R	
	(a) first order system (b) multiple first of			e first ord	ler syste	m		
	(c) second order system (overdamped) (d) second order sy					ystem (underdamped)		
3.	3. What type of controller is displayed by the equation below?						CO2- App	
	$c(t) = K_c[e(t) + rac{1}{T_i} \int e(t) dt]$							
	(a) Feed forward	(b) Derivative	tive (c) PID			(d) Integra	Proportional 1	
4.	controller is an example of discontinuous controller mode						CO2- U	
	(a) Proportional control		(b)	Integral control	1			
	(c) Derivative control		(d)	ON/OFF control	ol			
5.	Control is the satisfactory control for temperature process					CO3- U		
	(a) PID	(b) PI	(c) PD		(d) P		

6.	Use of <i>I</i> -control along with <i>P</i> -control facilita	CO3- R	ł						
	(a) elimination of offset	(b) reduction of offset							
	(c) reduction of stability time	(d) none of these							
7.	The phenomenon of cavitation is related to _	CO4- R	ł						
	(a) Pascal law (b) Bernouli's theorem	(c) Newton's law	(d) Hooks law						
8.	In Electro-Pneumatic Direction control valves the actuation is done CO4- R by which of the following?								
	(a) Lever (b) Push button	(c) Solenoid	(d) Relay						
9.	. The control configuration with primary loop and secondary loop is C known as								
	(a) Cascade control	(b) Split range control							
	(c) Ratio control	(d) Feed forward control							
10.	Control valve sizing depends on	CO5- R	ł						
	(a) Cv factor (b) Flow rate	(c) Fluid property	(d) Line pressure						
$PART - B (3 \times 8 = 24 \text{ Marks})$									
(Answer any three of the following questions)									
11.	Derive the transfer function for interactive system	k CO1- App (8))						
12.	Describe the characteristics of P, PI and PID	modes of controller.	CO2- App (8))					
13.	Discuss the controller settings using Zi cycling method and write its limitations.	us CO3-U (8))						
14.	Explain the operation of pneumatic actuato positioner	rs with and without valv	e CO4-U (8))					

^{15.} Explain the concept of ratio control with an example CO5- U (8)