KUMARAGURU
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Register Number: ……..

B.TECH DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2009)

Seventh Semester

FASHION TECHNOLOGY

FTY118**:** Industrial Engineering in Apparel Industry

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Objective of Industrial engineering is to _____

a) analyse of work method
b) improve operating method and controlling costs of operations
c) analyse of operation time
d) control efficiency of operation

2. _____ is one of the method to improve productivity

a) reducing no.of labours
b) simplify product design and reduce variety
c) micro analysis on labour performance
d) reducing no.of machines

3. Identify the CORRECT statements with regard to work study

(i) It is a means of raising the productivity of a plant

(ii) It is systematic.

(iii) It is not the most accurate means yet evolved of setting standards of performance.

(iv) It is relatively cheap and easy to apply.

a) i, ii & iii only
b) ii, iii & iv only
c) i,iii & iv only
d) i,ii & iv only

4. Work station ergonomics in sewing can be improved by providing _____

a) Job bundle instead of garment bundle
b) lumbar support and swivel chair
c) rest for every 30 minutes
d) conveyor belt

5. Material handling is less in _____

a) synchronized line production system
b) cellular manufacturing system
c) line production system
d) job bundle system

6. _____ correlates movements and operations done by both the hands.

a) Multiple activity chart
b) Two-handed process chart
c) flow process grid chart
d) Travel chart

7. Standard time is given by _____

a) Standard Time = (Observed Time)(Rating Factor)(1+ PFD Allowance)
b) Standard Time = Basic operation time + allowances
c) Standard Time = (Observed Time)(Rating Factor)
d) Standard Time = Pre-determined motion standard time

8. Time standard is considered for _____

a) Method Study
b) PMTS
c) Cutting Process
d) MIS

9. Indirect labour cost is reduced in _____ system

a) Progressive bundle
b) Synchronized line production
c) Unit Production
d) Garment bundle

10. Identify the correct primary factors among the following in evaluating any production system for garment manufacture

a) Processing time, Transportation time, Temporary storage time & Inspection time
b) Processing time, Transportation time, Permanent storage time & Inspection time
c) Processing time, Transportation time & Inspection time
d) Processing time, Temporary storage time & Inspection time

PART B (10 x 2 = 20 Marks)

11. Mention different types of productivity measures.
12. Differentiate between “Basic work content” and “Added work content”.
13. Outline the significance of safety and ergonomics in apparel industry.
14. List out different principles involved in material handling.
15. Differentiate between Flow process chart and SIMO chart.
16. List out the principles of motion economy..
17. Define SAM.
18. List the various types of allowances considered in sewing operator performance rating.
19. Differentiate between batch production and synchronized line production systems.
20. Highlight the scope for improving cutting operation.

PART C (5 x 14 = 70 Marks)

21. a) Analyze the scope for improving productivity in an apparel factory in the context of work content.

(OR)

b) Give a detailed account on application of industrial engineering in operation design and control in an apparel factory.

22. a) Assess the use of automated material handling system in the cutting and sewing operations towards effective resource management

(OR)

b) Explain the effects of working conditions and the working environment on work study with examples from apparel manufacture.

23. a) With suitable example explain the application of String diagram and Chrono cycle graph.

(OR)

b) Construct and explain a multiple activity chart for the embroidery machine used for 3 different styles.

24. a) (i) Briefly explain about the concepts of various work measurement techniques. (6)

(ii) Calculate the total standard minutes value (SMV) and target output/hour for the following operation cycle carried out in a single needle lock stitch machine. (8)

S.No	Element description	Rating (British scale)	Observed time / occurrence (minutes)	Occurrence /operation cycle
1	Pick up and position parts	90	0.24	1
2	Sew first seam	100	0.46	1
3	Reposition and sew second seam	100	0.32	1
4	Bundle handling	90	0.74	1 / 100

Note: Personal & Fatigue allowance – 17%; Machine Delay Allowance – 9%

(OR)

b) Explain different performance rating systems adopted in apparel manufacture.

25. a) Evaluate the scope for improvement in operation efficiency in spreading, cutting and sewing using method study and work measurement.

(OR)

b) (i) Give the advantages of Unit Production System. (4)

(ii) Critically compare the manufacture of formal shirt using progressive bundle system and modular production system. (10)

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