KUMARAGURU
college of technology
character is life

B.TECH DEGREE EXAMINATIONS: MAY/JUNE 2023
(Regulation 2018)
Sixth Semester
Fashion Technology
U18FTT6003 Industrial Engineering in Apparel Industry

COURSE OUTCOMES

CO1:	Acquire broad knowledge of the various industrial engineering methods and tools associated with manufacturing systems and human factors
CO2:	Demonstrate modern industrial engineering methods and scientific solutions to apparel manufacturing towards economic, environmental, and societal context
CO3:	Perform as industry leaders in the global marketplace, capable of successfully planning, controlling, and implementing large-scale projects
CO4:	Understand and apply the principles of science, technology, engineering, and math involving industry-relevant problems
CO5:	Acquire skills to investigate, experiment and solve problem in context with productivity improvement and material handling
CO6:	Acquire skills to implement IE techniques in sewing floor of any apparel manufacturing firm

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

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Estimate the Operator productivity of garment unit producing 5000 T shirts per shift by engaging 125 operator	CO5	[K4]
2.	Distinguish between production and Productivity	CO1	[K4]
3.	Enlist the Objectives of material handling	CO5	[K1]
4.	Name few examples for Personal protective equipments	CO2	[K1]
5.	Identify how movement of material and men can be recorded during method study.	CO2	[K3]
6.	Distinguish between method study and work measurement	CO1	[K4]
7.	Measure the basic time, if observed time is 30 min and rating is 80	CO4	[K4]
8.	Differentiate between cumulative timing and flyback timing	CO4	[K1]
9.	Outline the importance of line balancing	CO3	[K2]
10.	List the different types of workaids used in sewing machines	CO6	[K1]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Elaborate the scope for implementing Industrial engineering techniques in Apparel industry	8	CO6	[K_6]
	b)	A company produces 160 kg of single jersey fabrics by consuming 200 kg of yarn for a particular period. For the next period, the output is doubled (320 kg) by consuming 420 kg of yarn and for the third period, the output is increased to 400 kg by consuming 430 kg of yarn. Interpret the three conditions based on productivity.	8	CO5	[K_5]
12.	a)	Working conditions and the working environment influence highly on productivity of the firm. Elaborate how occupational safety and health, ergonomics, lighting and ventilation can be considered in modern management techniques	8	CO5	[K_6]
	b)	Analyze how material handling can be reduced in Apparel industry and illustrate few material handling equipments used for it	8	CO5	[K_4]
13.	a)	Explain the application of multiple activity chart and Two handed chart with an example in each case from apparel manufacture.	8	CO1	[K_2]
	b)	Analyze how industrial engineering techniques are used in cutting , sewing and packing departments of apparel industry	8	CO4	[K_4]
14.	a)	Interpret the symbols used for flow process chart. Explain it with example from apparel industry activities	8	CO2	[K_5]
	b)	Demonstrate the principles of motion economy.	8	CO4	[K_2]
15.	a)	Classify the different work measurement methods and justify the method adopted for apparel industry	8	CO2	[K_2]
	b)	Solve to calculate the standard time with Personal & Fatigue allowance – 15%; Machine Delay Allowance – 5% for the given data.	8	CO4	[K_3]

Operation	Observed cycle time					RATING
	1	2	3	4	5	
Shoulder join	0.45	0.43	0.40	0.43	0.44	080
Sleeve join	0.48	0.46	0.49	0.46	0.47	0.90
Side seam	0.6	0.58	0.61	0.59	0.60	1
Bottom hem	0.52	0.53	0.51	0.54	0.54	1.1

16.	a)	Appraise different stages and process involved in Scientific method of training	8	CO3	[K5]
	b)	The XYZ company is facing problems like low productivity, longer production lead time, high rework and rejection, poor line balancing, low flexibility of style Changeover etc. Propose an action plan using Suitable industrial engineering tools and techniques to address these problems.	8	CO6	[K6]

****