

[illegible]

**SECTION-B**

- Q2 Enumerate the role of an industrial engineer in industry.
- Q3 Discuss the role of work study in improving plant productivity and safety.
- Q4 Explain in detail “*Micro-motion Study*” along with its various applications.
- Q5 An operator manufactures 50 jobs in 6 hours and 30 min. If this time includes the time for setting his machine. Calculate the operator's efficiency. The Standard time allowed for the job was :
- a) Setting Time = 35 min.
  - b) Production time per piece = 8 min.
- Q6 “*Value analysis is a remedial process while value engineering is a preventive process*” Discuss.

**SECTION-C**

- Q7 Enumerate the basic types of plant layout and write their characteristic, advantages and applications features in detail.
- Q8 The following estimates of time have been made in connection with the manufacture of a component:
- a) Loading piece into machine = 30 Seconds
  - b) Starting the machine and engaging the feed lever = 15 Seconds
  - c) Running time (automatic stop at the end) = 300 Seconds
  - d) Unloading components = 20 Seconds
  - e) Inspecting components = 45 seconds
  - f) Packing components in the box = 10 Seconds

Compute the cycle time and draw the activity chart of the operator and machine.

- Q9 What are the various systems in use of “*Predetermined Motion Time Standards*”? Explain one most popular amongst them.