

BT - 5 / D-19

PRODUCTION TECHNOLOGY-I

Paper-ME-311N

Time allowed : 3 hours]

[Maximum marks : 75

Note:- Attempt five questions in all, selecting at least one question from each unit.

Unit-I

1. (a) Explain the working of translator type of hydraulic drive. 8
- (b) Describe any one of the mechanisms that can transform the rotational motion to translational motion. 7
2. (a) Describe the narrow or cross type of ray diagram. 7
- (b) Why speed regulation is required? What are the benefits of adopting step-less regulation over stepped regulation? 8

Unit-II

3. (a) Give the construction details of different taps used for tapping. 6
- (b) Explain the center thread grinding with a neat sketch. 9
4. (a) Describe the gear honing with a neat sketch. 7
- (b) What are various gear forming methods? Discuss in detail the gear hobbing process with its advantages and limitations over other generating processes. 8

(2)

Unit-III

5. (a) State the necessity of employing non-conventional machining processes. Classify non-conventional machining processes stating the energy sources used and with suitable examples. 7
- (b) Discuss the parametric analysis of abrasive jet machining with well-labeled graphs. 8
6. (a) What are the various causes that induce self-excited vibrations in a machine tool? 7
- (b) What is vibration isolation? What are different methods of isolating the machine tool from vibrations? 8

Unit-IV

7. (a) Explain any two non-mechanical type clamping methods. 7
- (b) Describe the construction details of duplex and indexing fixtures. 8
8. (a) What are the advantages and disadvantages of making the jigs and fixtures through welding? 7
- (b) Explain any two the drilling jigs in detail with well labeled diagrams. 8