THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A.(REVISED) EXAMINATION –2017
SECTION-B PAPER- B2
FABRIC MANUFACTURE

Date: 24.12.2017  Marks: 100  Time: 2.00 pm to 5.00 pm

Instructions:
1. Attempt six questions out of which Q.1 is compulsory
2. Answer each main question on new page
3. Figures to the right indicate full marks
4. Illustrate your answers with sketches and flow-charts wherever necessary
5. Use of non-programmable electronic calculator permissible
6. Mobile and any other communication devices are not allowed in exam hall
7. Assume suitable data wherever necessary.

Q1. a. Choose the correct answer and give the reasons
   i. Dwell and Number of Cam required for 3 up/1 down weave (60°, 2, 30°, 4, 40°, 4, 60°, 4)
   None of the above
   iii. Find out weft insertion rate of air jet loom if the reed width is 210 cm and loom speed is 740 rpm
        (1554 mts/min, 2000 mts/min, 1300 mts/min, 740 mts/min.)
   iv. In loom as the beam diameter decreases, the beam speed (increases, decreases, Constant, none of the above)
   b. Give the classification of fabrics. Explain how woven fabric manufacture is done with a neat diagram.
   c. Compare the woven fabric with knitted fabric along with structure.

Q2. a. Give construction of picking tappet. Explain over pick mechanism with a neat sketch
   b. What are the objectives of yarn preparatory process? Give the flow chart of warp and weft preparatory processes.

Q3. a. What is slay eccentricity? Derive the equation to find slay eccentricity E and find out value of E if the crank radius is 4.5 inch and length of connecting arm is 10 inch.
   b. Explain the weft knitting cycle with a neat sketch.

Q4. a. What are the changes required in plain power loom to weave synthetic yarns?
   b. Draw the following parts and give the function.
      1) Size Box 2) Types of tensioners 3) Shuttle box 4) Sectional reed

Q5. a. Find out total production of loom shed in meters/day from the given data:
   - Type of fabric: P/V :70/30
   - Type of weave: 3up/1 down twill
   - Fabric Specification: 40X32
   - Loom Speed: 210 rpm
   - Number of looms: 50
   Also find out the speed of bottom shaft and tappet shaft (assume suitable data)
   b. Answer what will happen if,
      i. Picking force less than required
      ii. Filament winds on pim with uneven tension
      iii. Crossing of the shed take place after beat up
      iv. Weight in negative let off shifted towards the fulcrum

   b. What is take up? Explain 7 wheel take up mechanism with a neat sketch.

Q7. a. What are the objectives of sizing? Explain sizing process in detail with flow chart.
   b. Give the types of shed and explain with its advantage and disadvantage.

Q8. Write short notes (Any two)

Total: 100
i. Beat up mechanism
ii. Warping process
iii. Let off mechanism
iv. Winding Process

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