Q. Code:417548

Reg. No. | | | | | | | | | | | | | | |

B.E / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Fifth & Seventh Semester

OE18005 – INDUSTRIAL ENGINEERING AND MANAGEMENT

(Regulation 2018 / 2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

CO 1 Students will be able to distinguish the basics of Industrial engineering concepts.

CO 2 Students will be able to apply work study and method study in Industrial case studies.

CO 3 Students will be able to demonstrate the work sampling method and time study in a manufacturing Process.

CO 4 Students will be able to construct ergonomical models for industrial application.

CO 5 Students will be able to examine the industrial process by applying different techniques

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	List some basic examples where industrial engineers has made life easy in day to day activities.	**1**	**2**
2.	Distinguish between Halsey and Rowan plan.	**1**	**2**
3.	Why the industries are stressing on the need to study about MEMO motion?	**2**	**2**
4.	List the symbols used for following operations a. Mixing of raw materials b. Shifting of finished goods c. Examining material for quality	**2**	**2**
5.	What does confidence level in sampling refers to?	**3**	**2**
6.	Which of the motion study technique gives precise observations and why?	**3**	**2**
7.	Brief about the impact of stress developed in human body and list its consequences.	**4**	**2**
8.	What influence does noise, light and vibration have on human efficiency in industries?	**4**	**2**
9.	Why agile manufacturing is finding greater success in industries?	**5**	**2**

10.	"Supply chain is a part of logistics" or "Logistics is a part of Supply chain"-Which of the above statement is true? - Justify	**5**		**2**

PART- B (5 x 14 = 70 Marks)

		Marks	CO	RBT LEVEL
11. (a)	There are two different companies manufacturing two different plugs. The standard time per piece is 1.5 minutes. Output of two industries is 300 and 200 respectively per shift of 8 hours. a. What is the productivity of each per shift of 8 hours? b. What is the production of each per week (6 days) on the basis of double shift? Based on the observations, suggest some practices to improve worker's productivity.	**(14)**	**1**	**3**
	(OR)			
(b)	With a flow chart, illustrate the chronology of significant events and developments in the evolution of "Industrial &Systems Engineering" that has made transition from I 1.0 to I 4.0 and to I5.0 in future.	**(14)**	**1**	**3**
12. (a)	A sandwich shop is looking for ways of optimizing its process operations. Elaborate with appropriate symbols, how two handed process chart can help them to analyze the process and ways of optimizing them.	**(14)**	**2**	**3**
	(OR)			
(b)	Chepauk stadium is preparing for hosting the final match of IPL 2024. There are only 3 counters to sell tickets and time allotted to sell the tickets is only 8 hrs a day. By implementing work study procedure, elaborate in detail how the time consumed for a customer in queue can be optimized in Day 1 of ticket selling.	**(14)**	**2**	**3**
13. (a)	A job has been sub-divided into five elements. The time for each element and respective rating are given below:	**(14)**	**3**	**4**

Calculate the normal time and standard time for each element and for the job if the allowance is 15%.

Element	Observed Time	Rating Factor
1	0.8	85
2	0.7	90
3	1.2	110
4	0.6	95
5	1.4	120

(OR)

(b)	A glass manufacturing company is looking for productivity improvement in movement of glass from one shop floor to another. Using appropriate work measurement technique, examine how they can perform the task of moving the glass from one shop floor to other without any breakage or damage?	**(14)**	**3**	**4**
14. (a)	Driving of car is an example of man-machine system. With a similar example give a detailed write up about various components and functions of man- machine system and also list its advantages and limitations.	**(14)**	**4**	**4**

(OR)

(b)	In development of a photo studio, using qualitative and quantitative alphanumeric displays emphasize the importance of relation between controls and displays.	**(14)**	**4**	**4**
15. (a)	In post covid scenarios, elucidate with an example how logistics sector is flourishing and why?	**(14)**	**5**	**4**

(OR)

(b)	Elaborate in detail how the phases of six sigma could be applied to a bakery shop just similar to fast-food restaurants wherein customers want their ideal baked products made fresh, within minutes.	**(14)**	**5**	**4**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	The job assigned for an industrial engineer is to have a record of number of vehicles passing NH45 at night on a 12hour shift. Suggest possible steps for the worker to perform time study analysis for the same.	**(10)**	**2**	**5**

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