Code No: 153CM **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech II Year I Semester Examinations, April/May - 2023
FABRIC MANUFACTURE – I
(Textile Engineering)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A

(25 Marks)

1.a) List the factors which affect the selection of a right type of " Systems of Yarn Preparation". [2]
b) The weight of a Ring cop is 49 grams of 40's yarn. The rate of winding is 1000mpm, the planned cone weight is 2.85Kg. Work out the Running time of Ring cop and number of cops required. [3]
c) A pirn weighs 39 grams of 34's HK yarn. The reed space is 125 cm. The picks per cm is 40. Find the yardage of the fabric produced. [2]
d) How do you plan for arranging the supply packages in Sectional warping creel? Give an example. [3]
e) List the forms of sizing and when do you prefer them? [2]
f) Calculate the weight of the warp and quantity of size to be added for a set length of 6500 meters of 60's C yarn, with 5772 ends and 12 % of size. [3]
g) Explain the need for Leasing in Head stock zone. [2]
h) How ATIRA method is useful to locate the migratory ends in sizing? [3]
i) A Loom is specified as "125" cm RS. What does it mean? [2]
j) For a given picking mechanism, how do you increase the Intensity of picking? [3]

PART - B

(50 Marks)

2. Calculate the rate of winding of a machine with the following data:
Drum length -100cm, Drum diameter 50mm, Scrolls 3, Drum speed 3125 rpm. Also compute the Coil angle and Angle of wind. A machine is running at 850 mpm. Select the tension level. Examine the working of any one type of EYC. [10]

OR

3. How do you select the "Guide Distance" and "Optimum Guide Distance" in RT winders? Examine the effects of unwinding speed and Guide and Optimum Guide distance on the quality of wound package. [10]

4. With respect to a pirn winding machine explain: Effect of rotation of Spindle rotation in relation to yarn twist, Automatic Change in Rotary and Circular magazines of Super speed pirn winders. [10]

OR

5. Discuss: Planning of Patterned warps, Antibound Let off motion, Factors affecting the Production of warper. [10]

6. Explain:
   a) U clip and its adjustment
   b) Stretch Control in Wet zone by PIV
   c) Wier Principle of Size level Control. [10]

OR

7. A warp contains 2500 ends and is 32000 meters long the percentage size added is 25. If the warp tex is 16 tex and the weaver beam. Consist 250 meters yarn calculate: Weight of the size to be put on the yarn.,Count of sized beam, Weight of sized warp, total number of warper beams and weaver beam required., total number of ends in each warper beam, total length of warp with 1.5% stretch. [10]

8. Calculate the efficiency of sized machine with the following data:
   Count of warp and weft is 29.5 tex, Length of warp on the warper beam 12000 mt., Total number of ends 3800 set length on weavers beam is 1200 mt., Time to cut a lapper 2.5 minute, Leasing, Doffing, Doning – 8 min, Creeling time/set – 60min. Reed space employed – 110cm. Also calculate weight of warp and weft speed of the machine 40 mm/minute size percentage 12%. [10]

OR

9. Discuss Automatic Drawing –in, effect of after waxing on end breakage rate, Selection of wheels for Cut mark motion. [10]

10. Explain:
    a) Tappets types and their selection
    b) Timing of Primary motions
    c) Shuttle Trap Vs Shuttle Fly. [10]

OR

11.a) From the following data, calculate the average loom speed , average reed space and average picks per inch

Number of looms	**Speeds**	**Reed space**	**Picks/inch**
48	180	56″	55
48	184	52″	48
96	200	48″	42
96	206	44″	40

b) Explain Factors affecting Eccentricity of Sley, Heald Staggering, and Figuring Capacity of a Shedding device. [5+5]

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