THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A.(REVISED) EXAMINATION- 2014
SECTION-B, PAPER-B-2
FABRIC MANUFACTURE

Date: 25.12.2014       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 next main question on new page.
3. Figure to the right indicate full marks
4. Illustrate your answer with sketches and flow chart wherever necessary.
5. Use of non programmable electronic pocket calculator permissible.
6. Mobile and any other communication devices are not allowed in exam hall.
7. Assume suitable data wherever necessary.

Q.1 A Choose the correct giving reason. (8)

1) In Silk Fabric weaving the beat up is done at
   a) Close Shed
   b) Cross Shed
   c) Open Shed
   d) All above.

2) Two process involved in manufacturing of Nonwoven Fabrics are
   a) Laying and stitching
   b) Web formation and Bonding
   c) Spreading and calendaring
   d) None of above

3) On given loom the radius of crank \( r = 4 \) cm and length of connecting arm \( l=12 \) cm, Find eccentricity ratio (e).
   a) 0.43
   b) 0.56
   c) 0.33
   d) 1

4) Total Number of pieces in assembly of picking tappet are
   a) 1
   b) 2
   c) 3
   d) 4

B Give Timing diagram for Spun and filament weaving and explain what are the changes required in loom for filament weaving. (7)

C Give the function of following part
   1) Tappet 2) Lease Rod 3) picking stick 4) Needle 5) Sectional Reed (5)

P.T.O
Q.2 A Give the objective of winding process. What is Pattern? How patterning can be prevent? Explain anti-patterning device. (8)

B Give the objective of warping process and explain sectional warping machine in detail. (8)

Q.3 A Give the classification of type of shed. Compare Close shed with semi open and open shed along with its advantages and disadvantages. (8)

B What is Advancing? Give the importance of advancing in pirn winding. Explain advancing mechanism. (8)

Q.4 A How Knitting fabrics are different then woven fabric. Explain weft knitting process along with knitting cycle. (9)

B Draw the woven structure. Explain woven fabric manufacturing process in detail. (7)

Q.5 A Define Nonwoven. Give steps involve in manufacturing. Explain different bonding method use to bind the web. (10)

B Draw and give construction detail
1) Size Box 2) Shuttle Box (6)

Q.6 A Give the difference between Loose reed and fast reed warp protector motion. Explain any one in detail (8)

B Give the difference between Over pick and Under pick motion. Explain any one with neat sketch (8)

Q.7 A What is Take-up? Explain 7 wheels take up mechanism in detail. (8)

B What are the reasons for tension variation in warp sheet? Explain how tension can be control on loom using let off. (8)

Q.8 A Draw the sketch only
1) Knitted Structure 2) 3 up /1 down Twill Weave 3) Reversing motion (3)

B Find the Total Production of loom shed in meter/shift and Kg/shift from given data.
- Type of fabric: 60/40 P/C, Plain fabric
- Fabric specification (inch): 56 X 44, 42" wide
- Picks/min: 210
- Efficiency: 75%
- Number of Loom: 30
Also find out speed of bottom shaft, Dwell for picking and reed count.
(Assume suitable data if required) (7)

C Answer what will happen if...
1 Lift of front and back heald shaft is same
2 Size pick up is less
3 Tension variation in pirn during filament winding (6)

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