

THE TEXTILE ASSOCIATION (INDIA)

G.M.T.A. EXAMINATION-2020

SECTION D- D4

PROCESS AND QUALITY MANAGEMENT IN YARN MANUFACTURE

Date: 27.12.2020

Marks: 100

Time: 2pm to 5 pm

Instructions:

1. Attempt **SIX** questions out of which **Q1** is Compulsory
2. Answer each next question on new page.
3. Figures to the right indicate full marks.
4. Illustrate your answers with sketches and flow chart wherever necessary.
5. Use of nonprogrammable electronic pocket calculator permissible.
6. Mobile and any other communication devices are not allowed in the exam hall.
7. Assume suitable data wherever necessary.

Q1	Say TRUE or FALSE (Any Ten)	20
a	Rotor yarn is "S" twisted.	
b	Higher Short fiber content improves the yarn quality.	
c	Over twisted yarn becomes poor in strength.	
d	Total draft in draw frame is 85 to 100.	
e	Ring yarn is "S" twisted.	
f	The objectionable yarn faults are measured on 'Classimate' instrument.	
g	The standard moisture content of polyester fiber is 8%.	
h	The lower the trash content in the cotton mixing, more the number of beating points.	
i	The tenacity of polypropylene fiber increases with proportion to moisture content.	
j	The proportion of main draft is higher in the total draft of draw frame.	
k	The C chart used to monitor variable.	
l	Process control is carried out during production.	
m	The P chart used to monitor attributes.	
n	The percent of the sample means will have values that are within ± 3 standard deviations of the distribution mean is 99.7.	
o	The Range control chart used for the fraction of defective items in a sample.	
Q2	a Discuss common defects in Comber and its causes.	8
	b Discuss key elements of process control in Draw Frame	8
Q3	a Discuss the influence of fiber properties on the performance of spinning with suitable examples.	8
	b Describe the reasons of yarn breaks and types of yarn faults generated during spinning.	8
Q4	a Discuss the common defects in Carding and its causes	8
	b Discuss the key elements of process control in Blow Room	8
Q5	Discuss the use of different Statistical Control Tool used in Spinning Process Control with examples.	16

- Q6** a Discuss the relevance and importance of process norms and standards in spinning with suitable examples. **8**
- b Discuss the classification of yarn faults caused by mass variation. **8**
- Q7** Prepare a suitable production plan to establish a spinning unit with modern technology m/c having production capacity of 25000 kg of 60s Ne combed hosiery cotton yarn (considering 20% comber noil) per day; assuming appropriate process parameter. Workout no. of m/c for each section. Discuss briefly any two **16**
- Q8** a Auto doffer in Ring Frame.
- b The impact of Carding on yarn quality
- c Role of Draw Frame in overall spinning quality
