

REVISED COURSE

(3 Hours)

Total Marks: 80

N.B. 1) Question No.1 is compulsory.

2) Attempt any three questions out of the remaining five questions.

3) Figures to the right indicate full marks.

4) Assume suitable data wherever required but justify the same.



- Q 1. Attempt any four (20)
- What are the different techniques of Industrial Engineering?
 - What is a multiple activity chart?
 - Define the term ergonomics? What are its objectives?
 - What is the importance of material handling? What are the different types of material handling equipment?
 - What do you understand by time value of money?
- Q 2. A. What are the factors influencing productivity? (8)
- What are the steps to be considered in value analysis? Explain with the help of an example. (8)
 - What was the contribution of different researchers to Industrial Engineering? (4)
- Q 3. A. What are the steps involved in micromotion study? (8)
- What are incentive schemes? What are the characteristics of good incentive scheme? (8)
 - What is the difference between value engineering and value analysis? (4)
- Q 4. A An operation involves the following elements given below with their related data. (8)

Element	Observed time (minutes)	Rating	Remarks
A	0.20	90	-
B	0.05	80	-
C	0.03	100	-
D	0.78	100	-
E	0.06	100	-
F	0.05	100	-
G	0.02	85	Once in 5 pieces
H	0.06	80	-
I	0.10	90	-
J	0.04	90	Once in 20 pieces

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Assuming rest and personal allowances as 13% and contingency allowance as 2%, calculate standard time of the job.

B. What do you understand by job evaluation? What are its objectives? (8)

C. What are the different methods of depreciation? (4)

Q 5. A. Following table shows the Cash Flow (Rs.) for a certain project for its respective years. (10)

Year	0	1	2	3	4	5
Cash Flow	10,00,000	2,00,000	2,00,000	3,00,000	3,00,000	3,50,000

Find:-

i) If the project is acceptable by NPV method considering discount rate as 10%.

ii) For the same project, the discount rate by IRR method.

B. What are the different types of plant layout? What are their advantages and disadvantages? (10)

Q.6 Write short notes on :- (20)

A. Assembly line balancing

B. PMTS

C. Elements of cost

D. Cyclegraph and chrono cyclegraph.