

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B. Tech. Summer 2018 - 19 Examination**

**Semester: 4**  
**Subject Code: 03109253**  
**Subject Name: Production Technology**

**Date: 03/05/2019**  
**Time: 2:00pm to 4:30pm**  
**Total Marks: 60**

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Objective Type Questions.****(15)**

1. Merchant Circle Diagram is used to find  
**(A) Cutting Force (B) Feed Force (C) Radial Force (D) Shear Force**
2. Projection Welding refers to  
**(A) Pressure Welding (B) TIG Welding (C) Submerged Welding (D) Resistance Welding**
3. In AJM, What is the mechanism of removal of material from the work piece?  
**(A) Abrasion (B) Corrosion (C) Electron transfer (D) Vaporization**
4. The point of contact of two pitch circles of mating gears is called  
**(A) Pressure point (B) Pitch point (C) Module (D) Contact point**
5. In Which dies, Pilots are used?  
**(A) Compound dies (B) Transfer dies (C) Progressive dies (D) Gang dies**
6. \_\_\_\_\_ is the curved portion at the bottom of the tool where base and flank meet.
7. \_\_\_\_\_ is the process of making a large number of very small holes close to each other in flat work pieces.
8. In \_\_\_\_\_ welding, filler metal is never used.
9. Ultrasonic Machining is also called \_\_\_\_\_.
10. \_\_\_\_\_ is a thread cutting process for producing internal threads.
11. What is a built-up edge & how is it formed?
12. What is Dielectric fluid in EDM?
13. What is hob?
14. What is the principle of resistance welding?
15. What are main elements of Jigs and Fixtures?

**Q.2 Answer the following questions. (Attempt any three)****(15)**

- A) What is tool life? State factors influencing on it in detail.
- B) Explain gear hobbing process with neat sketch.
- C) Describe any five cutting operations performed on presses with neat sketch.
- D) Differentiate between Jigs and Fixtures.

**Q.3 A) Explain Abrasive Jet Machining with Schematic diagram stating its advantages and limitations.****(07)**

- B) Explain the principle of arc welding with neat sketch. State the parameters affecting the arc.

**OR**

- B) Discuss with neat sketch MIG welding process. State its advantages and limitations.

**(08)****Q.4 A) Draw Merchant's force diagram. Derive the equations for frictional force, normal reaction, shear force and normal force.****(07)****OR**

- A) During an orthogonal machining (turning) operation of C-40 steel, the following data were obtained. (1) Chip thickness = 0.45 mm (2) Width of cut = 2.5 mm (3) Feed = 0.25 mm/rev (4) Tangential cut force = 1130 N (5) Feed thrust force = 295N (6) Cutting speed = 2.5 m/s (7) Rake angle = 10°. Calculate (1) Force of shear at shear plane (2) co-efficient of friction.

**(07)**

- B) Explain with neat sketch working principle, advantages and limitations of USM.

**(08)**