THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A EXAMINATION-2016
SECTION D PAPER-D.3
ENGINEERING DESIGN AND YARN STRUCTURE

Date: 25.12.2016 Marks: 100 Time: 02:00 to 05:00 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. Answer the match the following type question by choosing correct option. 10 x 2 = 20

1. 180’s Ne Cotton Yarn  
A. Strength of blended yarn

2. 60’s Ne Cotton Yarn  
B. Projection microscope

3. 8’s Ne Cotton Yarn  
C. 2.5

4. Higher yarn twist  
D. OE yarn

5. Yarn diameter  
E. 4.0

6. Hamburger Model  
F. 3.0

7. Helical  
G. Combed yarn

8. Warp yarn twist factor  
H. Increases hairiness

9. Weft yarn twist factor  
I. Yarn geometry

10. Knitted yarn twist factor  
J. Carded yarn

Q2. Explain idealized yarn geometry with a neat diagram. 16

Q3. What are the different forms of packing of fibres in a yarn? With a neat diagram and explain Hexagonal close-packing. 16

Q4. How to estimate yarn diameter using basic parameters? Explain any one method of measuring yarn diameter. 16

Q5. Why twist is needed in spun yarns? Explain the influence of twist on yarn strength? 16

Q6. What are the conducive conditions for fibre migration? With a neat diagram, explain the mechanism of fibre migration? 16

Q7. Explain how blending influences the extensibility of continuous filament yarns? 16

Q8. Explain the ‘Spinability’ of textile fibres. How does fibre blending affect spinability? 16