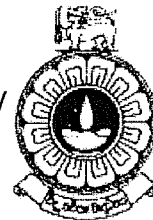


THE OPEN UNIVERSITY OF SRI LANKA
 DEPARTMENT OF TEXTILE & APPAREL TECHNOLOGY
 BACHELOR OF TECHNOLOGY HONOURS IN ENGINEERING/
 BACHELOR OF INDUSTRIAL STUDIES HONOURS
 FINAL EXAMINATION – 2015/16
 TTX3232 YARN MANUFACTURE I
 DURATION: 3 HOURS



DATE: 03rd December 2016

TIME: 13.30 – 16.30 hours

Total Number of Questions = 08

Number of questions to be answered = 06

Answer the question 1, which is compulsory and five (05) additional questions.

Question 1 carries thirty (30) marks and questions 2 to 8 carry fourteen (14) marks each.

01. Compulsory Question

- (a) What is Ginning? State three(03) ginning defects. (03Marks)
- (b) State the four (04) categories into which actions used in any blow room machine belong. (02Marks)
- (c) What is a Kirshner beater? (02Marks)
- (d) State two(02) advantages of automatic bale plucking and feeding. (02Marks)
- (e) What is the purpose of using cages or screens in the pneumatic transport system of a blow room? (02Marks)
- (f) How can we determine the “Mechanical draft” of a carding machine? (02Marks)
- (g) Distinguish between “Metallic card clothing” and “Flexible card clothing”. (02Marks)
- (h) State two (02) objectives of roller drafting. (02Marks)
- (i) State two (02) objectives of doubling of slivers on a draw frame. (02Marks)
- (j) State two (02) objectives of the process of roving. (02Marks)
- (k) Explain in brief how twisting is realized in a roving (flyer) frame. (03Marks)
- (l) Distinguish between twist and twist factor. (02Marks)

- (m) What is the function of “Lappets” in ring spinning machines? (02Marks)
- (n) What is “Spinning triangle”? (02Marks)

Answer any five (05) questions from the following seven (07) questions.

02. a) In the blow rooms of spinning mills air currents are used to transport fibre. State all the requirements which have to be met by such a transport system and describe the operational principle of such a pneumatic transport system with the help of a suitable labeled diagram showing all the essential items. (10Marks)
- b) Explain why, regulation of the fibre flow is more important in the case of modern spinning plants than in plants of older generations. (4 Marks)
03. a) Describe the operational principle of a step cleaner with the help of a suitable labeled diagram. Your description must explain how opening and cleaning of fibre is carried out and machine parts involved in this process. (8 Marks)
- b) What are the objectives of blending of Fibres? Describe in brief the method of lap blending. (6Marks)
04. a) Describe “Carding action” and “Stripping action” by illustrating how the wire points on different machine elements of a card are arranged to realize these actions. (8Marks)
- b) What is “Chute feeding”? What are the advantages of chute/flock feeding to a card? (6 Marks)
05. a) Discuss the importance of “Roller setting” of a draw frame drafting system. (10Marks)
- b) What is the purpose of “Roller weighting”? State three (03) different methods of roller weighting used in draw frame drafting systems. (4 Marks)
06. a) What are the objectives of comber preparatory process? Explain why the direction of feeding of fibre for combing is very important. (6 Marks)
- b) Explain with the aid of a suitable diagram how combing would affect the staple diagram of cotton and with that the quality of combed yarns in comparison to carded yarns. (8 Marks)
07. a) What are aprons? Why do we use aprons in the drafting zones of Roving frames? (6 Marks)
- b) What are the important functions of the building motion of a roving machine? Explain how this building motion is realized to ensure formation of a proper delivery package. (8 Marks)

08. a) What are the functions of a traveller. Explain why different spinning machine manufacturers have developed different types of travelers. (8 Marks)
- b) State and briefly explain three (03) different new developments found in modern ring spinning machines. (6 Marks)