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***B.Tech. Degree III Semester Regular/Supplementary Examination in  
Marine Engineering December 2021***

**19-208-0303 PRODUCTION TECHNOLOGY  
(2019 Scheme)**

Time : 3 Hours

Maximum Marks : 60

(5 × 15 = 75)

- I. (a) Explain the tool nomenclature, with respect to a single point cutting tool. (10)  
(b) Differentiate between orthogonal cutting and oblique cutting. (5)
- OR**
- II. (a) What are the most common geometrical features that can be measured using a vernier caliper? With a neat diagram explain the constructional features of a vernier caliper, and write the procedure to read a measurement. (10)  
(b) What do you mean by zero error? What are the types of zero errors, how can those be compensated in a measurement? Explain with numerical examples. (5)
- III. (a) Explain the parts, working, and uses of a Capstan lathe. (10)  
(b) List 5 key differences between a Capstan and a Turret lathe. (5)
- OR**
- IV. (a) Explain the parts, working, and uses of a Center lathe. (10)  
(b) List any 10 operations, which can be performed on a Center lathe. (5)
- V. With schematic block diagrams explain the parts, working, and applications of various abrasive machining operations that you are familiar with. (15)
- OR**
- VI. (a) What do you mean by the principle of microscopy? Explain the parts, working, and list 5 applications of a tool maker's microscope. (10)  
(b) How fringe formation happens in an optical flat? (5)
- VII. With neat sketches, explain the concepts of limits, fits, and tolerances (15)
- OR**
- VIII. (a) Explain the objectives, importance, and applicability of Factories Act' 1948. (10)  
(b) Explain the features, and uses of any three personal safety equipments. (5)
- IX. (a) Explain a Liquid-Solid-State bonding process in detail, and state two criteria, which establish a good quality bond. (10)  
(b) List at least 5 types of heating techniques commonly used in a brazing process, and state their relative advantages/uses. (5)
- OR**
- X. (a) Explain Oxy-Acetylene welding. (10)  
(b) Write notes on types of flames in a gas welding process. (5)