Thes Hennes

encquency nesponse of second onden system

Aim : To obtain trequency nesponse of a second onder 315tem conuclation of frequenty domain specifications 121151121

Appointust PC with matlab goltware

25wn=8 - troom

FREQUENTS response is defined as the magnitude and phase difference between the input and output sinosoids. It is obtained by applying a sinuspidal input with different frequency and observing magnitude and phase of output. If Gliw) is mansten function The Gisul is w given Inequents plot.

- 2) Fan enendaraped 35 ter + Frequenty neseonse con be obtained by using bode plot, poun plot (31/2-1/11 = rand Neuist Plot
 - 7 This gain and phase manitudes are obtained from the plots helps to decide the

= mant + + = nail Frequents domain specifications are the measures of personmente 9) Erssnant war masnified and charecterstics of control system

+ Reasonant Inequency (wn) +

The frequency at which system has maximum magnitude 2007-1-15 is called negonant frequency

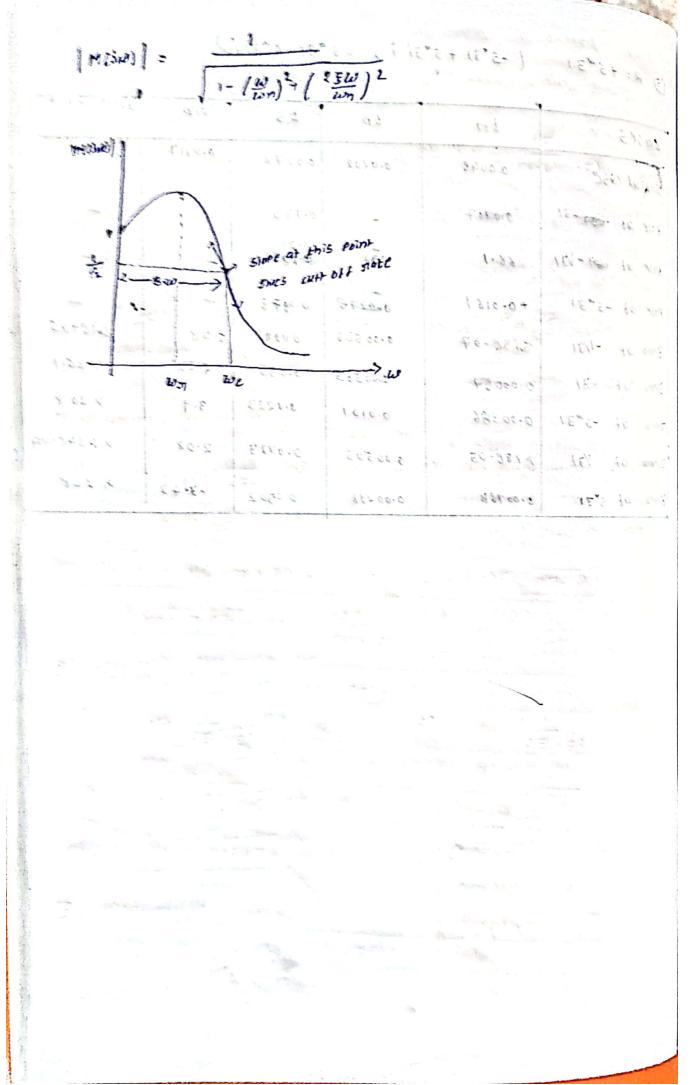
wn = wn /1-232

1.21.1 0 113

The Burney said ber

2. Resonant Peak magnitude (Mn):

The neasonant peak magnitude is the maximum value of the closed loop forequenty nesponse



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1260 13-92

For seedback emenol system the nange of inequencies oven which [HISWI] is caual to con greater than [Holfs]

is defined as the bandwidth

1000 = cu (1-2 = 2) + 5 (1-259+1) 1/2

41817 = 50

[called - 11/10) = - 121 (11/10)

Procedure = 250 gr

I open matlab command window

2. open new seniet File

a seniet file Communal rost ins

3. Enlen the code and obtain its book plut

A. Run the program and obtain pri and Girl From table bade plot and frequency domain specifications

3. Tabulate The observations theoritically and practically and observe

8. observe The wave form and exit [313][515] PURICINIETINS Theonitical priorestal Tocominist Processes £ £-12 127 115+4 0,00 13,72 4331H Jun 11152 2181 1112 1159481566 05-16 Bec Fisher Moss ater? 1 2 aritari rsimilai 6-116501.30 p Sugaro out 1. Similar 1. Farifai Prigate margire CXI

Theonitical values

FOR SCIONE ONDERSYSTEM

1)
$$7.F = \frac{121}{5^{1}+115+12}$$

2) $7.F = \frac{15}{(513)(515)} = \frac{15}{5^{1}755+15}$

$$\omega n^2 = 121 \quad \omega n = 11$$
 $\omega n^2 = 15 \quad \omega n = 15$

The period of the same of the same oven dumped system

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at Intial position only

g) Reasonant pear magnitude me anothernique monde transferi

and encouraging of consider systems

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Band width!

Wb = wn [(1-2=2) + [(+2=)27)) 1/2

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Intentenence:

the degree of stability depends on gain manging and phase mangin - The bode plot gives clean distribution of steady state nesponse of the system for different inequalities

result.

and the same of th

The foreuency preponse of system has been studied for and order system.