

Total No. of Questions :6]

SEAT No. :

**P1404**

**BE/Insem./APR-171**

[Total No. of Pages : 2

**B.E (Mechanical)**

**INDUSTRIAL ENGINEERING**

**(2015 Pattern) (Semester - II) (Elective -III)**

**(Paper - II) (402049 B)**

*Time : 1½ Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) Answer Q1 or 2, Q3 or 4, Q5 or 6.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume Suitable data, if necessary.

**Q1)** a) Define the term production. Distinguish between production and production system. [5]

b) Define the term 'organisation structure'. What are the characteristics of a sound organisation structure? Explain. [5]

OR

**Q2)** a) Distinguish between job-production and batch production. [4]

b) What are the various functions of management? Discuss them briefly. [6]

**Q3)** a) Explain the procedure of Method study. [5]

b) Describe the significance, construction and application of following recording technique. [5]

i) Operation process chart.

ii) Multiple activity chart.

OR

**Q4)** a) Describe the principles of motion economy. How they are related to work place layout? Explain. [6]

b) What are Therbligs? When they are used? List five Therbligs with symbols. [4]

**P.T.O.**

**Q5) a)** What do you understand by work measurement? What are the objectives of work measurement in an industry? [4]

b) The worker in an engineering company is expected to work for 400 minutes in a shift of 8 hrs. The remaining time is meant for rest and personal needs. Determine the standard time per piece of a job whose normal time is 2 minutes. Calculate number of pieces to be produced per day. If the workman engaged on the above job produced 180 pieces in the shift, what is his efficiency? [6]

OR

**Q6) a)** An operator working on a pillar drill performed the following elements for which the observed times and ratings are given below. [6]

Element	Observed time (Minutes)	Rating	Relaxation Allowance %
1	0.20	80	11
2	0.08	100	11
3	2.20	90	13
4	0.05	80	11
5	0.10	110	11

Calculate normal time of each element and normal time of the job. Also determine Standard time of the job.

b) Describe the procedure for conducting work sampling in an organization. Also mention the advantages and disadvantages of these techniques. [4]

