

**6245**  
**BOARD DIPLOMA EXAMINATION**  
**MARCH/APRIL - 2019**  
**DIPLOMA IN MECHANICAL ENGINEERING**  
**PRODUCTION TECHNOLOGY-I**  
**THIRD SEMESTER EXAMINATION**

**Time: 3 Hours**

**Total Marks: 80**

**PART - A (3m x 10 = 30m)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. State the principle of reaming operation on a lathe
2. State the use of follower rest?
3. Write any three differences between capstan lathe and turret lathe
4. State the specification of a shaper ?
5. State the main differences between planer and shaper
6. List out the different types of cutting fluids used in machining
7. Sketch an oxy-acetylene flame and identify the various zones
8. What is the principle of arc welding?
9. What are the most commonly used dimensional measurements
10. List out practical applications of toolmakers microscope?

**PART - B (10m x 5 = 50m)**

*Note 1: Answer any five questions and each question carries 10 marks*

*2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

11. (a) Draw a sketch of single point cutting tool and label the parts  
 (b) State the functions of tool angles of single point cutting tool
- \* 12. Explain the work holding devices used on capstan or turret lathes with the help of sketches
13. Explain the Whitworth quick return mechanism of a slotter with line diagram
14. Explain the working principle of horizontal broaching machine with a sketch
- \* 15. Discuss various types of lubricants with examples?

16. List out arc welding equipment and accessories and explain them in detail
17. Explain the principles of operation of CO<sub>2</sub> welding and state its advantages, disadvantages and applications?
18. Define surface roughness? Explain various methods of measuring surface roughness

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