

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

R 3638

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2007.

Fifth Semester

Textile Technology

TT 1302 — PROCESS AND QUALITY CONTROL IN SPINNING

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How are the norms developed for the 'Process output quality at various stage of spinning?
2. Mention the process route to produce combed cotton and polyester blended yarn.
3. What is the norm for fibre rupture and neps change while processing cotton in a good blow room line?
4. What are the different measures of blending irregularity of a strand?
5. The cleaning efficiency of blow room line is 58% and that of card is 85%. Calculate the trash present in the card sliver, if the trash present in the raw cotton is 5.0%.
6. Write the equation to estimate combing efficiency per 1% noil extraction.
7. What are the sensitivity levels normally used for measuring the imperfections of ring yarn?
8. How is periodic fault present in a textile strand measured?
9. What are the main factors affecting the production efficiency of comber preparatory machine?
10. What are the measures of labour productivity in a spinning mill?

PART B ---- (5 × 16 = 80 marks)

11. (a) Explain with suitable example on any one application of the following statistical techniques in process and quality control in spinning.
- (i) Mean and Range charts. (8)
- (ii) Significance test. (8)

Or

- (b) Enlist the quality parameters to be measured and controlled for the product outputs from blow room to ring frame to produce good quality combed cotton yarn.
12. (a) (i) What are the methods available to estimate neps removal efficiency? (8)
- (ii) What are the factors affecting the neps removal efficiency of card and comber? (8)

Or

- (b) (i) How to predict the spinnability of fibre? Explain with the fibre characteristics required for producing 40 Ne cotton combed hosiery yarn. (10)
- (ii) What are the quality parameters of cotton to be considered while making mixing of two varieties of cotton? Why? (6)
13. (a) How is the noil% removal at head-wise of a comber and between the combers measured (comber with manual cleaning)? What is the permissible standard for variation? (14 + 2)

Or

- (b) How can the (i) Flat strip in the card be increased (ii) Comber noil extraction with back ward feed be increased and (iii) the fault due to incorrect overlapping (detaching roller) at comber be assessed and controlled? (4 + 4 + 8)
14. (a) (i) Classify the faults present in the yarn based on length and cross section of fault as per any one of the popular system. (10)
- (ii) How is the above classification useful in process and quality control in spinning? (6)

Or

- (b) The count measured at the cone stage shows that the count CV% higher than the standard. What measures have to be taken at the preparatory and ring frame to control the count CV%?

15. (a) (i) How is the ambient condition affect the production efficiency of spinning machinery? (8)
- (ii) What precautions to be taken at the draw frame, speed frame and ring frame while processing polyester fibres? (8)

Or

- (b) (i) What are the procedure followed to estimate the end breakage rate in a ring spinning machine? (10)
- (ii) What are the causes for end breakage at ring frame? (6)
-