Register Number:……..

KUMARAGURU
college of technology
character is life

B.TECH DEGREE EXAMINATIONS: NOV /DEC 2024

(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.	Identify the reasons of low productivity in garment industry	CO5	[K_4]
2.	Distinguish between Method study and Time study	CO1	[K_4]
3.	Enlist the Objectives of material handling	CO5	[K_1]
4.	Identify the name and purpose of the material handling quipment	CO2	[K_1]

(i) (ii)

5.	Identify how movement of material and men can be recorded during method study.	CO2	[K_3]
6.	Mention how Therbligs are related to micro motion study	CO1	[K_4]
7.	Measure the basic time, if observed time is 30 min and rating is 90	CO4	[K_4]

8.	Differentiate between cumulative timing and flyback timing			CO4	[K_1]
9.	What are the rules for line balancing?			CO3	[K_2]
10.	List the different types of workaids used in sewing machines			CO6	[K_1]

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	CO1	[K_6]
	b)	Outline the techniques of workstudy and basic procedure to conduct the same	8	CO1	[K_5]
12.	a)	Elaborate how occupational safety and health, ergonomics and lighting can be considered in modern management techniques to improve working conditions and productivity	8	CO5	[K_6]
	b)	Analyze how material handling can be reduced in Apparel industry and illustrate material handling equipments used for transporting fabric rolls, cutparts and packed garments	8	CO5	[K_4]
13.	a)	Explain the application of multiple activity chart with an example from apparel manufacturing process	6	CO2	[K_2]
	b)	Analyze how industrial engineering techniques are used in cutting and sewing departments	10	CO6	[K_4]
14.	a)	Interpret the symbols used for flow process chart. Explain it with example from apparel industry activities.	6	CO2	[K_5]
	b)	Demonstrate the principles of motion economy.	10	CO4	[K_2]
15.	a)	Explain about the tools required for stop watch time study	6	CO2	[K_2]
	b)	Solve to calculate the standard time with Personal & Fatigue allowance – 15%; Machine Delay Allowance – 5% for the given data.	10	CO4	[K_3]

Operation	Observed cycle time	RATING

	1	2	3	4	5	
Shoulder join	0.35	0.33	0.30	0.33	0.34	80
Sleeve join	0.48	0.46	0.49	0.46	0.47	90
Side seam	0.8	0.88	0.81	0.89	0.80	100
Bottom hem	0.52	0.53	0.51	0.54	0.54	70

16. a) XYZ Garments Ltd. is a medium-sized garment manufacturing company based in Tirupur. Specializing in the production of casual and formal wear, the company has a diverse portfolio of clients both domestically and internationally. With increasing competition and customer demands for faster delivery and higher quality, XYZ Garments recognized the need to enhance its operational efficiency. If you are appointed as Manager -IE, how will you implement Lean principles and face the challenges to transform the factory — 6 — CO3 — [K_6]

b) Explain the significance of different stages and process involved in Scientific method of training of sewing operators — 10 — CO3 — [K_5]

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