

P P SAVANI UNIVERSITY

Sixth Semester of B. Tech. Examination

May 2022

SEME3090 Industrial Engineering

26.05.2022, Thursday

Time: 09:00 a.m. To 11:30 a.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in same answer sheet.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

Q - 1 Answer the following questions. [05]

- (i) Define: Plant Location
- (ii) State various methods of Departmentation.
- (iii) Define: Work Study
- (iv) Define: Performance Rating
- (v) State various techniques of work measurement.

Q - 2 (a) State various types of plant layout and explain any one in detail with suitable diagram. [05]

Q - 2 (b) Explain the principal factors to be considered for the location of a plant [05]

OR

Q - 2 (a) Compare: Rural Location Vs Urban Location with respect to various factors. [05]

Q - 2 (b) State the objectives of a good plant layout. [05]

Q - 3 (a) State the difference between a chart and a diagram? Explain the various process chart symbols used in making an FPC. [05]

Q - 3 (b) Explain Travel chart with suitable example. [05]

OR

Q - 3 (a) What is method study? Explain objective of method study. [05]

Q - 3 (b) Explain Flow Process chart with suitable example. [05]

Q - 4 Attempt anyone. [05]

- (i) Discuss the reasons for 'Low productivity' in the organization.
- (ii) Explain in brief the normal work area and work place design.

SECTION - II

Q - 1 Answer the following questions. [05]

- (i) Define: Margin of Safety.
- (ii) Define: Break Even Point.
- (iii) Define Adolescent in relation with factory's act 1948.
- (iv) What is MRP?
- (v) What is PPC?

Q - 2 (a) What is forecasting? List important methods of forecasting sales of a product [05]

Q - 2 (b) For the given data, propose efficient schedule using: [05]

- i) First come first serve
- ii) Longest process time
- iii) Due date.

Job	A	B	C	D	E
Processing time (days)	9	7	5	11	6
Due date	16	20	25	15	40

OR

Q - 2 (a) Explain man and machine chart with suitable example. [05]

Q - 2 (b) Explain KANBAN System. [05]

- Q - 3 (a) Seven jobs performed on machine 1 and then on machine 2. Time in hour taken by each job on each machine is as below. [05]

Job	A	B	C	D	E	F	G
M1	5	3	2	10	12	6	8
M2	3	2	5	11	10	7	3

Determine the optimum sequence of jobs and minimum time elapsed.

- Q - 3 (b) The sales of drilling machine during the last six years are as under. Forecast the sales in the year 2016. By using regression analysis techniques, Establish the equation of straight line: [05]

Year	2010	2011	2012	2013	2014	2015
Sales	10	15	19	22	24	25

OR

- Q - 3 (a) Find the sequence that minimum total elapsed time in hours required to complete the following jobs on three machines M1, M2, M3. [05]

Jobs	P	Q	R	S	T
M1	6	8	7	10	6
M2	3	2	5	6	4
M3	4	8	6	7	8

- Q - 3 (b) Explain ABC analysis. [05]

- Q - 4 Attempt anyone. [05]

- (i) What is industrial legislation? Name the different acts which are helpful in solving the industrial disputes. Discuss any one act in detail.

- (ii) What are the major safety provision in factory's act 1948?
