JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2025

B.Tech-II Semester (CSE/IT/ECE/CE/BT/BI)

COURSE CODE (CREDITS): 23B11EC411   MAX. MARKS: 35

COURSE NAME: AUTOMATIC CONTROL SYSTEMS

COURSE INSTRUCTORS: Dr Rajiv Kumar   MAX. TIME: 2 Hours

Note: (a) *All questions are compulsory.*

(b) *The candidate is allowed to make Suitable numeric assumptions wherever required*

for solving problems

Q.No	Question	CO	Marks
Q1	What do you mean by the frequency response of a system? Explain various frequency domain specifications.	CO-4	7
Q2	Draw the Polar plot for the system having transfer functions: (i) $G(s) = 1 + 5s$ (ii) $G(s) = \dfrac{1}{1+s}$	CO-3	7
Q3	Find out the centroid, breakaway points, angle of asymptotes after plotting the root-locus of the following open-loop transfer function: $G(s)H(s) = \dfrac{K}{s(s+1)(s+5)}$	CO-3	7
Q4	Draw the Bode Plot for the given Transfer Function: $G(s) = \dfrac{10s}{(s+4)(s+10)}$	CO-4	7
Q-5	(a) What is correlation between frequency and time domain? (b) Explain the approach of PID controller.	CO-5	7