

**O`ZBEKISTON RESPUBLIKASI OLIY VA O`RTA MAXSUS  
TA`LIM VAZIRLIGI  
TOSHKENT TO`QIMACHILIK VA YENGIL SANOAT INSTITUTI  
«Korporativ boshqaruv» kafedrası**

**«SANOAT KORXONALARIDA ISHLAB CHIQARISHNI  
TASHKIL ETISH»  
FANIDAN**

# **K U R S I S H I**

**Mavzu:** G-33 va COMET dastgohlari o`rnatilgan soatiga 1450 m 3052 artikulli moleskin to`qimasini ishlab chiqaradigan yigiruv-to`quv fabrikasining mashina,energiya va fond sig`imlari hisoblansin.

Bajardi: 13b-12 guruh talabasi

Norbekov.B

Qabul qildi: dots. Yuldashev S.N.

Toshkent-2015 yil

«Sanoat korxonalarida ishlab chiqarishni tashkil etish» fanidan

kurs ishiga

TOPSHIRIQ № 8

**1. Kurs ishi mavzusi:** G-33 va COMET dastgohlari o'rnatilgan soatiga 1450 m 3052 artikulli moleskin to'qimasini ishlab chiqaradigan yigiruv-to'quv fabrikasining mashina, energiya va fond sig'implari hisoblansin.

**2. Boshlang'ich ma'lumotlar:** Vazifada berilgan yigiruv va to'quv dastgohlarining texnik tavsifi, mahsulotning parametrlari, idishlarning o'lchamlari, tsehlarning quvvatini hisobi, ish vaqti fondi.

**3. Qo'llanmalar:** R.A. Isaev va boshqalar. Ishlab chiqarishni tashkil etish va biznes-reja: darslik. – T.: Tafakkur, 2011. S.N. Yuldashev «Sanoat korxonalarida ishlab chiqarishni tashkil etish» fanidan kurs ishlarini bajarish bo'yicha uslubiy ko'rsatma. T.: TTESI. 2013.

**4. Tushuntirish xatining tuzilishi:** Kirish. Maxsulotning tavsifi. Asbob-uskunalar faoliyatini rejalashtirish va tashkil etish. Uramalar xisobi. Chiqindilar xisobi. Yigiruv-to'quv uskunalar unumdorliklari xisobi. Ishlab chiqarish dasturi xisobi. Utimlar bo'yicha mashinalar soni xisobi. Xulosa.

**5. Kurs ishini topshirish davri:** Reja 05.12.2015 Amalda \_\_\_\_\_

| Bo'limlar |   |   |   | Himoya |
|-----------|---|---|---|--------|
| 1         | 2 | 3 | 4 |        |
|           |   |   |   |        |

Maslahatchi: \_\_\_\_\_ dots. S.N. Yuldashev

Maslahatchi, dots.

S.N. Yuldashev

Kafedra mudiri, dots.

S.G. Kadirov

## **Kurs ishi rejasi**

1. Kirish
2. To'qimaning texnik parametrlari
3. Tipi saralanma tanlash asoslash
4. Yigiruv to'quv korxonalari texnologik zanjirini tanlash
5. O'timlar bo'yicha o'ramalar hisobi
6. O'timlar bo'yicha chiqindilar hisobi
7. Yigiruv va to'quv uskunalari unumdorliklari hisobi
8. Ishlab chiqariladigan mahsulot hajmini rejalashtirish
9. Xulosa

Foydalanilgan adabiyotlar ro'yxati

## Kirish

Mamlakatimiz mustaqilikka erishgandan so'ng iqtisodiy jihatdan juda ham orqada qolib ketgan sohalarni birin ketin rivojlantirish rejalarini ishlab chiqish zaruriyatini o'z oldiga maqsad qilib qo'ydi.

Hammaga ma'lumki mustaqilikka erishulgunga qadar mamlakat asosan Sobiq Ittifoq davlatiga xom-ashyo, ayniqsa, paxta xom ashyosi yetkazib beruvchi davlat edi. Bu esa xalqimizni yillar davomida og'ir mehnat sharoitida, iqtisodiy qiyinchiliklar bilan yashashga majburlar edi. Mamlakatda ishlab chiqarish deyarli to'xtab qolgan edi. Shunday murakkab ahvoldan keyin rivojlanish sari qo'yilgan dastlabki qadamlardan biri O'zbekiston Respublikasi mustaqillikning dastlabki yillaridanoq "Bozor munosabatlariga asoslangan erkin iqtisodiyot" yo'lini tanlash bo'ldi. Bu iqtisodiyot mamlakatda xususiy mulkchilikni shakllantirish, kichik biznes va tadbirkorlikni rivojlantirish, barcha sohalarda ishlab chiqarishni keng yo'lga qo'yish uchun keng imkoniyatlar yaratib berdi.

Endi bizning oldimizda turgan eng asosiy vazifalardan biri mamlakatda yetishtirilayotgan paxta-xom ashyosini yuqori sifatli tayyor mahsulot darajasiga keltiradigan, zamonaviy dastgohlar bilan jihozlangan, to'qimachilik korxonalari barpo etish va aholining talabini qondirish masalasi hisoblanadi.

Ma'lumki to'qimachilik korxonalarida mahsulot tannarxining asosiy qismini paxta tolasi tashkil etadi. Demak, mahsulotning narxi va sifat ko'rsatkichi, eng avvalo, xom ashyodan oqilona foydalanishga, korxonada ishlab chiqarish jarqyonini to'g'ri tashkil etishga, belgilangan normalarga rioya qilishga bevosita bog'liq. Bundan tashqari korxonada ishlayotgan har bir ishchi xodimlarning malakasi, rahbar xodimlarning boshqaruv usullari, ish vaqtidan to'g'ri foydalanish kabi omillar ham yuqori sifatli mahsulot ishlab chiqarish jarayoniga bevosita ta'sir ko'rsatadi.

## 2.To'qimani texnik parametrlari

| To'qima nomi | Artikul raqami | Xom toqima eni | Ipning chiziqiy zichligi,teks |       |       | Iplar soni |      | Iplar soni 10sm |       | Ipning qisqarishi |       | Tig' raqami |                     |      | O'rilish           | Dastgoh turi | To'qima sirt zichligi | Chiqindilar |       | 100m to'qima og'irligi chiqindilar bilan birga |        |
|--------------|----------------|----------------|-------------------------------|-------|-------|------------|------|-----------------|-------|-------------------|-------|-------------|---------------------|------|--------------------|--------------|-----------------------|-------------|-------|------------------------------------------------|--------|
|              |                |                | Tanda                         | Arqoq | mil k | jami       | Milk | Tanda           | Arqoq | Tanda             | Arqoq | Raqam       | Tishdagi iplar soni |      |                    |              |                       | Tanda       | Arqoq | Tanda                                          | Arqoq  |
|              |                |                |                               |       |       |            |      |                 |       |                   |       |             | O'rta               | milk |                    |              |                       |             |       |                                                |        |
| 1            | 2              | 3              | 4                             | 5     | 6     | 7          | 8    | 9               | 10    | 11                | 12    | 13          | 14                  | 15   | 16                 | 17           | 18                    | 19          | 20    | 21                                             | 22     |
| Moleskin     | 3052           | 90             | 25                            | 29    | 25    | 2356       | 48   | 259             | 551   | 4.3               | 8.5   | 80          | 3                   | 4    | Murakkab sarja 8/3 | AT           | 243                   | 0.74        | 1.4   | 6.064                                          | 15.717 |
| Hisob uchun  |                | 160            |                               |       |       | 4170       |      |                 |       |                   |       |             |                     |      |                    | COMET        |                       |             |       |                                                | 10.733 |

### 3.Tipli saralanma tanlash va asoslash

Paxta tolasi halqali va pnevmomexanik usulda yigiraladigan iplarga bo'linadi.

Uni qalinligi,qaysi sistemada yigirilayotganligi hisobga olinib, davlat va tarmoq standartlariga asoslanib, 25 teks ip uchun quyidagi tipli saralanma tanlayman:

2-jadval

| Ipning chiziqiy zichligi (teks) | Ipning nomeri | Tipli saralanma       | Izoh                                           |
|---------------------------------|---------------|-----------------------|------------------------------------------------|
| 1                               | 2             | 3                     | 4                                              |
| 25                              | 40            | 5-II<br>5 -I<br>5-III | Bazis tola 60%<br>dan kam<br>bo'lmasligi lozim |

Kurs ishi uchun quyidagi tipli saralanma ulushlarini qabul qilamiz:

5-tip II-sort uchun -60%

5-tip I-sort uchun -15%

5-tip III-sort uchun -25%

Jami 100% va unga qaytimlar qo'shish tavsiya etiladi.

#### **4.Yigiruv to'quv korxonalari texnologik zanjirini tanlash.**

##### **a)Yigiruv tsehini texnologik zanjiri:**

Yigiruv korxonalari uchun texnologik zanjir ketma ketligini uskunalar zanjirini tanlashda olinadigan ip qaysi sistemada yigirilishi hisobga olinadi .

Men o'z kurs ishimni bajarish uchun 25 teks ip yigirishda RIETER firmasi uskunalarini qabul qilaman.

B-125 B-avtomatik toy titgich

B-39 –bir silindrli tozalagich

B-139- tozalash mashinalariga tola taqsimlagich

B-38- tozalash mashinasi

C-501-tarash mashinasi

TD-03-Piltalash -1-2 o'tim

PST-1 Piliklash mashinasi

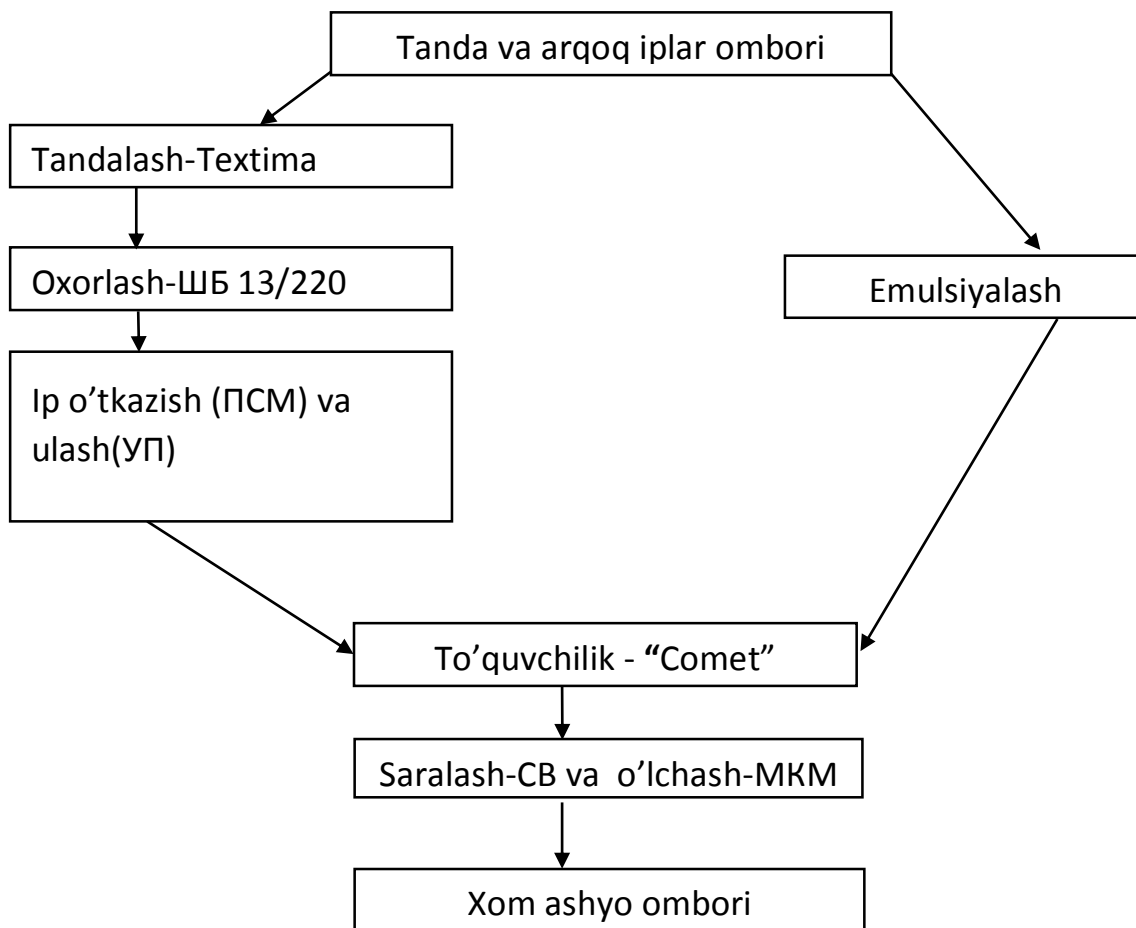
G-33-Halqali yigirish mashinasi

Yigiruv mashinasining asosiy vazifasi piltalash jarayonidan olingan piltani cho'zib ,ingichkalashtirib hosil bo'lgan piltani pishitib, kerakli chiiqiy zichlikdagi xom kalava ip ishlab chiqarishdir.

**b) Yigiruv korxonasining texnologik zanjiri:**

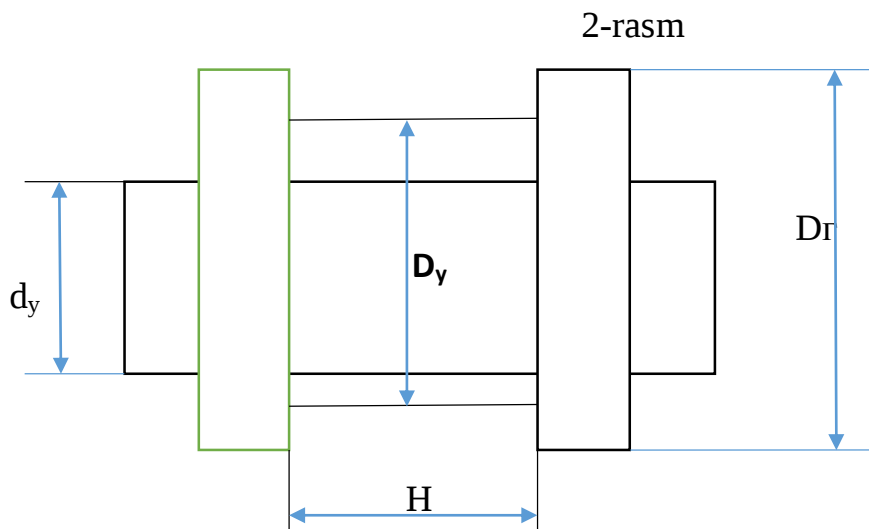
Berilgan kurs ishi rejamda tanda ipi chiziqliy zichligi 25 teks, arqoq ipi chiziqliy zichligi 29 teksga teng bo'lib quyidagi texnologik zanjir ketma ketligini tanlayman.

1-rasm



## 5) O'timlar bo'yicha o'ramalar hisobi.

I) To'quv g'altagi uchun o'ramalar hisobi.



$$H=1840\text{mm}=184\text{sm}$$

$$D_r=700\text{mm}=70\text{sm}$$

$$D_y=68\text{mm}=68\text{sm}$$

$$d_y=16\text{sm}$$

Hisoblashlar:

1) O'ram hajmini hisoblash.

$$V_{o'r} = \frac{\pi H (D_y^2 - d_y^2)}{4} = \frac{3.14 \cdot 184 (68^2 - 16^2)}{4} = 630913.9 \text{ sm}^3$$

2) G'altakdagi oxorlangan tanda iplar og'irligi hisobi:

$$G_{TH}^{max} = \frac{V_{o'r} \cdot \gamma}{1000} = \frac{630913.9 \cdot 0.5}{1000} = 315.5 \text{ kg}$$

Bu yerda:

$$\gamma = 0.48 \div 0.52$$

3) Bir bo'lak to'qima olish uchun sarf bo'ladigan iplarning uzunligi;

$$L_{oxun} = \frac{L_c}{1 - \frac{\alpha_T}{100}} = \frac{40}{1 - \frac{4.3}{100}} = 43 \text{ m}$$

4) Bir to'quv g'altagidan olinadigan to'qima o'ramalarining soni:

$$K_{o'r} = \frac{I_{TH}^{max}}{n * L_{oxun}} = \frac{3053}{5 * 43} = 14 \text{ o'rama}$$

$n$  – reyklar soni

5)  $I_{TH}^{max}$  –to'quv g'altagidagi iplarning maksimal uzunligi

$$I_{TH}^{max} = \frac{G_{TH}^{max}}{T_T \left(1 - \frac{B}{100}\right) * n_y} = \frac{315.5 * 10^6}{25 * \left(1 - \frac{0.9}{100}\right) * 4170} = 3053m$$

Bu yerda:

$$B = 0.7 \div 1 = 0.9$$

6.)To'quv g'altagidagi tanda iplarning muvofiq uzunligi.

$$I_{TH}^{Myo} = K_{o'r} * n * L_{oxun} + L_{np} + L_{TK} = 14 * 5 * 43 + 1 + 3 = 3010m$$

Bu yerda:

$L_{np}, L_{TK}$  –To'quv g'altagida qolgan qoldiq iplar soni.

$L_{np} = 2$  metrgacha

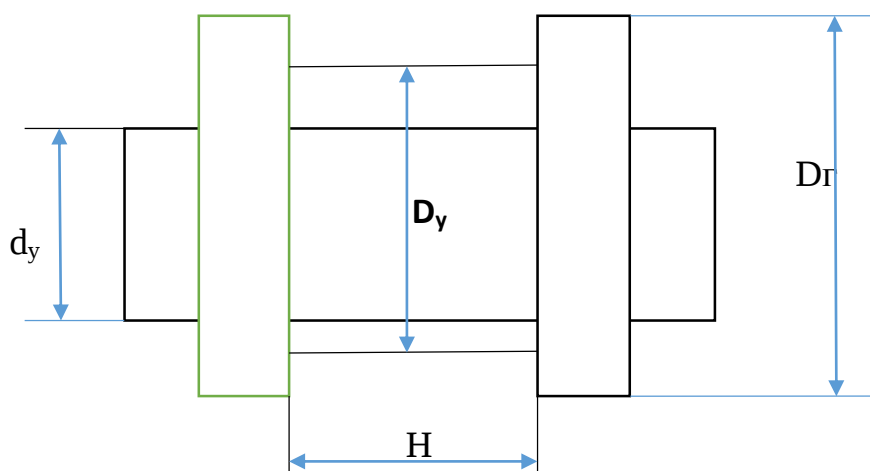
$L_{TK} = 0.5$  gacha

7.)To'quv g'altagidagi tanda iplarning muvofiq og'irligi.

$$G_{TH}^{Myo\phi} = \frac{I_{TH}^{Myo} * n_y * T_T}{10^6} = \frac{3010 * 4170 * 25}{10^6} = 313.8 \text{ kg.}$$

II) Tandalash g'altagi uchun o'ramalar hisobi.

3-rasm



$$H=2060\text{mm}=206\text{sm}$$

$$D_r=800\text{mm}=80\text{sm}$$

$$D_y= D_r -20\text{mm}=800-20=78\text{sm}$$

$$d_y=25\text{sm}$$

Hisoblashlar:

1) O'ram hajmini hisoblash.

$$V_{o'r} = \frac{\pi H (D_y^2 - d_y^2)}{4} = \frac{3.14 * 206 * (78^2 - 25^2)}{4} = 882774 \text{ sm}^3$$

2) Tanda g'altagidagi iplarning maksimal og'irligi hisobi:

$$G_{T_F}^{max} = \frac{V * g}{1000} = \frac{882774 * 0.51}{1000} = 450.21 \text{ kg}$$

Bu yerda:

$$g=0.5 \div 0.52$$

3)  $I_{T_H}^{max}$  -to'quv g'altagidagi iplarning maksimal uzunligi

$$I_{T_F}^{max} = \frac{G_{T_F}^{max} * 10^6}{T_T * M_c} = \frac{450.21 * 10^6}{25 * 834} = 21593 \text{ metr.}$$

Bu yerda:

$M_c$ -tanda g'altagidagi iplar soni

$$M_c = \frac{n_y}{K_f} = \frac{4170}{834} = 834 \text{ g'altak}$$

$K_f$  – guruhdagi tanda g'altaklari soni

$m_p$ -tandalash romining sig'imi

6.)Tanda g'altagidagi iplarning muvofiq uzunligi.

$$I^{Myo}_{T_F} = I^{max}_{T_H} * K_H + L_{ox} = 3053 * 7 + 55 = 21426 \text{ m}$$

Bu yerda:

$K_H$  –bir guruh tanda g'altaklaridan olinadigan to'quv g'altaklari soni

$$K_H = \frac{I^{max}_{T_F}}{I^{max}_{T_H}} = \frac{21593}{3053} = 7 \text{ g'altak}$$

$L_{ox}$ -tanda g'altaklaridagi qoldiq iplar hisobi:

$$L_{ox} = L_1 + L_2 \left( \frac{K_H - 1}{K_H} \right) = 35 + 27 * \left( \frac{8 - 1}{8} \right) = 55 \text{ dona}$$

$L_1$ = tandalash g'altagidagi qolgan qoldiq iplar soni

$$L_1 = 30 - 40 \text{ metr}$$

$L_2$ =iplarni bosh qoldig'i

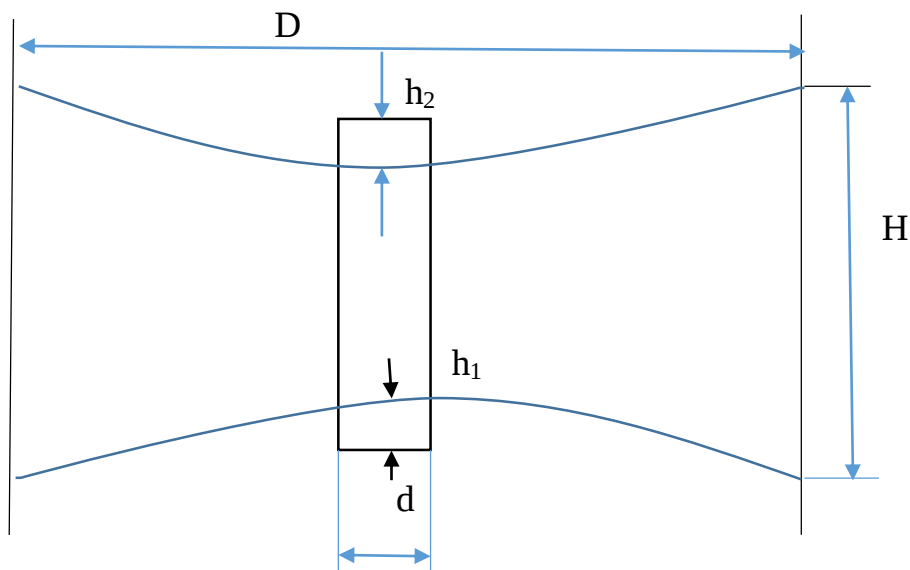
$$L_2 = 25 - 30 \text{ metr}$$

7)tanda g'altagidagi iplarning muvofiq og'irligi.

$$G^{Myo\phi}_{T_H} = \frac{I^{Myo}_{T_F} * M_c * T_T}{10^6} = \frac{21426 * 834 * 25}{10^6} = 446.7 \text{ kg}$$

### III) Silindrsimon shakldagi bobinaning hisobi.

4-rasm



$$H=90\text{mm}=9\text{sm}$$

$$D=230\text{mm}=23\text{sm}$$

$$d=55\text{mm}$$

$$h=5\text{mm}$$

Hisoblashlar:

1) O'ram hajmini hisoblash.

$$\begin{aligned} V &= \frac{\pi}{12} [(2h_1(D^2 + D * d + d^2) + 3HD^2 - 3(2h_2 + H)d^2)] = \\ &= \frac{\pi}{12} [(2 * 0.5(23^2 + 23 * 5.5 + 5.5^2) + 3 * 9 * 23^2 - 3(2 * 0.5 + 9) * 5.5^2)] = \\ &= 3679 \text{ sm}^3 \end{aligned}$$

2) Bobinadagi ipning og'irligi hisobi:

$$G_{\text{f}}^{\text{max}} = \frac{V * \varphi}{1000} = \frac{3679 * 0.8}{1000} = 2.94 \text{ kg}$$

$$\varphi = 0.65 - 0.99 \text{ gr} = 0.8 \text{ gr}$$

$$3) I_{\text{6}}^{\text{max}} = \frac{G_{\text{6}} * 1000}{T_{\text{T}}} = \frac{2.94 * 1000}{25} = 117600 \text{ m}$$

4) Bitta bobinadan olinadigan tanda g'altaklari soni

$$K_{T_F} = \frac{I_6}{I_{max_{T_F}}} = \frac{117600}{21426} = 5$$

5) Bobinadagi ipning muofiq uzunligi

$$I^{Myo\phi}_{\cdot 6} = I^{Myo\phi}_{\cdot T_F} * K_{T_F} = 21426 * 5 = 107130m$$

6) Bobinadagi ipning muofiq og'irligi

$$3) G^{Myo\phi}_{\cdot 6} = \frac{I^{Myo\phi}_{\cdot 6} * T_T}{1000} = \frac{107130 * 25}{1000} = 2.7 kg$$

### O'ramalar hisobi yakuniy jadvali

3-jadval

| O'ramalar turi  | V        | $\alpha_T$ yoki g | $G^{max}_{\text{кг}}$ | $G^{Myo\phi}_{\cdot \text{кг}}$ | $I^{max}_{\text{метр}}$ | $I^{Myo\phi}_{\cdot \text{метр}}$ |
|-----------------|----------|-------------------|-----------------------|---------------------------------|-------------------------|-----------------------------------|
| To'quv g'altagi | 630913,9 | 0,5               | 315,5                 | 313,8                           | 3053                    | 3010                              |
| Tanda g'altagi  | 882774   | 0,51              | 450,21                | 446,7                           | 21593                   | 21426                             |
| Bobina          | 3679     | 0,8               | 2,94                  | 2,7                             | 117600                  | 107130                            |

## 6.O'timlar bo'yicha chiqindilar hisobi.

### a) Yigiruv o'timi bo'yicha chiqindilar .

| T/r  | Chiqindilar nomi                                                 | Jami miqdori | Shu jumladan |            |              | saralash | tarash | Piltalash |         | Piliklash | Yigirish |
|------|------------------------------------------------------------------|--------------|--------------|------------|--------------|----------|--------|-----------|---------|-----------|----------|
|      |                                                                  |              | 5-II<br>60%  | 5-I<br>15% | 5-III<br>25% |          |        | 1-o'tim   | 2-o'tim |           |          |
| 1    | 2                                                                | 3            | 4            | 5          | 6            | 7        | 8      | 9         | 10      | 11        | 12       |
| I.   | Qaytimlar                                                        |              |              |            |              |          |        |           |         |           |          |
| 1.   | Pilta qaytimi                                                    | 0.983        | 0.382        | 0.141      | 0.26         | ---      | 0.295  | 0.216     | 0.216   | 0.256     | ---      |
| 2    | Pilik qaytimi                                                    | 0.333        | 0.198        | 0.048      | 0.087        | -        | -      | -         | -       | 0.2       | 0.134    |
|      | Jami qaytimlar                                                   | 1.316        | 0.78         | 0.189      | 0.347        | -        | 0.295  | 0.216     | 0.216   | 0.456     | 0.134    |
| II.  | Ko'zga ko'rinadigan chiqindilar:                                 |              |              |            |              |          |        |           |         |           |          |
| 1.   | Momiq                                                            | 1.617        | 1.02         | 0.232      | 0.365        | -        | -      | -         | -       | -         | 1.617    |
| 2.   | Halqachalar                                                      | 0.1          | 0.06         | 0.015      | 0.025        | -        | -      | -         | -       | -         | 0.1      |
| 3.   | Karda tarandisi                                                  | 1.926        | 1.14         | 0.261      | 0.525        | -        | 1.926  | -         | -       | -         | -        |
| 4.   | Savashdagi momiq va yong'oqchalar                                | 1.632        | 0.906        | 0.251      | 0.475        | 1.632    | -      | -         | -       | -         | -        |
| 5.   | Tarashdagi momiq va yong'oqchalar                                | 1.555        | 0.942        | 0.181      | 0.432        | -        | 1.56   | -         | -       | -         | -        |
| 6.   | Toza suprundi                                                    | 0.204        | 0.12         | 0.022      | 0.062        | -        | 0.041  | 0.041     | 0.041   | 0.041     | 0.041    |
| 7.   | Ip qaytimi                                                       | 0.1          | 0.06         | 0.015      | 0.025        | -        | -      | -         | -       | -         | 0.1      |
| 8.   | Tarash tayoqchasidagi,tepa valikdagi,tozalagichdagi momiqlar     | 0.152        | 0.09         | 0.015      | 0.047        | -        | 0.06   | 0.023     | 0.023   | 0.023     | 0.023    |
| 9.   | Ifloslangan suprundi                                             | 0.204        | 0.12         | 0.022      | 0.062        | 0.07     | 0.07   | 0.016     | 0.016   | 0.014     | 0.016    |
| 10.  | Boshqa chiqindilar(yerto'la changi,filtr momig'I,moyli suprundi) | 0.397        | 0.24         | 0.045      | 0.112        | 0.238    | 0.159  | -         | -       | -         | -        |
|      | Jami ko'zga ko'rinadigan chiqindilar:                            | 7.887        | 4.698        | 1.059      | 2.13         | 1.94     | 3.816  | 0.08      | 0.08    | 0.078     | 1.892    |
| III. | Ko'zga ko'rinmaydigan chiqindilar:                               | 1.95         | 1.2          | 0.15       | 0.6          | 1.17     | 0.78   | -         | -       | -         | -        |
| IV.  | Qaytmaydigan chiqindilar:                                        | 2.05         | 1.224        | 0.291      | 0.535        | 1.23     | 0.82   | -         | -       | -         | -        |
| V.   | Ko'rinadigan, ko'rinmaydigan,qaytmaydigan va qaytimlar hammasi:  | 13.203       | 7.902        | 1.689      | 3.612        | 4.34     | 5.711  | 0.296     | 0.296   | 0.534     | 2.026    |
| VI.  | Olinadigan mahsulot miqdori                                      | -----        | -----        | -----      | -----        | 95.66    | 89.949 | 59.653    | 59.357  | 88.823    | 86.797   |

### Orttirish koefitsienti hisobi

Orttirish koefitsienti bir birlik mahsulot ishlab chiqarish uchun shu o'timdagi mahsulotga qancha xom-ashyo zarurligini ko'rsatadi va quyidagi formula bilan topiladi:

$$K_{z,i} = \frac{B_{zi}}{B_{yig}}$$

1) Saralash bo'limi uchun

$$K_{z,sar} = \frac{B_{sar}}{B_{yig}} = \frac{95.66}{86.797} = 1.102$$

2) Tarash bo'limi uchun:

$$K_{z,tar.} = \frac{B_{tar.}}{B_{yig}} = \frac{89.949}{86.797} = 1.031$$

3) Pitalash 1-o'tim uchun

$$K_{z,pil.1} = \frac{B_{pil.1}}{B_{yig}} = \frac{89.653}{86.797} = 1.036$$

4) Pitalash 2-o'tim uchun:

$$K_{z,pil.2} = \frac{B_{pil.2}}{B_{yig}} = \frac{89.357}{86.797} = 1.029$$

5) Piliklash bo'limi uchun:

$$K_{z,pilik.} = \frac{B_{pilik.}}{B_{yig}} = \frac{88.823}{86.797} = 1.023$$

6) Yigiruv bo'limi uchun:

$$K_{z,yig.} = \frac{B_{yig.}}{B_{yig}} = \frac{86.797}{86.797} = 1.$$

b) To'quvchilik o'timi uchun chiqindilar hisobi.

To'qimachilik korxonalarining mahsulot tannarxini 60-70% ni xom- ashyo tashkil etadi.

Shuning uchun ishlab chiqarishdagi xom ashyodan samarali foydalanish korxonaning iqtisodiy ko'rsatkichlarini yaxshilashga olib keladi.

Chiqindilarni hisoblashda ishlab chiqarishni uzluksiz ta'minlash bilan bog'liq bo'lgan chiqindilarnigina hisobga olish zarur.

Men kurs ishim uchun to'quvchilik o'timlari bo'yicha chiqindilar foizlarini zarur formulalar bilan hisoblayman.

1)Tandalash o'timi chiqindilar hisobi:

$$ch_t = \frac{l_1 + l_2 * K + l_3}{I^{Myo\Phi}_{\text{г}}} = \frac{1.5 + 2 * 0.04 + 8}{107130} * 100 = 0.008\%$$

Bu yerda:

$l_1$ -bobinalarni almashtirishdagi ulash jarayonidan chiqadigan iplar=1-2metr

$l_2$ -uzulishlarni bartaraf qilishdagi iplar uzunligi=2m gacha

$l_3$ -bobinadan tanda g'altagigacha qolgan qoldiq iplar=10 mgacha

$K$ -bobinalarni almashtirishdagi uzulishlar:

$$K = \frac{O_b * I^{Myo\Phi}_{\text{г}}}{10^6} = \frac{0.4 * 107130}{10^6} = 0.04$$

$O_b$  – 1000000 yakka ipga to'g'ri keladigan uzulishlar = 0.4

2.)Oxorlash o'timi chiqindilar hisobi:

$$ch_{ox} = \frac{l_1 + l_2 * (\frac{K_F - 1}{K_F})}{I^{Myo\Phi}_{\text{TF}}} = \frac{35 + 25 * (\frac{5 - 1}{5})}{21426} * 100 = 0.257\%$$

$l_1$ - tandalash g'altagidagi qolgan qoldiq iplar=30-40 mgacha=350metr

$l_2$ - iplarning boshqoldiq iplar=25-30m gacha=25metr

$K_F$  – gurhdagi tanda g'altaklai soni

3) **Ip o'tkazishda chiqadigan chiqindilar hisobi:**

$$ch_{o'tk.} = \frac{l_n}{I^{Myo\Phi}_{\text{TH}}} = \frac{0.5 * 100}{3010} = 0.016\%$$

$$l_n = 03 - 0.08 \text{ metr gacha} = 0.05m$$

**4) Ulash jarayonidan chiqadigan chiqindilar hisobi:**

$$ch_{ulash.} = \frac{l_1 + l_2}{I^{Myo\Phi}_{TH}} * 100 = \frac{0.4 + 1.5}{3010} * 100 = 0.063$$

$$l_1 = 0.4 \text{ gacha}$$

$$l_2 = 1.5 \text{ metr gacha}$$

**Ip o'tkazish va ulash o'timidan chiqadigan umumiy chiqindilar hisobi:**

$$ch_{umum.} = \frac{ch_{o'tk.} * \%o'tk + ch_{ulash.} * \%ulash}{100} = 0.016 * 0.015 + 0.063 * 0.085 = 0.06\%$$

**5) To'quv dastgohlari chiqindilar hisobi:**

**a) Tanda ipi chiqindilar hisobi:**

$$ch^{T.}_{T.ip} = \frac{l_1 + l_2}{I^{Myo\Phi}_{TH} - l_n} * 100 = \frac{0.5 + 0.1}{3010 - 1} * 100 = 0.019\%$$

$l_1$ -ip o'tkazish mashinasida yangi taxlanayotgan tanda iplarini kesib tashlanayotgan qismi

$$l_1 = 0.4 - 0.6 = 0.5$$

$l_2$ -to'quv Dastgohida iplarni uzulishidan hosil bo'ladigan chiqindilar

$$l_2 = 0.5 \text{ m gacha} \quad l_2 = 0.1$$

$l_n$ -ip o'tkazish vaqtida sarf bo'ladigan chiqindilar

$$l_n = 1 \text{ m gacha} \quad l_n = 1$$

**b) Arqoq ipining chiqindilar hisobi:**

$$ch^A_{arq.ip} = \frac{l_1 + l_2 * K + l_3}{I^{Myo\Phi}_{\phi}} * 100 = \frac{2 + 1 * 47.04 + 7}{117600} * 100 = 0.047\%$$

Bu yerda:

$l_1$ -bobinalarni taxtlashda sarf bo'ladigan chiqindilar = 1-3 metr

$l_2$ -arqoq ipi uzulganda uni bog'lashda sarf bo'ladigan chiqindilar = 0.5-1.5m gacha

$l_3$ -to'quv dastgohida sodir bo'lgan nuqsonlarni yo'qotishda sarf bo'ladigan chiqindilar = 5-10 mgacha

$K$ -bobinada arqoq iplarni uzulishlar soni:

$$K = \frac{O_b * I^{Max}_{\phi}}{10^4} = \frac{4 * 117600}{10^4} = 0.04$$

$O_b$  – arqoq iplarni 1000000m yakka ipga to'g'ri keladigan uzulishlar soni  
= 3 – 4 gacha

## 6)Qayta o'rashdagi chiqindilar.

$$ch_{qat..orr} = \frac{l_1 + l_2 * K + l_3}{I^{myof}_H} * 100 = \frac{0.5 + 1 + 2}{2000} * 100 = 0.175$$

Bu yerda:

$l_1$ -iplarni bog'lashda chiqadigan chiqindilar=0.25-0.5metr

$l_2$ -tufta tutgichga naychani joylashtirib yangi naychani uchini topishda sarf bo'ladigan chiqindilar =0.5-2m gacha

$l_3$ -naychan almashtirishda eskisini oxirida qoladigan ip uzunligi =1-3 mgacha

$I^{myof}_H$  – naychaning muofiq uzunligi=2000

O'timlar bo'yicha chiqindilar hisobining jamlanma jadvali

5-jadval

| № | Jarayonlarning nomlanishi | Tanda bo'yicha chiqindilar % | Arqoq bo'yicha chiqindilar % |
|---|---------------------------|------------------------------|------------------------------|
| 1 | 2                         | 3                            | 4                            |
| 1 | Qayta o'rash              | 0.175                        |                              |
| 2 | Tandalash                 | 0.008                        |                              |
| 3 | Oxorlash                  | 0.257                        |                              |
| 4 | Ip o'tkazish va ulash     | 0.06                         |                              |
| 5 | To'quvchilik              | 0.019                        | 0.047                        |
|   | Jami:                     | 0.519                        | 0.047                        |

100 metr to'qima uchun chiqindilarni hisobga olgan hildagi ip sarfi:

A) Tanda ipi uchun:

$$M'_T = \frac{M_T}{1 - \frac{\sum chiq.T}{100}} = \frac{10.733}{1 - \frac{0.519}{100}} = 10.78 \text{ kg}$$

B) Arqoq ipi uchun:

$$M'_A = \frac{M_A}{1 - \frac{\sum chiq.A}{100}} = \frac{27.819}{1 - \frac{0.047}{100}} = 27.83 \text{ kg}$$

## 7.Yigiruv va to'quv tsehi uskunalari unumdorliklari hisobi.

### a)Yigiruv mashinasi uchun unumdorlik va FVK hisobi.

6-jadval

| №                                                | O'zbekyengilsano<br>at AK                                                                    | Yigiruv mashinasi<br>uchun normalash<br>kartasi | O'lchov<br>birligi         | For<br>mula<br>dagi<br>belgi<br>si | Ko'rsatkichlar |
|--------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------|------------------------------------|----------------|
| I. Mashina tavsifi                               |                                                                                              |                                                 |                            |                                    |                |
| 1                                                | Mashinadagi urchuqlar soni                                                                   |                                                 | urchuq                     | $m_{ypq}$                          | 960            |
| 2                                                | Urchuqning aylanish tezligi                                                                  |                                                 | $min^{-1}$                 | $n_{yp}$                           | 22000          |
| II. Mashinani ishga taxtlash va mahsulot tavsifi |                                                                                              |                                                 |                            |                                    |                |
| 1                                                | Galtakdagi pilik og'irligi                                                                   |                                                 | kg                         | $G_F$                              |                |
| 2                                                | Naychadagi ip og'irligi                                                                      |                                                 | gramm                      | $G_H$                              | 90             |
| 3                                                | Buralishlar ko'effitsenti                                                                    |                                                 | koef.                      |                                    | 39.8           |
| 4                                                | 1 metr ipga to'g'ri keladigan buralishlar soni                                               |                                                 | Bur/m                      | K                                  | 796            |
| 5                                                | Ipning chiziqiy zichligi                                                                     |                                                 | teks                       | $T_T$                              | 25             |
| 6                                                | Soatiga 1000 urchuqqa to'g'ri keladigan uzulishlar soni:<br>a) Yigirilgan ipda<br>b) Pilikda |                                                 | Yakka ip<br>Yakka<br>pilik | $\chi_{ип}$<br>$\chi_{пилик}$      | 50<br>8        |
| III Tashkiliy shartlar tavsifi                   |                                                                                              |                                                 |                            |                                    |                |
| 1                                                | Smena davomiyligi                                                                            |                                                 | min.                       | $T_{cm}$                           | 480            |
| 2                                                | Yigiruvchining marshrut uzunligi                                                             |                                                 | metr                       | $B_{\dot{y}}$                      | 174            |
| 3                                                | Yigiruvchining harakat tezligi                                                               |                                                 | m/sek                      | V                                  | 0.7            |
| 4                                                | Yigiruvchining aylanish notekisligi ko'effitsenti                                            |                                                 | koef.                      | $\kappa_o$                         | 1.6            |
| 5                                                | Uchastkani aylanish uchun ketgan vaqt                                                        |                                                 | min                        | $T_{\dot{y}}$                      | 16             |
| 6                                                | Yigiruvchining bandlik ko'effitsenti                                                         |                                                 | koef.                      | $K_{3p}$                           | 0.85           |
| 7                                                | Mahsulot yigiruvchilar soni                                                                  |                                                 | kishi                      | $\chi_6$                           | 3              |

## Hisoblashlar

a)Yigiruv korxonasi.

Hisoblash:

1) Mashinaning nazariy ish unumdorligi hisobi.

$$A_H = \frac{60 * n_{yp} * T_{un}}{K * 1000^2} = \frac{60 * 2200 * 25}{796 * 1000^2} = 0.041 kg/soat$$

$$K=796$$

$$A_H = 0.041 \frac{kg}{soat} \text{ 1 urchuq}$$

$$A_H = 41 \frac{kg}{soat} \text{ 1000 urchuq}$$

2) Mashina vaqti hisobi

$$t_m = \frac{60 * G_{yp}}{A_H} = \frac{60 * 90}{41} = 132 \text{ min}$$

$G_{yp}$ -naychadagi ip og'irligi

### Qoplanmaydigan yordamchi vaqt hisobi

Qoplanmaydigan yordamchi vaqt  $t_{vn}=0$  ga teng, shuning uchun  $K_a=1.0$

1) Ish joyiga hizmat ko'rsatish vaqti hisobi

a) Naychani olishga sarflanadigan vaqt :

$$0.6 * 333.4 = 200.64 \text{ sek.}$$

b) Mashinani syomga tayyorlash va syomdan keyin yurgizib yuborish vaqti:

$$20 * 1 = 20 \text{ sek.}$$

$$\text{Jami} = 200.64 + 20 = 220.64 \text{ sek.}$$

$$t_{bn} = 220.64 \text{ sek,} = 3.3 \text{ min}$$

$$\text{Xodisalar soni} = \frac{m_{yp} * K_{CM}}{q_6} = \frac{960 * 1.045}{3} = 334.3$$

“a” guruhi bo'yicha to'xtashlar koeffitsienti hisobi:

$$K_a = \frac{t_m}{t_m + t_{bn}} = \frac{133}{133 + 3.3} = 0.976$$

2) Ish joyiga hizmat ko'rsatish vaqtini  $T_{sm}$  ga nisbatan fond hisobida

c) Mashinani joriy remontga va profilaktik ko'zdan kechirishga sarflanadigan vaqt – 7 min.

d) Urchuqlarni almashtirish va zapravka qilish vaqti – 8min

$$\text{Jami} = 15 \text{ min}$$

$$B = \frac{T_b \cdot 100}{T_{sm}} = \frac{15 \cdot 100}{480} = 3.1\%$$

3) “B” guruhi bo'yicha to'xtalishlar koeffitsienti hisobi

$$K_b = \frac{100 - B}{100} = \frac{100 - 3.1}{100} = 0.969$$

4) Smena maboytida 100 ta urchuqqa to'g'ri keladigan uzilishlar hisobi

a) Pilta tazlarini o'rnatish

$$\varphi_n = \frac{A_n \cdot 100 \cdot K_a \cdot K_b \cdot T_{sm}}{G_n} = \frac{41 \cdot 100 \cdot 0.969 \cdot 0.976 \cdot 8}{2151} = 31.02 \text{ marta}$$

b) Uzilgan iplarni ulash

$$\varphi_{un} = \varphi' \cdot K_a \cdot K_b \cdot T_{sm} = 50 \cdot 0.969 \cdot 0.976 \cdot 8 = 379 \text{ marta}$$

c) Ishlatib bo'lgan g'altakni o'rnatish:

$$\varphi_{raj} = \frac{\varphi_n \cdot \varphi'}{100} = \frac{8 \cdot 31.02}{100} = 2.5 \text{ marta.}$$

Yigiruvchining smena maboynida 1000 ta urchuqga to`g`ri keladigan ish bilan  
bandlik hisobi

7-jadval

| № | Ish usullari                                          | Usullarning davom etish vaqti, sek. | Usullar soni | Umumiy vaqti, sek.          |
|---|-------------------------------------------------------|-------------------------------------|--------------|-----------------------------|
| 1 | Pilikni o`rnatish                                     | 24                                  | 31.02        | 744.48                      |
| 2 | Uzilgan ipni ulash                                    | 5                                   | 379          | 1895                        |
| 3 | G`altakni o`rnatish                                   | 30                                  | 2.5          | 75                          |
|   | Jami                                                  | -                                   | -            | 2714.48                     |
| 1 | Mikropauzalar koeffitsenti – 0.9 hisobida             | -                                   | -            | 2443.032                    |
| 2 | Ip o`rash zonasini tozalash                           | 240                                 | 2            | 480                         |
| 3 | Chiqarish vallarining birikmalarini changdan tozalash | 200                                 | 2            | 400                         |
| 4 | Chiqarish vallaridan keyingi zonani artib tozalash    | 200                                 | 2            | 400                         |
| 5 | Yigirish zonasini tozalash                            | 240                                 | 2            | 480                         |
| 6 | Ta`mirlash zonasini va mashina tagini tozalash        | 240                                 | 2            | 480                         |
| 7 | Polni supurish                                        | 180                                 | 4            | 720                         |
|   | Hammasi bo`lib $T_z$                                  |                                     |              | 5403.22<br>sek<br>90.05 min |

Yigiruvchining xizmat ko`rsatish normasi hisobi (urchuq)

$$H_0 = \frac{T_{CM}}{T_z} \cdot K_{3p} = \frac{480}{90.05} \cdot 0.85 = 4 \text{ tomon}$$

Xizmat ko'rsatish normasini  $H_0 = 2$  mashina (1920 urchuq) deb qabul qilamiz

5) Iplar uzilib o'raltirilmasligi koeffitsienti hisobi

$$K_n = 1 - \frac{C_n}{100} = 1 - \frac{1.56}{100} = 0.984$$

$C_n$  - ip o'raltirilmayotgan urchuqlar o'rtacha foizi(%)

$$C_n = C_o + C_m + C_n = 1.06 + 0.2 + 0.3 = 1.56\%$$

$C_o$  - ip uzilishi natijasida ip o'raltirilmayotgan urchuqlar foizi

$$C_o = \frac{r_o \cdot K_o \cdot T_o}{1200} = \frac{50 \cdot 1.6 \cdot 16}{1200} = 1.06\%$$

$C_m$  - texnik sabablarga ko'ra ip o'raltirilmayotgan urchuqlar foizi -0.3%

$C_n$  - podmotka tufayli ip o'raltirilmaslik foizi -0.2%

6) Foydali vaqt koeffitsienti hisobi

$$FVK = K_a \cdot K_b \cdot K_n = 0.976 \cdot 0.969 \cdot 0.984 = 0.931$$

7) Mashinaning haqiqiy ish unumdorligi hisobi (kg/soat 1 urchuq uchun)

$$A_x = A_n \cdot FVK = 0.041 \cdot 0.931 = 0.0381 \frac{kg}{soat} \quad 1 \text{ urchuq}$$

38.1 kg/soat 100 urchuq

$$H_{KN} = \frac{H_1 \cdot 1000}{TEKS} = \frac{3.81 \cdot 1000}{25} = 1524 \text{ KN/soat}$$

8) Bitta mashina uchun (kg/soat)

$$A'_x = A_x \cdot m_{yp} = 0.0381 \cdot 960 = 36.576 \text{ kg/soat}$$

9) Mahsulot ishlab chiqarish normasi (kg/soat)

$$10) \quad H_b = A'_x \cdot H_0 = 36.576 \cdot 2 = 73.152 \text{ kg/soat}$$

**b)To'quv dastgohi uchun unumdorlik va FVK hisobi.**

8-jadval

| №                                                 | O'zbekyengilsanoat<br>AK                                                         | To'quv<br>mashinasi uchun<br>normalash<br>kartasi | O'lchov<br>birligi | Ko'rsatkichlar | Formuladagi<br>belgisi           |
|---------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------|--------------------|----------------|----------------------------------|
| I.Mashina tavsifi                                 |                                                                                  |                                                   |                    |                |                                  |
| 1.                                                | Dastgoh markasi                                                                  |                                                   | COMET              |                |                                  |
| 2.                                                | Tig' bo'yicha dastgohning eni                                                    |                                                   | mm                 | 194            | B <sub>g</sub>                   |
| 3.                                                | Bosh valning aylanish tezligi                                                    |                                                   | min <sup>-1</sup>  | 500            | n <sub>бв</sub>                  |
| II. Dastgoh ni ishga taxtlash va mahsulot tavsifi |                                                                                  |                                                   |                    |                |                                  |
| 1                                                 | Tig' bo'yicha to'qima eni                                                        |                                                   | sm                 | 166.9          | B <sub>ТТ</sub>                  |
| 2                                                 | Xom to'qima eni                                                                  |                                                   | sm                 | 160            | B <sub>ХТ</sub>                  |
| 3                                                 | Tanda ipining chiziqiy zichligi                                                  |                                                   | teks               | 25             | T <sub>Т</sub>                   |
| 4                                                 | Arqoq ipining chiziqiy zichligi                                                  |                                                   | teks               | 29             | T <sub>А</sub>                   |
| 5                                                 | 10 sm dagi arqoq iplar soni                                                      |                                                   | Ip/dm              | 551            | P <sub>a</sub>                   |
| 6.                                                | Tehnik sabablarga ko'ra o'zi to'xtalishlar soni                                  |                                                   | -----              | 0.05           | Ч <sub>д</sub>                   |
| 7.                                                | 1 metr to'qimaga to'g'ri keladigan uzulishlar:<br>c) Tanda ipda<br>d) Arqoq ipda |                                                   | 1 m yakka ip       | 0.37<br>0.8    | Ч <sub>Т</sub><br>Ч <sub>a</sub> |
| 8.                                                | Ishlab chiqariladigan mahsulot                                                   |                                                   | Moleskin-3052      |                |                                  |
| 9.                                                | Har bir qirqim uzunligi                                                          |                                                   | metr               | 43             | l <sub>м</sub>                   |
| 10                                                | To'quv g'altagidagi ip uzunligi                                                  |                                                   | metr               | 3610           | I <sub>ИГ</sub> <sup>МУВ</sup>   |
| 11                                                | Arqoq bobinasidagi ip og'irligi                                                  |                                                   | gr                 | 2940           | G <sub>б</sub>                   |
| III Tashkiliy shartlar tavsifi                    |                                                                                  |                                                   |                    |                |                                  |
| 1                                                 | Smena davomiyligi                                                                |                                                   | Soat,min.          | 8, 480         | T <sub>см</sub>                  |
| 2                                                 | Xizmat ko'rsatish usuli                                                          |                                                   | qorovullas h       | -              | -                                |
| 3                                                 | To'quvchining ish usuli bilan bandlik koeffitsenti                               |                                                   |                    | 0.6            | K <sub>зп</sub>                  |

I) Hisoblashlar.

1) Dastgohning nazariy ish unumdorligi

$$A_n = \frac{60 \cdot n_{\text{бв}} \cdot Z}{P_{\text{а}} \cdot 10} = \frac{60 \cdot 500 \cdot 2}{551 \cdot 10} = 10.8 \text{ m/soat}$$

2) Bir metr to'qimaga to'g'ri keladigan asosiy (mashina) vaqti

$$T_m = \frac{t}{A_n} = \frac{3600}{10.8} = 333.3 \text{ sek/metr}$$

3) Bir metr to'qimaga to'g'ri keladigan arqoq bobinalarini almashtirish chastotasi hisobi

$$r_b = \frac{(B_{\text{тб}} - 1) \cdot P_a \cdot 10 \cdot T_a}{100 \cdot G_6 \cdot 1000} = \frac{(166.9 - 4) \cdot 10 \cdot 551 \cdot 29}{100 \cdot 2940 \cdot 1000} = 0.09 \text{ metr}$$

$$r_{zo} = P_{um} \cdot 1.5 = 4430 \cdot 1.5 = 6645 \text{ ip}$$

Qoplanmaydigan yordamchi vaqt vaqt hisobi

9-jadval

| № | Ish usullari                                                  | Xodisaning davom etish vaqti |                       | Bir metrga to`g`ri keladigan hodisalar soni | Umumiy vaqt                                 |                                        |                            | Qo`shimcha vaqt t <sub>u</sub> |
|---|---------------------------------------------------------------|------------------------------|-----------------------|---------------------------------------------|---------------------------------------------|----------------------------------------|----------------------------|--------------------------------|
|   |                                                               | Dastgohning to`xtab turishi  | Usulning davom etishi |                                             | Dastgohning to`xtab turishi t <sub>vn</sub> | To`quvchining ish usuli bilan bandligi |                            |                                |
|   |                                                               |                              |                       |                                             |                                             | Umumiy t <sub>r</sub>                  | Hisob uchun t <sub>c</sub> |                                |
| 1 | Uzilgan iplarni ulash: Tanda Arqoq                            | 37<br>20                     | 38<br>21              | 0.37<br>0.08                                | 13.69<br>1.6                                | 14.06<br>1.68                          | 14.06<br>1.68              | 0.37<br>0.08                   |
| 2 | Texnik sabablarga ko`ra o`zi to`xtagan dastgohlarni yurgizish | 8                            | 10                    | 0.05                                        | 0.4                                         | 0.5                                    | 0.5                        | 0.1                            |
| 3 | Tandani to`g`irlab turish                                     | -                            | -                     | -                                           | 3.4                                         | 5.1                                    | 4.0                        | 1.7                            |
| 4 | Gazlamani tozalab turish                                      | -                            | 3                     | 0.6                                         | -                                           | 1.8                                    | 1.8                        | 1.8                            |
| 5 | Arqoq bobinalarini tayyorlash                                 | 6                            | 8                     | 0.09                                        | 0.54                                        | 0.72                                   | 0.72                       | 1.8                            |
| 6 | Arqoq bobinalarini almashtirish                               | 12                           | 14                    | 0.09                                        | --                                          | 1.26                                   | 1.26                       | 1.26                           |
| 7 | Gazlmani qirqib olish                                         | 165                          | -                     | 1/43                                        | 3.83                                        | -                                      | -                          | -                              |
| 8 | Tandani bog`lash va tayyorlash                                | 6645                         | -                     | 1/3610                                      | 1.73                                        | -                                      | -                          | -                              |
| 9 | Tandani ishlatib bo`lgach dastgohni tozalash                  | 2100                         | -                     | 1/3610                                      | 0.58                                        | -                                      | -                          | -                              |
|   | Jami                                                          |                              |                       |                                             | 25.77                                       | 25.12                                  | 24.02                      | 7.83                           |

- 4) Dastgohni to'xtab turish vaqti ( $t_{vn}$ ) ni asosiy vaqt ( $t_m$ ) ga nisbatan foiz hisobi
- $$a = \frac{t_{vn} \cdot 100}{t_m} = \frac{25.77 \cdot 100}{333.33} = 7.73\%$$
- 5) To'quvchining ish bilan bandligi vaqti ( $t_r$ ) ni asosiy vaqt ( $t_m$ ) ga nisbatan foiz hisobi
- $$p = \frac{t_p \cdot 100}{t_m} = \frac{25.02 \cdot 100}{333.33} = 7.53\%$$
- 6) To'quvchining (ish bilan) xizmat ko'rsatish zonasi hisobi
- $$H_0 = \frac{100+a}{p} \cdot K_{zr} = \frac{100+7.73}{7.53} \cdot 0.6 = 9.5 \cong 8 \text{ dastgoh}$$
- 7) Xizmat ko'rsatish normasi  $H_0 = 8$  dastgoh

Ish joyiga xizmat ko'rsatish vaqti hisobi

10-jadval

| № | Uzilgan iplarni ulash              | Hodisaning davom etish vaqti, sek | Smena maboynida hodisalar soni | Umumiy vaqt, sek |
|---|------------------------------------|-----------------------------------|--------------------------------|------------------|
| 1 | Uzilgan iplarni ulash              | -                                 | -                              | 30               |
| 2 | Grafikka binoan dastgohni tozalash | 1500                              | 1/15                           | 100              |
| 3 | Dastgohni moylash                  | 600                               | 4/15                           | 160              |
| 4 | Joriy remont va profilaktik ko'rik | -                                 | -                              | 900              |
| 5 | Boshqa mayda-chuyda ishlar         | -                                 | -                              | 60               |
|   | Jami $T_{ob}$                      | -                                 | -                              | 1350             |
| 6 | Shaxsiy ehtiyojlar $T_{ap}$        | -                                 | -                              | 240              |
|   | Hammasi bo'lib $T_b$               | -                                 | -                              | 1590             |

- 7) Ish joyiga xizmat ko'rsatish qoplanmaydigan vaqti  $T_{sm}$  ga nisbatan foizi hisobida quyidagicha bo'ladi:

$$b = \frac{T_b \cdot 100}{T_{sm}} = \frac{1590 \cdot 100}{28800} = 5.5 \%$$

- 8) Shaxsiy ehtiyojlarni hisobga olishda "b" guruhi koeffitsienti hisobi:

$$r_b = \frac{T_{sm} - T_{ob}}{T_{sm}} = \frac{28800 - 1350}{28800} = 0.953$$

$H_0 = 8$  va dastgohning eni 194 sm bo'lganda to'quvchining o'tib borishiga ketadigan vaqti = 4.0 sek

9) To'quvchining borishiga ketadigan vaqtiga 1 metr gazlamaga to'g'ri kelish hisobi

$$t_x = c''(r_T + r_{a'} + r_{g'}) \cdot 0.8 = 4.0 \cdot (0.32 + 0.05 + 0.05) \cdot 0.8 = 1.31 \text{ s/metr}$$

10) To'quvchining umumiy shoshilinch ishlar bilan bandligi.

$$T_{zs} = t_c' + t_x = 28.81 + 1.31 = 30.12 \text{ sek/metr}$$

11)  $P_a$  ning qiymatini hisoblash

$$P_a = \frac{t_{zs} \cdot K_b}{t_M + t_{vn} + t_x + t_d} = \frac{30.12 + 0.953}{333.33 + 25.77 + 1.31 + 5.77} = \frac{28.7}{366.18} = 0.078\%$$

12)  $K_{zu}$  ni hisoblash:

$$K_{zu} = P_a \cdot H_o \cdot 100 = 0.078 \cdot 8 \cdot 100 = 62.4\%$$

$H_o = 8$  dastgoh va  $K_{zu} = 62.4\%$  bo'lganda  $c' = 4.2\%$ .

13)  $t_c'$  ni hisoblaymiz

$$t_c' = \frac{c'(t_M + t_{vn} + t_x + t_d)}{100 - c'} = \frac{4.2(333.33 + 25.77 + 1.31 + 5.77)}{100 - 4.2} = 16.05 \text{ sek/metr}$$

14) To'g'ri kelish tanaffuslarining umumiy davom etish vaqti hisobi

$$t_c = t_c' + t_x + t_d = 16.05 + 1.31 + 5.77 = 23.13 \text{ sek/metr}$$

15)  $t_c$  ni  $t_m$  ga nisbatan foizi hisobida:

$$c = \frac{t_c \cdot 100}{t_m} = \frac{23.13 \cdot 100}{333.33} = 6.9\%$$

16) “a” guruh bo'yicha to'xtashlar koeffitsienti hisobi:

$$K_a = \frac{t_M}{t_M + t_{vn} + t_c} = \frac{333.33}{333.33 + 25.77 + 23.13} = \frac{333.33}{382.23} = 0.872$$

17) “b” guruh bo'yicha to'xtashlar koeffitsienti hisobi:

$$K_b = \frac{T_{sm} - T_b}{T_{sm}} = \frac{28800 - 1590}{28800} = 0.892$$

18) Foydali vaqt koefitsenti hisobi

$$FVK = K_a \cdot K_b = 0.872 \cdot 0.872 = 0.778$$

19) Dastgohni haqiqiy ish unumdorligi hisobi

$$A_{x_1} = A_N \cdot FVK = 10.8 \cdot 0.778 = 8.4 \text{ m/soat}$$

$$A_{x_2} = A_{x_1} \cdot B_{TT} = 8.4 \cdot 16 = 13.44 \text{ m}^2/\text{soat}$$

$$A_{x_3} = A_{x_1} \cdot P_a \cdot 10 = 8.4 \cdot 551 \cdot 10 = 46284 \text{ arqoq/soat}$$

$$A_{x_4} = A_{x_3} \cdot B_{TT} = 46284 \cdot 1.66 = 76831 \text{ m.arqoq/soat}$$

20) To'quvchining mahsulot ishlab chiqarish normasi

$$H_v = H_0 \cdot A_{x_1} = 8 \cdot 8.4 = 67.2 \text{ m/soat}$$

Arqoq ipi unumdorligi hisobi

1) Mashinaning nazariy ish unumdorligi

$$K = \frac{\alpha_T \cdot 100}{\sqrt{T_{un}}} = \frac{34 \cdot 100}{\sqrt{29}} = 631$$

$$A_N = \frac{60 \cdot n_k \cdot T_a}{K \cdot 100} = \frac{60 \cdot 22000 \cdot 29}{631 \cdot 100000} = 0.06 \frac{\text{kg}}{\text{soat}} \text{ 1 urchuqda}$$

$$A_N = 60 \frac{\text{kg}}{\text{soat}} \text{ 1000 urchuqda}$$

2) Foydali vaqt koefitsenti

$$FVK = 0.931$$

3) Mashinaning haqiqiy ish unumdorligi

$$A_x = A_N \cdot FVK = 0.06 \cdot 0.931 = 0.056 \text{ kg/soat}$$

4) Unumdorlik kilonomerda:

$$A_x^{KN} = \frac{A_x \cdot 1000}{T_{ip}} = \frac{56 \cdot 1000}{29} = 1931 \text{ KN/soat}$$

5) Unumdorlik bitta mashinada

$$A_x^m = A_x \cdot m_k = 0.056 \cdot 960 = 53.76 \text{ kg/soat}$$

6) Yigiruvchining mahsulot ishlab chiqarish normasi

$$H_v = A_x^m \cdot H_o = 53.76 \cdot 2 = 107.52 \text{ kg/soat.}$$

## 8. Ishlab chiqariladigan mahsulot hajmini rejalashtirish

### a) Yigiruv tsexi ishlab chiqarish dasturini hisoblash uchun ko'rsatkichlar

- 1) Kerakli ma'lumotlarni hisoblangan ko'rsatkichlardan olib, yigiruv mashinalari sonini hisoblaymiz:

$$M_T = \frac{\Pi_T^c}{A_x^A \cdot m_{urch.}} = \frac{97.8}{0.0381 \cdot 960} = 3 \text{ mashina}$$

$$M_a = \frac{\Pi_A^c}{A_x^A \cdot m_{urch.}} = \frac{252.6}{0.0381 \cdot 960} = 5 \text{ mashina}$$

- 2) Jami urchuqlar sonini topish uchun mashinalar sonini har bir mashina urchuqlar soniga ko'paytiramiz.

$$3 \cdot 960 = 2880$$

$$5 \cdot 960 = 4800$$

- 3) Ishlayotgan urchuqlar soatlarni hisoblash uchun o'rnatilgan urchuq soatlarini IUK ga ko'paytiramiz:

$$11865 \cdot 0 \cdot 955 = 11331$$

- 4) Yillik yalpi mahsulot hajmini hisoblash uchun mashinani ish unumdorligini ishlayotgan urchuqlar soatlariga ko'paytirib topamiz:

$$YYMH(1) = \frac{A_x \cdot IUS}{1000} = \frac{38.1 \cdot 11331}{1000} = 431.73 \text{ t}$$

$$YYMH(2) = \frac{A_x \cdot IUS}{1000} = \frac{1524 \cdot 11331}{1000} = 17269 \text{ km}$$

- 5) Soatlik ishlab chiqariladigan mahsulot miqdorini hisoblab chiqish uchun yillik yalpi mahsulot hajmini yillik ish soatlariga bo'lamiz:

$$SICHMM(1) = \frac{B_Y \cdot 1000}{T_Y} = \frac{431.73 \cdot 1000}{4120} = 104.79 \text{ kg}$$

$$SICHMM(2) = \frac{B_Y \cdot 1000}{T_Y} = \frac{17269 \cdot 1000}{4120} = 4191 \text{ kN/km}$$

Hisoblangan formulalar natijasi bo'yicha jadvallar to'ldiriladi.

### Yigiruv tsexi uchun ishlab chiqarish dasturi hisobi

11-jadval

| Mahsulot nomi | Iplning chiziqiy<br>zichligi(nomeri) | Navi | Mashina markasi | Mashinalar soni | Mashinadagi urchuqlar<br>soni | Jami urchuqlar soni | Ish vaqti fondi      |               |                            |                             | O`rnatilgan mashina<br>soatlari | IUK   | Ishlayotgan mashinalar<br>soatlari | Mashina<br>ish<br>unumdorligi<br>i A <sub>x</sub> |             | Yillik yalpi<br>mahsulot |            | Soatlik ishlab<br>chiqariladigan<br>mahsulot |       |
|---------------|--------------------------------------|------|-----------------|-----------------|-------------------------------|---------------------|----------------------|---------------|----------------------------|-----------------------------|---------------------------------|-------|------------------------------------|---------------------------------------------------|-------------|--------------------------|------------|----------------------------------------------|-------|
|               |                                      |      |                 |                 |                               |                     | Smena<br>davomiyligi | Smenalar soni | Bir yildagi ish<br>kunlari | Bir yildagi ish<br>soatlari |                                 |       |                                    | Kg/<br>soat                                       | KN/<br>soat | Tonna                    | Ming<br>km | Kg                                           | KN    |
| 1             | 2                                    | 3    | 4               | 5               | 6                             | 7                   | 8                    | 9             | 10                         | 11                          | 12                              | 13    | 14                                 | 15                                                | 16          | 17                       | 18         | 19                                           | 20    |
| Tanda<br>ipi  | 25                                   | 5    | G-33            | 3               | 960                           | 2880                | 7.41                 | 2             | 278                        | 4120                        | 11865                           | 0.955 | 11331                              | 38.1                                              | 1524        | 431.73                   | 17269      | 104.79                                       | 4191  |
| Arqoq<br>ipi  | 29                                   | 5    |                 | 5               | 960                           | 4800                | 7.41                 | 2             | 278                        | 4120                        | 19776                           | 0.955 | 18886                              | 56                                                | 1931        | 1057.62                  | 36468      | 256.7                                        | 8851  |
| Jami          |                                      |      |                 | 8               | 300                           | 7680                | 7.41                 | 2             | 278                        | 4120                        | 31641                           | 0.955 | 30217                              |                                                   |             | 1489.35                  | 53737      | 361.49                                       | 13042 |

**b) To'quv tsexi ishlab chiqarish dasturini hisoblash uchun ko'rsatkichlar**

1) Mashinalar sonini hisoblash.

$$M = \frac{B(metr)}{A_{x2} \cdot IUK} = \frac{1450}{13.44 \cdot 0.965} \cong 112 \text{ dastgoh}$$

2) Ishlayotgan dastgohlar soatlari sonini hisoblash uchun o'rnatilgan dastgohlar soatlarini IUK ga ko'paytiramiz.

$$3) 461440 \cdot 0.965 = 445289.6$$

4) Yillik yalpi mahsulotni hisoblash uchun ishlayotgan dastgohlar soatlarini dastgohni unumdorligiga ko'paytiramiz:

$$B_1 = \frac{A_{x1}}{1000} = \frac{8.4 \cdot 445289.6}{1000} = 3740.4 \text{ m/soat}$$

$$B_2 = \frac{A_{x1}}{1000} = \frac{13.44 \cdot 445289.6}{1000} = 5984.7 \text{ m}^2/\text{soat}$$

$$B_3 = \frac{A_{x1}}{1000} = \frac{46284 \cdot 445289.6}{1000} = 20609783 \text{ arqoq/soat}$$

$$B_4 = \frac{A_{x1}}{1000} = \frac{76831 \cdot 445289.6}{1000} = 34212045.3 \text{ m arqoq/soat}$$

5) Yillik ip extiyojini hisoblash uchun yillik yalpi mahsulotni ip sarfiga ko'paytirib topamiz:

$$P_T = \frac{B_1 \cdot M_T}{100} = \frac{3740.4 \cdot 10.78}{100} = 403.2$$

$$P_a = \frac{B_1 \cdot M_T}{100} = \frac{3740.4 \cdot 27.83}{100} = 1040.9$$

$$P_{umum} = P_T + P_a = 403.2 + 1040.9 = 1444.1 \text{ tonna}$$

6) Bir soatda ishlab chiqarilgan to'quv miqdorini hisoblash uchun yillik yalpi mahsulotni bir yildagi ish soatlari bo'lish orqali topamiz.

$$B_c = \frac{B_1}{T_{\text{y}}} \cdot 1000 = \frac{3740.4}{4120} \cdot 1000 = 907.8$$

Hisob natijalarini jadvalga kiritamiz.

## To`quv tsexining ishlab chiqarish dasturi hisobi

12-jadval

| To`qimaning nomi | To`qimaning eni, sm. | Iplarning chiziqliy zichligi, teks. |                | Taxtlangan dastgohlar soni | Ish vaqti fondi |                   |                         |                         | O`rnatilgan dastgohlar soni | IUK   | Ishlayotgan dastgohlar soatlari soni | Dastgoh unumdorligi |                   |          |            |
|------------------|----------------------|-------------------------------------|----------------|----------------------------|-----------------|-------------------|-------------------------|-------------------------|-----------------------------|-------|--------------------------------------|---------------------|-------------------|----------|------------|
|                  |                      | T <sub>t</sub>                      | T <sub>a</sub> |                            | Smenalar soni   | Smena davomiyligi | Bir yildagi ish kunlari | Bir yildagi ish kunlari |                             |       |                                      | m/s                 | M <sup>2</sup> /s | Arq/soat | m.arq/soat |
| 1                | 2                    | 3                                   | 4              | 5                          | 6               | 7                 | 8                       | 9                       | 10                          | 11    | 12                                   | 13                  | 14                | 15       | 16         |
| Moleskin         | 3052                 | 25                                  | 29             | 112                        | 2               | 7.41              | 278                     | 4120                    | 461440                      | 0.965 | 445289.6                             | 8,4                 | 13,44             | 46284    | 76831      |

| Yalpi ishlab chiqarilgan mahsulot |                     |             |               | 100 metr to`qima uchun ketadigan ip sarfi, kg |       | Ipga bo`lgan yillik ehtiyoj, tonna |        |        | Ipga bo`lgan soatlik ehtiyoj, kg |       |       | 1 soatda ishlab chiqariladigan to`qima miqdori, metr |
|-----------------------------------|---------------------|-------------|---------------|-----------------------------------------------|-------|------------------------------------|--------|--------|----------------------------------|-------|-------|------------------------------------------------------|
| m.metr                            | m.metr <sup>2</sup> | Ming. Arqoq | Ming.m. arqoq | Tanda                                         | Arqoq | Tanda                              | Arqoq  | Jami   | Tanda                            | Arqoq | Jami  |                                                      |
| 17                                | 18                  | 19          | 20            | 21                                            | 22    | 23                                 | 24     | 25     | 26                               | 27    | 28    | 29                                                   |
| 3740.4                            | 5984.7              | 20609783.4  | 34212045.3    | 10.78                                         | 27.83 | 403.2                              | 1040.9 | 1444.1 | 97.8                             | 252.6 | 350.4 | 907.8                                                |

## Xulosa

Kurs ishini bitirib shuni aytishim mumkinki, loyihalangan korxonaga o'xshagan korxonalar biz uchun bugungi kunda juda ham muhim. Chunki bugungi kunda aholining keng turdagi assortimentli va yuqori sifatli, arzon mahsulotga ehtiyoji yuqori darajada ekanligi ko'rinib turibdi.

“Sanoat korxonalarida ishlab chiqarishni tashkil etish” fanidan kurs ishi vazifamni olib, nazariy bilimlarimga tayanib, korxonalaridagi o'timlar, u yerda ishlayotgan uskunalar texnik parametrlarini va ko'rsatkichlarini tadbiq qilib, topshiriqqa berilgan reja asosida hisob-kitob qildim va natijalarga erishdim.

Unga binoan men yigiruv-to'quv fabrikasi bo'yicha chiqindilar hisobi, o'ramalar hisobi, uskunalar unumdorligi hisobi ko'rsatkichlarini hisoblab, yakunda yigiruv-to'quv tsexi mahsulot ishlab chiqarish rejasini ishlab chiqdim va uning tahlilini qildim.

Hisob natijalari ijobiy bo'lib, to'qima enli, rangli, tannarxi arzon va eng asosiysi Mamlakatimizda yetishtirilgan paxta xom-ashyosidan foydalanib ishlab chiqarish yo'lga qo'yilganligidir.

## Foydalanilgan adabiyotlar ro'yxati

- 1.I.A.Karimov “Jahon moliyaviy iqtisodiy inqirozi.O'zbekiston sharoitida uni bartaraf etish yo'llari va choralari ” Toshkent.O'zbekiston-2009 yil
2. I.A.Karimov “Yuksak ma'naviyat yengilmas kuch ” Toshkent.O'zbekiston-2008 yil
- 3.Ortiqov.A “Sanoat iqtisodiyoti” Darslik.Toshkent.O'zbekiston yozuvchilar uyushmasi adabiyot jamg'armasi nashri-2004 yil
- 4.Isayev.R.A va boshqalar “ Ishlab chiqarishni tashkil etish va biznes reja” 1-2 qism. Toshkent tafakkur-2011yil
- 5.Abdukarimov.B.X va boshqalar “Korxona iqtisodiyoti” Darslik.Toshkent/  
Fan va texnologiya-2013 yil
- 6.Boltaboyev.M.R “To'qimachilik sanoati marketing strategiyasi” Toshkent.Fan 2004-yil
- 7.Tursunxo'jayev.P.M “Korxonalarda ishlab chiqarish va rejalashtirish” Toshkent.O'zbekiston-1997 yil
- 8.Yuldashev.S.N “Sanoat korxonalarida ishlab chiqarishni tashkil etish fanidan kurs ishini bajarish uchun uslubiy ko'rsatma” Toshkent.TTYESI-2013yil
- 9.[www.lecprom.uz](http://www.lecprom.uz)
- 10.[www.comet.com](http://www.comet.com)
- 12.[www.rieter.com](http://www.rieter.com)

## Mundarija

|                                                                 |    |
|-----------------------------------------------------------------|----|
| 1. Kirish.....                                                  | 2  |
| 2. To'qimaning teknik parametrlari .....                        | 4  |
| 3. Tiqli saralanma tanlash asoslash .....                       | 5  |
| 4. Yigiruv to'quv korxonalari texnologik zanjirini tanlash..... | 6  |
| 5. O'timlar bo'yicha o'ramalar hisobi .....                     | 8  |
| 6. O'timlar bo'yicha chiqindilar hisobi .. ..                   | 14 |
| 7. Yigiruv va to'quv uskunalari unumdorliklari hisobi.....      | 19 |
| 8. Ishlab chiqariladigan mahsulot hajmini rejalashtirish.....   | 30 |
| 9. Xulosa.....                                                  | 34 |
| Foydalanilgan adabiyotlar ro'yxati.....                         | 35 |