

The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Textile and Apparel Technology



Study Programme	: Bachelor of Technology Honours in Engineering/ Bachelor of Industrial Studies Honours
Name of the Examination	: Final Examination
Course Code and Title	: TAX3331/TAX3539/TTX3239 Garment Analysis and Sewing Machinery
Academic Year	: 2019/2020
Date	: 02 nd August 2020
Time	: 0930 – 1230hrs

General Instructions

1. Read all instructions carefully before answering the questions.
 2. This question paper consists of **Eight (8)** questions in **Four (4)** pages.
 3. **Number of questions to be answered = 06**
 4. Answer **Question one (Q1)**, which is compulsory and **Five (05) more** questions.
 5. Question one (Q1) carries 25 marks and questions two (Q2) to eight (Q8) carry 15 marks each.
 6. Answer for each question should commence from a new page.
 7. This is a Closed Book Test (CBT).
 8. Answers should be in clear handwriting.
 9. Do not use red colour pens.
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Compulsory Question

- (Q1) (a) Write down the three (03) activities carried out during the pattern adoption stage of the product development. (03 marks)
- (b) Differentiate between the “Structural designs” and “Applied designs” considered in analysis of the material selection of a garment. (02 marks)
- (c) Using suitable sketches clearly mark three (03) seam dimensions of a “Welt seam” constructed using the “Stitch type 301” (BS classification). (04 marks)
- (d) State four (04) differences between the stitch types 301 and 402 (BS classification). (04 marks)
- (e) Write down three (03) factors, which are considered when adjusting the pressure of the presser foot of lockstitch sewing machine. (03 marks)
- (f) Giving suitable examples, briefly explain the classification of sewing machines according to the degree of automation. (03 marks)
- (g) Differentiate between the “Compensation presser foot” and “Top stitching presser foot”. (02 marks)
- (h) Write down four (04) seaming defects arising due to failures of the operators. (04 marks)

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

- (Q2) (a) Describe the three (03) main methods used for the garment analysis. (03 marks)
- (b) Briefly explain three (03) quality criteria used for the analysis of the final garment assembly and finishing. (06 marks)
- (c) Evaluate a raincoat using the following three (03) criteria of the product positioning strategy.
- (i) Functional and aesthetic garments
 - (ii) Intrinsic and extrinsic cues of quality
 - (iii) Durable and disposable products (06 marks)
- (Q3) (a) Write short notes on three (03) types of seam puckering. (06 marks)
- (b) Discuss four (04) differences between the two (02) methods used for zigzag stitch formation. (05 marks)
- (c) Write down two (02) types of teeth used in feed dogs of sewing machines with their applications. (04 marks)

- (Q4) (a) Explain the three (03) seam classification criteria used in British Standard. (03 marks)
- (b) Using suitable sketches, describe the construction steps of the following seams as per British Standard classification.
- (i) Edge-stitching seam
 - (ii) Bound seam with fraying material in binding (04 marks)
- (c) Briefly explain the effect of “Seam type, Stitch type and Stitch density” on the following properties of seam performance.
- (i) Elasticity
 - (ii) Strength
 - (iii) Flexibility (06 marks)
- (d) Write down two (02) factors, which affect the seam appearance. (02 marks)
- (Q5) (a) Write short descriptions on the “Stitch formation, Features and Applications” of the “Stitch type 602” and “Stitch type 512”. Notations of the stitches are given as per British Standard 3870. (06 marks)
- (b) Using suitable sketches, explain the six (06) steps involved in the formation of lockstitch (Type 301) using “Oscillating shuttle”. (06 marks)
- (c) Discuss three (03) main differences between the following stitch formation mechanisms.
- (i) Formation of the stitch type 101 by oscillatory looper
 - (ii) Formation of the stitch type 401 (03 marks)
- (Q6) (a) Briefly explain the main functions of following sewing machine parts.
- (i) Take up lever
 - (ii) Stitch regulator
 - (iii) Throat plate (03 marks)
- (b) All the motions of the lockstitch sewing machine are derived from the main shaft. Explain whether this statement is true or false by giving at least two (02) examples. (06 marks)
- (c) Briefly explain why the flat or V belt drives are not suitable for the driving mechanism of rotary type sewing hook. (02 marks)
- (d) Write down four (04) machine bed types considered in the classification of sewing machines. (04 marks)

- (Q7) (a) Describe the following feeding systems used in sewing machines.
- (i) Compound feed
 - (ii) Puller feed (06 marks)
- (b) Sewing machine needle selection greatly affects the quality of the finished garment. Discuss this statement based on the following.
- (i) Needle size
 - (ii) Needle finishes
 - (iii) Type of the needle point (06 marks)
- (c) Write down the three (03) types of positioning attachments used in sewing machines. Give one (01) example for each type. (03 marks)
- (Q8) (a) Discuss possible adjustments, which can be performed in a lockstitch sewing machine to avoid the following problems of stitch formation. Clearly mention the machine parts to be adjusted.
- (i) Unbalanced stitches
 - (ii) Different stitch densities
 - (iii) Missed stitches (09 marks)
- (b) Briefly describe six (06) types of automation devices used in modern sewing machines. (06 marks)