

EIGHTH SEMESTER B.TECH.DEGREE EXAMINATION, APRIL/MAY 2017

Elective- IV-FACILITIES PLANNING (MP)

MODEL QUESTION PAPER

Answer all questions in Part A. Each question in Part A carries 2 marks .

Answer any one full question from each module in Part B. Each question in part B carries 20 marks

Time 3 hrs

max 100 marks

Part A

1. a) What are the various functional areas to be reckoned in factory layout design?
- b) What are the basic steps in Job safety analysis?
- c) What is the concept of cost effective material handling?
- d) What is CORELAP?
- e) What are the guiding principles under which you will make a choice between the purchase of a new equipment and repair of an existing equipment?
- f) What are the sources of information to be considered for plant location?
- g) What are the advantages of product layout?
- h) What is line balancing and why it is done?
- i) What are the limitations of CRAFT?
- j) Suggest guidelines to avoid accidents.

Part B

Module 1

2. (a) What are the different types of layouts commonly used? Discuss their merits and demerits .
- (b) The sequence summary of 5 items is given in table below .Design a suitable layout.

Item No.	Processing sequence	Monthly production
1	ABEDC	1600
2	ABCD	800
3	ACDF	900
4	ABFD	1000
5	DABF	800

3. (a) Explain briefly the input data required for layout development.

(b) A company is setting an assembly line to produce 192 units per eight hours shift. The information regarding work elements in terms of times and immediate predecessors are given below.

Work element	Time(sec)	Immediate predecessor
A	40	None
B	80	A
C	30	D,E,F
D	25	B
E	20	B
F	15	B
G	120	A
H	145	G
I	130	H
J	115	C,I
TOTAL	720	

- i)What is the desired cycle time?
- ii)What is the theoretical number of station.?
- iii)Use largest candidate rule to work out the solution on a precedence diagram.
- iv)What are the efficiency and balance delay of the solution obtained?

Module 2

4. (a). Enumerate the safety considerations that must be reviewed in the layout.
- (b).What are the ways by which good lighting can be ensured in factories?
5. (a).Explain the guidelines for deciding location of stores and warehouses.
- (b).Explain briefly the factory services in the layout.

Module 3

- 6 .Explain various principles of material handling mentioning the activities of their implementation.

- 7 Explain the following with neat sketches.

(i)Conveyor systems (ii)Elevators (iii)Cranes and Hoisting equipments

Module 4

8. (a),What are the methods of replacement analysis? Briefly explain any one of them.

- (b).The maintenance cost and resale value per year of a machine whose purchase price is Rs.7000 is given below.

Year	1	2	3	4	5	6	7	8
Maintanance cost in Rs.	900	1200	1600	2100	2800	3700	4700	5900
Resale value in Rs.	4000	2000	1200	600	500	400	400	400

When should the machine be replaced?

- 9.(a).What is BEP? What is its significance?
- (b). For a particular product the following information is given
Selling price per unit Rs.10

Variable cost per unit Rs.6

Fixed cost Rs.100000

Due to inflation variable cost increase by 10% while fixed cost increase by 5%. If the break-even quantity is to remain constant by what % should the sales price to be raised?