

Government College of Engineering, Amravati
Department of Electronics and Telecommunication

CLASS TEST-II (Summer 2016) B. Tech. Second Year

Course: Control System Engineering Code: ETU404 Time: 1 hrs. Marks: 15 Dt. 10/03/2016

Note: 1. Assume the data whenever necessary.

1. Explain in brief components of control system.

3M

2. For a unity feedback system $G(S) = 20 (S+2)/ [S^2 (S+1) (S+5)]$.

4M

Determine (i) the type of system 2

(ii) error coefficients and 8

(iii) steady state error for input $1 + 3t + t^2/2$ 8

3. For a unity feedback system, system is marginally stable and oscillates with frequency 4 rad/sec.

Find K_{mar} and 'q'. $G(s) = 4/ [(s^2 + qs + 2K) s]$.25, 8, K_{mar}

4M

4. Determine time response specifications for a unit step input to a unit feedback system having

$G(s) = 144/ [s (s+12)]$

.1125, .2015, .302, .0.1749, 1/3, 4/5, 0.0313

4M

Department of Electronics Engineering

Course Code: ETU 404

CT-II

Max. Marks: 15

Course Name: Control System Engg.

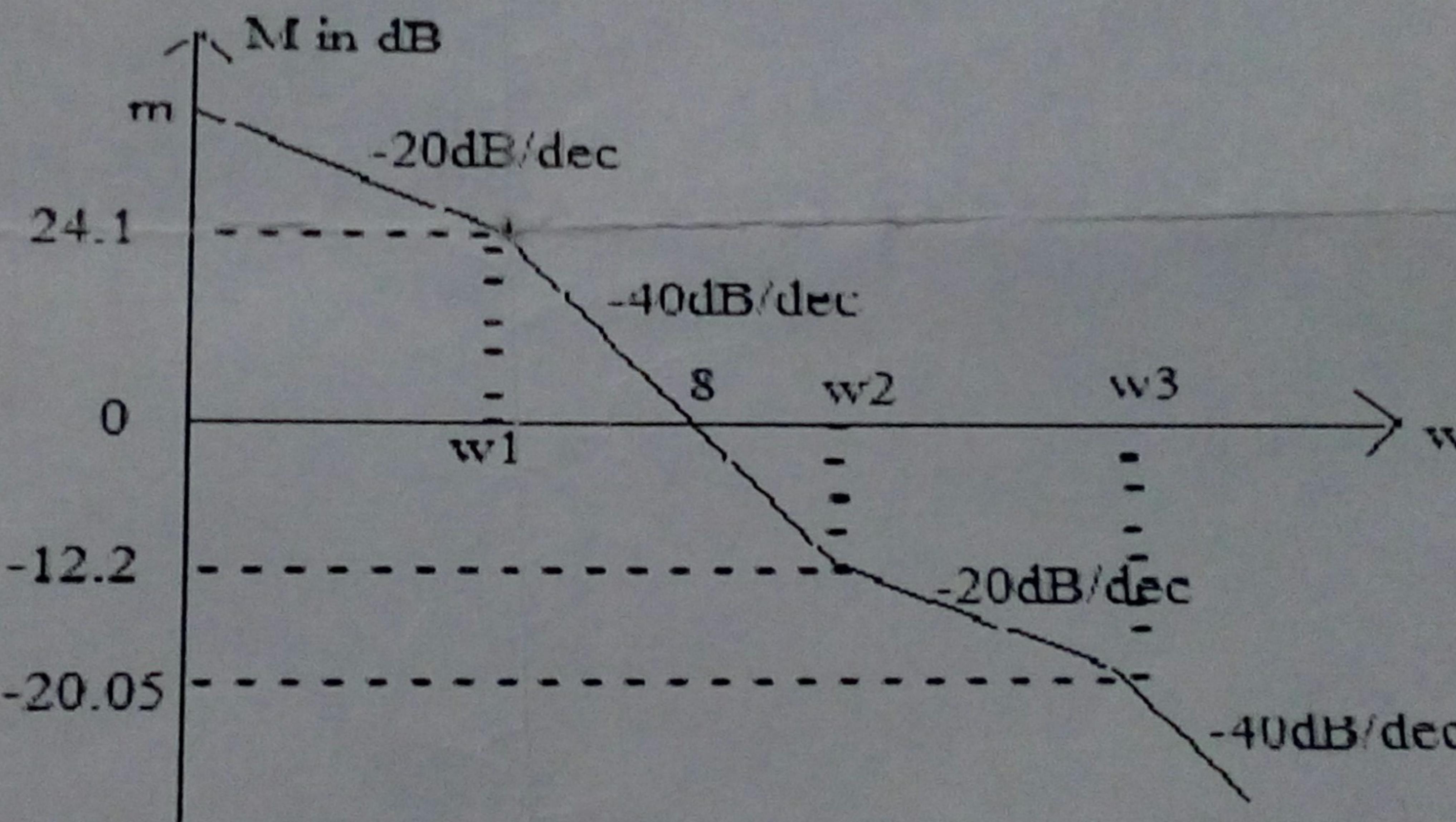
Time: 1hr

Q1. Find the P.M and G.M for $G(s)H(s) = \frac{e^{-s}}{s(s+1)}$.

5M

OR

Q2. Find w_1, w_2, w_3, m and T.F to the given magnitude plot of minimum phase system



5M

Q3. Sketch the Bode Plot of system having the OLTF $G(s)H(s) = \frac{10}{s(s+1)(s+10)}$

5M

Q4. Sketch the Root locus diagram of a system having $G(s)H(s) = \frac{K(s+1)}{s(s-1)(s^2+4s+16)}$

5M

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