Q1) Explain Briefly (i) Dobby (ii) Jacquard. (5+5)

Ans. (i) DOBBY ⇒ It is the shedding device placed on top of loom in order to Produce a figured Pattern by using a larger no. of healds than the capacity of tappet.

Its scope is limited bet? the uses of tappets & Jacquard.

Dobby is also known as WITCH or WIZARD.

The no. of shafts which can be actuated by dobby device. varies bet? 6 & 40.

Dobbies consists of 2 main units.

(i) Heald lifting motion

(ii) The Pattern mechanism.

⇒ The heald lifting motion consists of a system of knieves Performing a return stroke & a system of hooks connected in a certain way with the healds. This mechanism effects heald lifting & lowering

⇒ The Pattern mechanism consists of a cylinder & a card.

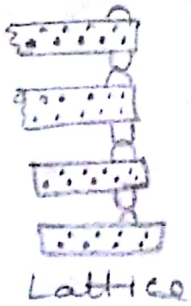
Dobbies can be classified as single lift & double lift. When single lift dobbies fixed in center of loom gives -ve shedding whereas dobbies fixed on one end of loom and with double lifts gives the shedding.

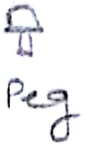
Pegging the card

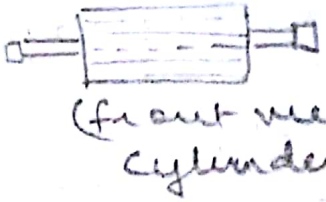
The sequence of heald lifting & lowering during dobby operation is determined by

the card. The position of dobby makes a difference in pegging a design or a pattern. A rt. handed dobby cylinder revolves clockwise whereas a lf. handed cylinder rotates anticlockwise. In rt. hand Dobby the shed for the 1st pick is controlled by bottom hook while this shed is produced by top hook in case of LH Dobby.

The cards consists of wooden lags connected together to form an endless chain. Each lag serves for the formation of 2 consecutive sheds i.e. for laying 2 wf. yns. For this reason each card has 2 rows of holes. The holes in the lags are disposed in checkered order & the holes in upper row are shifted to rt. relative to the holes of Botton row.







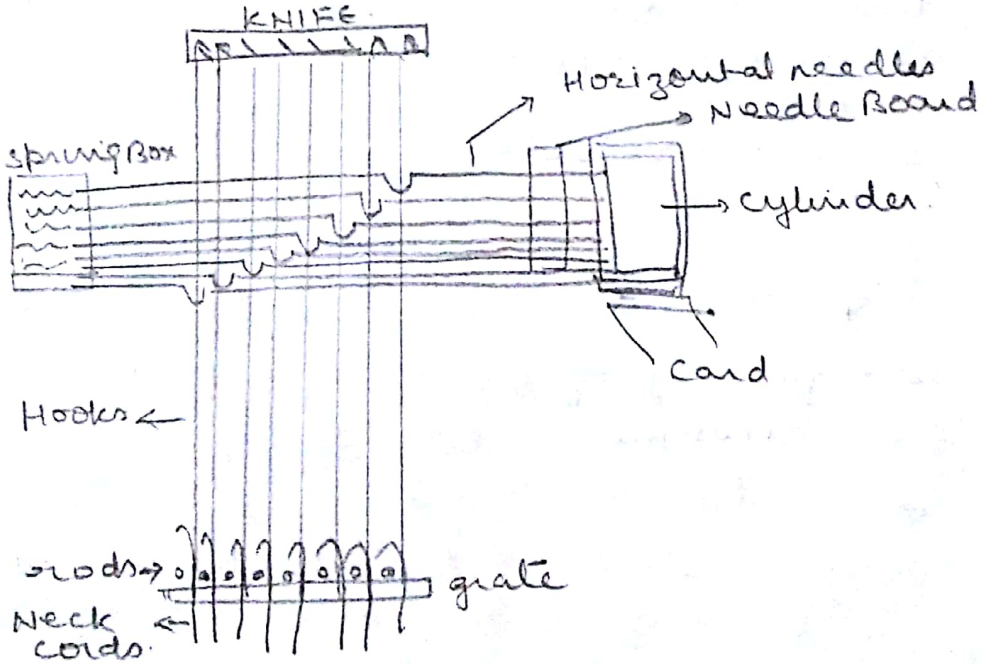
(ii) <u>JACQUARD</u> ⇒ J/q is the shedding device in which each hook represents single heald without the use of any heald shaft. It is finest of all m/c's for making the large figured woven fabrics.

J/q's are used for designs with several thousand of wp. thds. interlacing in diff. manner & with the same no. of wf. thds. in the repeat.

In J/Q m/c's not only small grps. of wp. thds. are lifted but single thds. as well. It is possible because instead of heald shafts the harness cords are used, each of which carries one individual warp thread. The upward & downward movement of single warp thds. in diff. orders make possible to produce the figures of desirable form & size.

at the time of designing, the designer needs the detail of J/Q i.e.

(i) Type of J/Q
(ii) type of harness mounting
(iii) Type of harness tie-ups.
(iv) Type of loom
(v) Type of shed formed by J/Q etc.



at m/c operation the cylinder moves to left bringing the cards to the needles & if there is no hole in the card against the needle, the card presses the needle moves & deflects the hook to the left. The hook will not be engaged by the lifting knife. The wp. ends remains in lower position

forming the bottom part of shed. (4)

If there is hole in card opp. to needle it is not deflected. The hook remains over the knife & at the next moment the knife takes it while going up & lifts it. As a result the harness cord & the up. thds. are lifted. The up. thds. forms the top part of the shed.

Q2. What is importance of inspection of Fabric in Textile mill. Explain the common faults that occurs during dyeing & weaving. (2+1½+1½)=(5)

OR

(i) What are the differences bet^n warp pile & weft pile

(ii) Make weave: (2+3)

a) Warp Backed cloth
b) Astrakhan structure
c) Corded Velveteen.

Ans Importance of Inspection of Fabric

(i) The quality of fabric can be assessed as per internationally accepted Procedures before the material is offered to the buyers so that the liklihood of rejection by the buyer on account of poor quality can be avoided.

(ii) The reasons of defects can be understood & corrective steps can be taken to Prevent recurrence of such defects.

(iii) The made ups & apparel manufacturing units can assess the quality of fabric being procured by them, before accepting the consignments.

W/V defects

(i) Broken ends woven in Bunch
(ii) Broken Pattern
(iii) Double end
(iv) Float
(v) Gout
(vi) local distortion
(vii) Hole, cut or Tear
(viii) Missing ends
(ix) Lashing-in
(x) Oily or soiled ends.
(xi) Oily weft
(xii) Reed marks
(xiii) Selvede defect
(xiv) Slough-off
(xv) Smash
(xvi) Snarls
(xvii) Stitches
(xviii) Untinned loose ends.
(xix) Weft Bar
(xx) Weft crack.

These are many causes for these defects. This can be due to improper loom cleaning, Mixing of ends. during process of spinning etc. Wrong drawing, Failure of weaver in attending to up. Breaks properly, Incorrect-shedding + many more.

These defects if minor can be cured but ~~not~~ if serious or major cannot be cured.

Dyeing Defects

(i) Blurred or dark Patch
(ii) dye-Bar
(iii) Dyestuff stain
(iv) Misprint or absence of Print
(v) Patchy or streaky or uneven dyeing
(vi) Shading
(vii) Water mark
(viii) White spot
(ix) Dark selvedges + Bronzing

causes of these defects may include workers negligence, Prolonged m/c stoppage, Drying conditions not proper, improper heat setting Improper preparation of dyestuff, Foreign material in cloth & many more.
To cure these we have to prepare proper dyes & chemicals proportion & all other settings for that Particular need should be satisfied.

OR

Warp Pile	Weft-Pile
① One series of wf. thds. & 2 series of wp. thds	① One series of wp. thds & 2 series of wf. thds.
② warp cut piles produced using wires during w/v operation called velvet.	② weft cut piles produced during wires during finishing operation called velveteen.
③ w/v operation is complicated. special type of loom is reqd. for w/v. Finishing operation is simple.	③ Ordinary loom is sufficient to weave velveteen fabrics. Complicated finishing operation is carried to get the piles.

(4)

(3) Warp looped pile fabrics Produced by using special weave & reed motion called terry pile. It is possible to Produce piles on both sides of the fabric in terry w/v technique.

(4) Weft cut piles produced individually by knotting the weft - called Hand knotted tufted Piles.

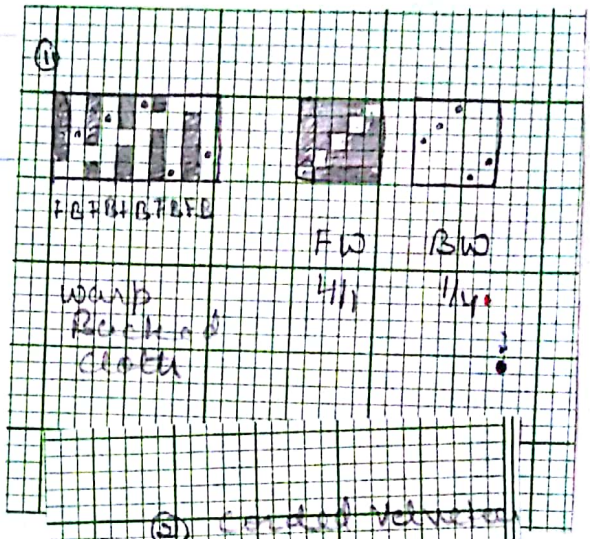
---

(1) Warp Backed cloth

FW → 4/1 Twill

BW → 1/4 Twill

Repeat → 10 × 5



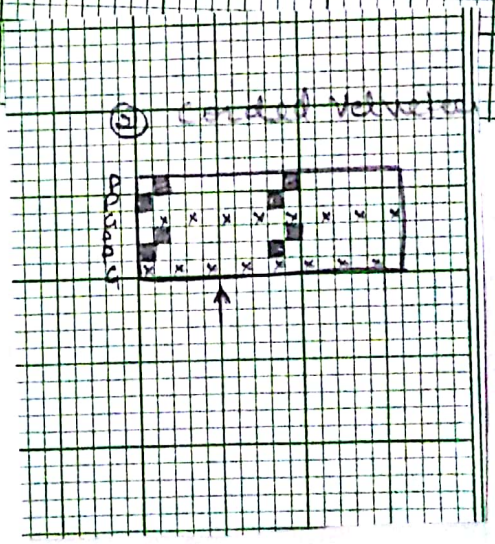
---

(2) corded Velveteen

G : P :: 1 : 2

GW → Plain

Pile → float 7 ends.



(3) Astrakhan structure

arrangement in up direction → 4G1P

arrangement in wf. direction → 4 Pick to each loine

GW → Plain

Repeat size → 10 × 10

PW → alternate (1/2 raised)