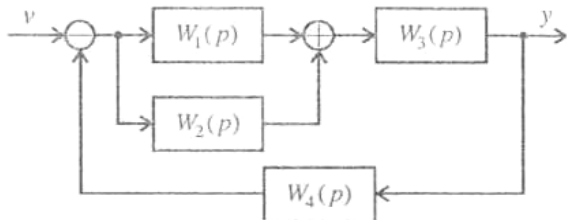


BOSHQARISH NAZARIYASI FANIDAN NAZORAT SAVOLLAR

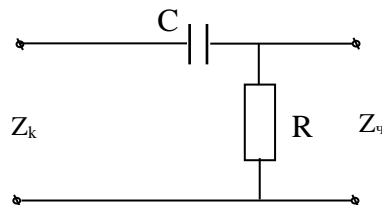
1. Boshqarish to'g'risida tushuncha va uning asosiy elementlari..
2. Ko'p o'lchamli ob'yektlarni vektor-matrisa shaklida ifodalash.
3. 1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

Sistemaning xarakteristik tenglamasi $p^3 + p^2 + 2p + 1 = 0$ ko'rinishda bo'lsa, uning turg'unligini aniqlang.

2-rasmda keltirilgan CR zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.

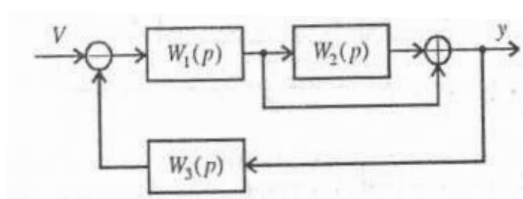


2-rasm.

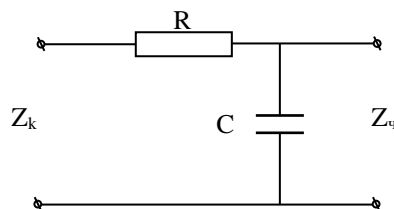
4. Boshqarish sistemalarining funksional sxemasi va boshqarish prinsiplari.
5. Garmonik chiziqlantirish usuli.
6. Sistemaning xarakteristik tenglamasi $5p^3 + 2p^2 - 3p + 1 = 0$ ko'rinishda bo'lsa, uning turg'unligini aniqlang.

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan CR zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



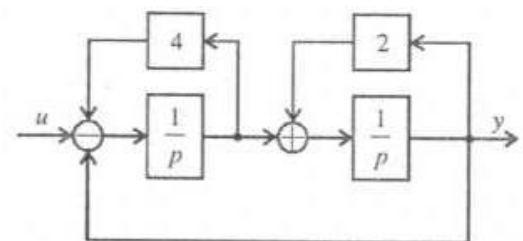
2-rasm.

7. Boshqarishning asosiy prinsiplari.
8. Nochiziqli tizimlar xususiyatlavri.

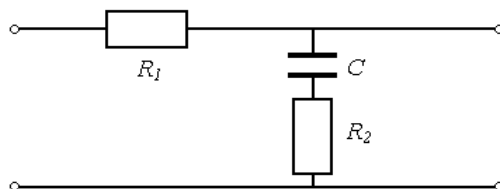
9. Agar ochiq sistemaning uzatish funksiyasi $W(p) = \frac{20}{p^2(1 + 0.01p)}$ ko'rinishda bo'lsa, berk sistemaning turg'unligini aniqlang.

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



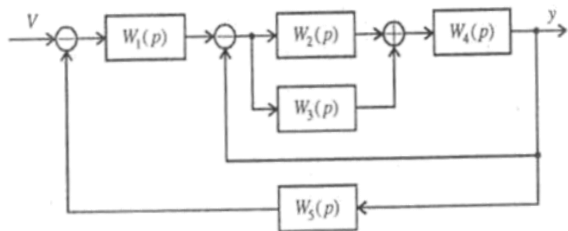
1-rasm.



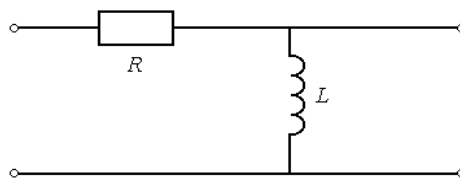
2-rasm.

10. Avtomatik boshqarish sistemalarining sinflanishi.
11. Nochiziqli tizimlar uchun fazoviy tekislik usuli.
12. Agar sistemaning xarakteristik tenglamasi $5p^3 + 2p^2 - 3p + 1 = 0$ ko'rinishda bo'lsa, sistemaning turg'unligini aniqlang.

- 1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.
 2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.

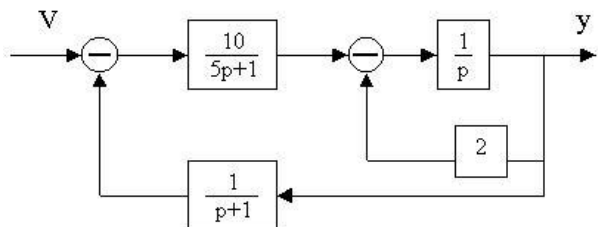


1-rasm.

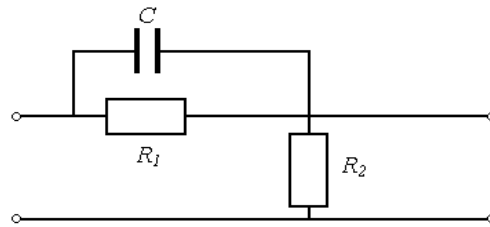


2-rasm.

13. Vaqt va chastotaviy tavsiflar.
 14. Diskret tizimlar turg'unligi..
 15. Turg'unlikning Mixaylov mezonida xarakteristik tenglamasi $10p^3 + 5p^2 + 5p + 10 = 0$ ko'rinishdagi berk sistemaning turg'unligini aniqlang.
 1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.
 2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.

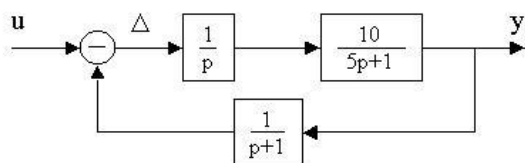


1-rasm.

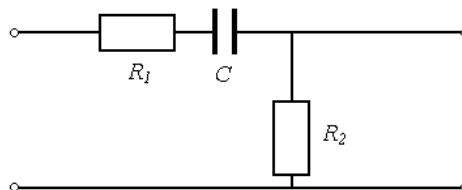


2-rasm.

16. Laplas o'zgartirishi. Uzatish funksiyasi.
 17. Popov mezon.
 18. Xarakteristik tenglamasi $p^3 + 2,5p^2 + 2p + 5 = 0$ ko'rinishda bo'lsa, avtomatik sistemaning turg'unligini aniqlang.
 1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.
 2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.

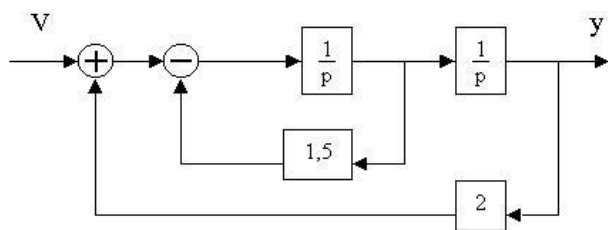


1-rasm.

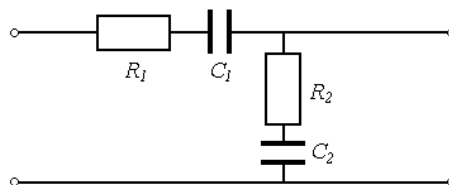


2-rasm.

19. Avtomatik boshqarish tizimining barqaror rejim xatoligini hisoblash.
 20. Diskret tizimlarning matematik ifodasi.
 21. Xarakteristik tenglamasi $p^3 + 2,5p^2 + 2p + 5 = 0$ ko'rinishda bo'lsa, avtomatik sistemaning turg'unligini aniqlang.
 1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.
 2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

22. Tipik zvenolar. Aperiodik zveno

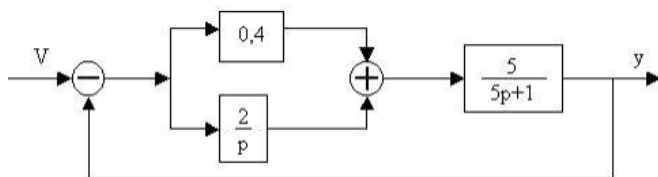
23. Holat o'zgaruvchilari sxemasi bo'yicha o'tish matrisalari tasvirini olish.

24. Berk sistemaning xarakteristik tenglamasi $4r^3 + 4r^2 + 5r + 10 = 0$.

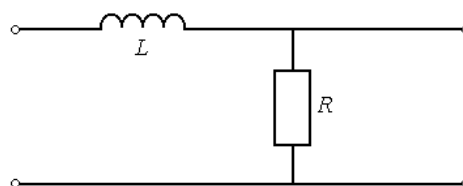
ko'rinishda bo'lsa, sistemaning turg'unligini aniqlang.

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

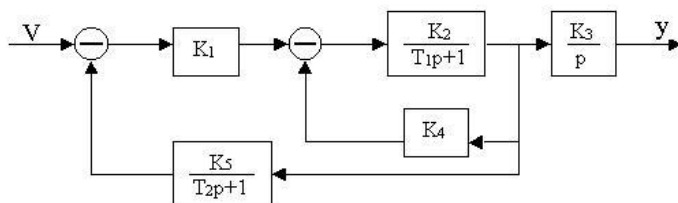
25. Tipik kirish signallari. Vaqt xarakteristikalari.

26. Turg'unlik tushunchasi. Turg'unlik masalasining umumiy qo'yilishi.

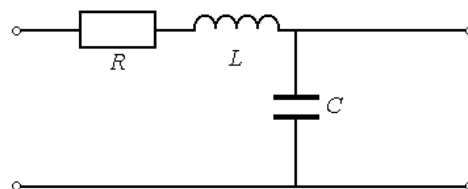
27. Uzatish funksiyasi $W(p) = \frac{58}{p(1 + 0,57p)(1 + 0,01p)}$ ko'rinishdagi berk sistemaning turg'unligini aniqlang.

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

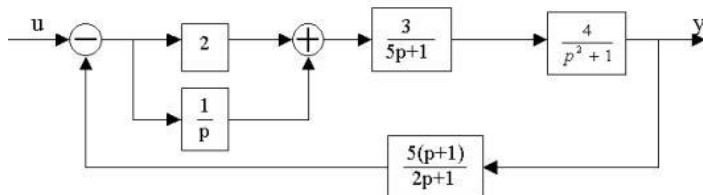
28. Chiziqli va diskret tizimlarning uzatish funksiyalari.

29. Diskret tizimlar turg'unligi.

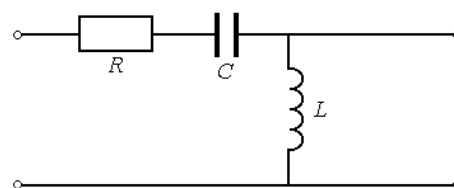
30. $10p^3 + 5p^2 + 5p + 10 = 0$ xarakteristik tenglamali tizimning turg'unligini aniqlang.

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

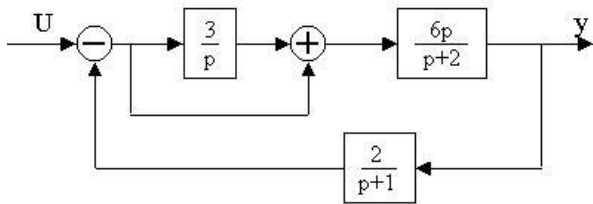
31. Chastotaviy xarakteristikalar.

32. Turg'unlikning algebraik mezonlari. Raus turg'unlik mezoni.

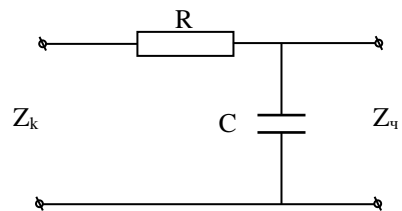
33. Berk sistemaning xarakteristik tenglamasi $4r^3 + 4r^2 + 5r + 10 = 0$. ko'rinishda bo'lsa, sistemaning turg'unligini aniqlang

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

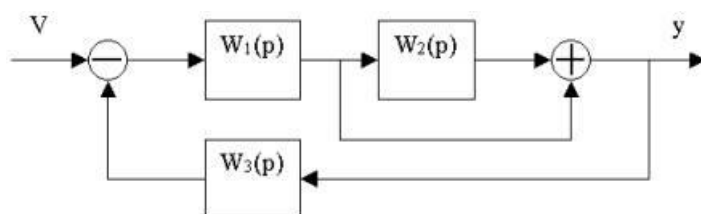
34. Vaqt xarakteristikalari va ularni olish.

35. Gurvis turg'unlik mezoni.

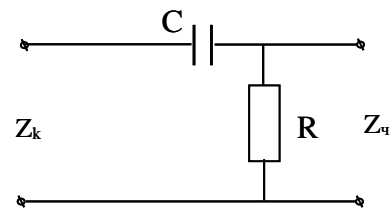
36. $10p^3 + 5p^2 + 5p + 10 = 0$ xarakteristik tenglamali tizimning turg'unligini aniqlang.

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

37. Elementar zvenolar va ularning xarakteristikalari. Proporsional zveno.

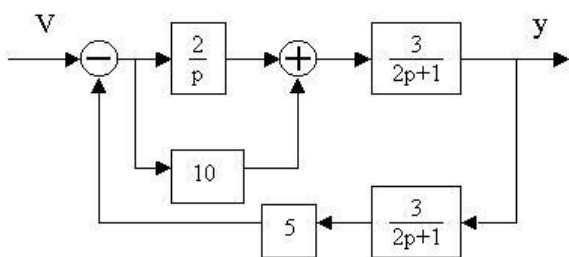
38. Turg'unlikning chastotaviy mezonlari. Argumentlar prinsipi.

39. Quyida keltirilgan xarakteristik tenglamali tizimning turg'unligini Gurvis mezoni bo'yicha tekshiring:

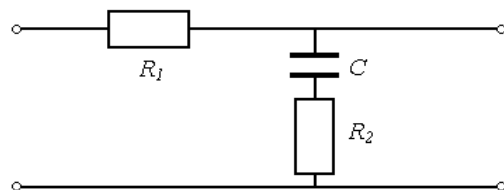
$$r^3 + 1,48r^2 + 4,6r + 4 = 0.$$

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

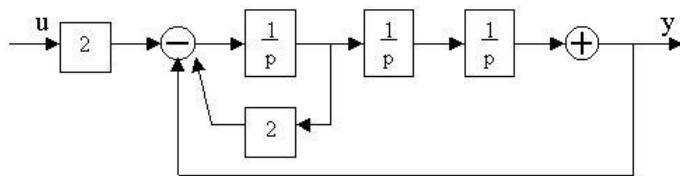
40. Elementar zvenolar va ularning xarakteristikalari. Birinchi tartibli inersial (aperiodik) zveno.

41. Mixaylov turg'unlik mezoni.

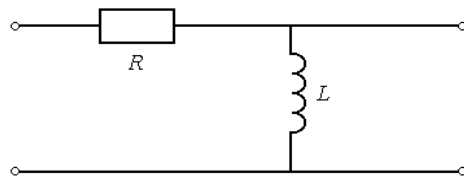
42. Quyida keltirilgan xarakteristik tenglamani turg'unlikning Gurvis mezoni bo'yicha tekshiring: $4r^3 + 4r^2 + 5r + 10 = 0$.

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

43. Elementar zvenolar. Tebranuvchi zveno va uning xarakteristikalar.

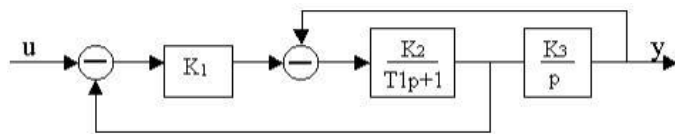
44. Naykvist turg'unlik mezoni.

45. Quyida keltirilgan xarakteristik tenglamani turg'unlikning Gurvis mezoni bo'yicha tekshiring:

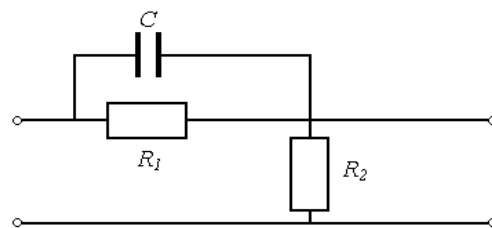
$$2r^3 + 4r^2 + 10r + 20 = 0.$$

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

46. Elementar zvenolar. Integrallovchi zveno va uning xarakteristikalar.

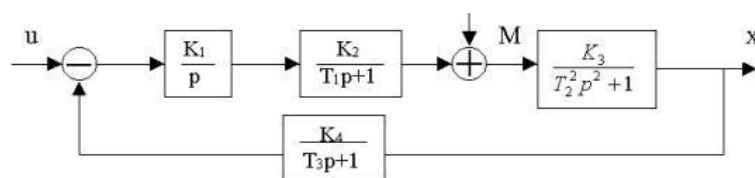
47. Logarifmik chastotaviy xarakteristika bo'yicha turg'unlikning tahlili.

48. Quyida keltirilgan xarakteristik tenglamani turg'unlikning Mixayllov mezoni bo'yicha tekshiring:

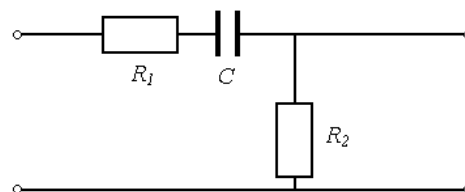
$$p^3 + 2.5p^2 + 2p + 5 = 0.$$

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

49. Elementar zvenolar. Differensiallovchi zveno va uning xarakteristikalar.

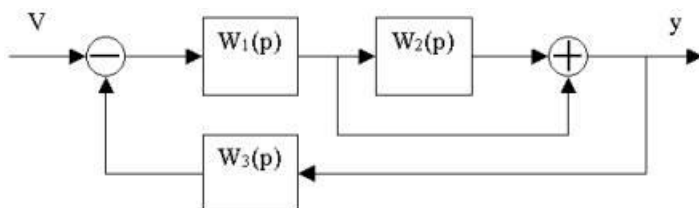
50. Avtomatik boshqarish tizimini sintezlash. Korrektlash qurilmasini hisoblash.

51. Quyida keltirilgan xarakteristik tenglamani turg'unlikning Gurvis mezoni bo'yicha tekshiring:

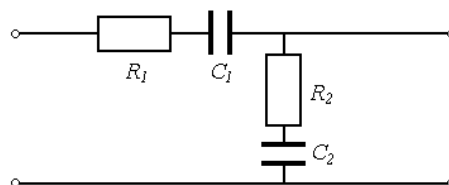
$$25p^3 + 10p^2 + 15p + 20 = 0.$$

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

52. Elementar zvenolar. Birinchi tartibli tezlatuvchi zvenolar va uning xarakteristikalarini.

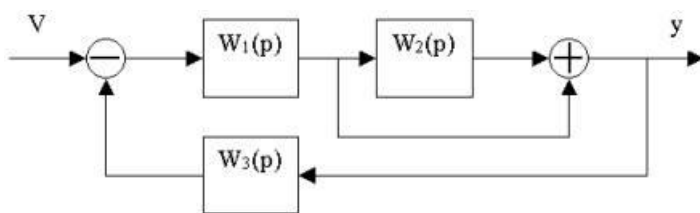
53. Sifat ko'rsatkichlari. O'tkinchi jarayon grafigidan sifat ko'rsatkichlarini aniqlash..

54. Quyida keltirilgan xarakteristik tenglamani turg'unlikning Gurvis mezonini bo'yicha tekshiring:

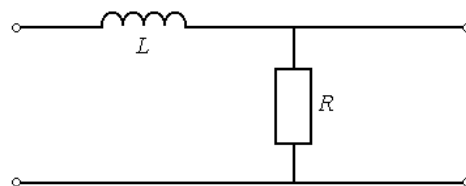
$$p^4 + 10p^3 + 5p^2 + 4p + 10 = 0.$$

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

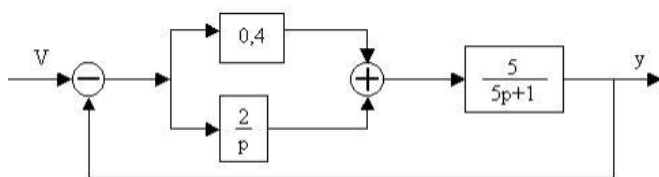
55. Struktur o'zgartirish qoidalari. Ochiq va berk sistemalarning uzatish funksiyasini aniqlash.

56. Holat o'zgaruvchilari sxemasi bo'yicha o'tish matrisalari tasvirini olish.

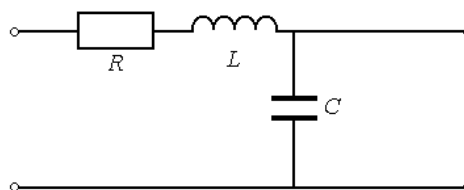
57. Quyida keltirilgan xarakteristik tenglamani $5p^3 + 2p^2 - 3p + 1 = 0$ turg'unlikning Gurvis mezonini bo'yicha tekshiring:.

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.

58. Tizimning chastotaviy xarakteristikalarini.

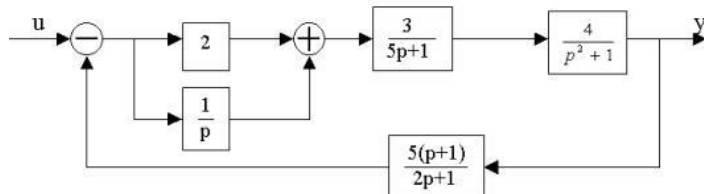
59. Diskret tizimlar va ularning turlari.

60. Quyida keltirilgan xarakteristik tenglamani turg'unlikning Mixaylov mezonini bo'yicha tekshiring:

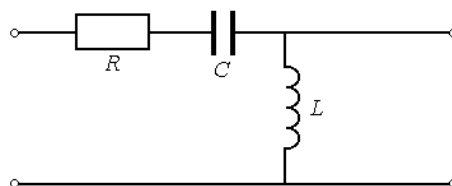
$$0,2p^3 + 0,4p^2 + 0,2p + 4 = 0.$$

1-rasmda keltirilgan strukturali sxemaning umumiy uzatish funksiyasini aniqlang.

2-rasmda keltirilgan zanjirining uzatish funksiyasi $W(p)$ ni toping.



1-rasm.



2-rasm.