K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Feb|March 2~

B.Tech Program: Electronics and Telecommunication Scheme II
Examination: SY Semester: III
Course Code: EXC304 and Course Name: Electronics Instrumentation And Control System
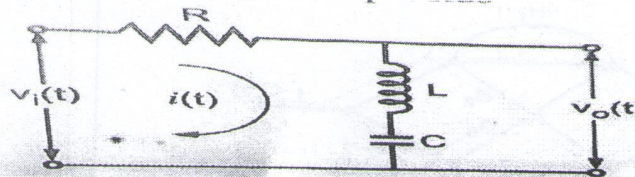
Date of Exam: 06-03-24

Duration: 2.5 Hours

Max. Marks: 60

Instructions:
(1) All questions are compulsory.
(2) Draw neat diagrams wherever applicable.
(3) Assume suitable data, if necessary.

		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight.	12		
i)	Define Accuracy with example.	2	1	U
ii)	Draw Wheatstone bridge circuit diagram.	2	1	U
iii)	Define breakaway point.	2	5	R
iv)	Define transducer and inverse transducer.	2	2	U
v)	Define close loop with example.	2	3	R
vi)	Define gain margin.	2	6	U
vii)	Define Nyquist plot.	2	6	R
viii)	Define transfer function.	2	4	U
Q.2	Solve any four questions out of six.	16		
i)	Find the transfer function of given network.	4	3	U
ii)	Find the stability of given equation. $S^5+2S^4+3S^3+6S^2+10S+15$	4	5	U
iii)	Write selection criteria of transducer.	4	2	U
iv)	Compare open loop and closed loop system.	4	4	U

Supplementary Exam, ~~Nov_Dec 23~~ & Feb/Mar 2024

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v)	Write short note on calibration.	4	1	U	
vi)	Explain potentiometer transducer.	4	6	R	
Q.3	Solve any two questions out of three.	16			
i)	Derive and expression for kelvin's double bridge with proper diagram.	8	1	U
ii)	Find C(s) / R(s) for given system.	8	4	AP
iii)	Sketch the root locus of unity feedback system with G(s) = K/ S(S+5) (S+10).	8	5	AP
Q.4	Solve any two questions out of three.	16			
i)	Explain thermocouple with its all types and its temperature ranges.	8	2	U
ii)	Find C(s)/ R(s) using Mason's gain formula	8	3	AP
iii)	Sketch the root locus of unity feedback system with G(s) = K/ S(S+1) (S+3).	8	6	AP

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