

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2022-23 Examination

Semester: 4

Date: 27/03/2023

Subject Code: 203122261

Time: 02:00 pm to 04:30 pm

Subject Name: Manufacturing Technology

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 - (Fill in the blanks, one word answer, MCQ-not more than Five in case of MCQ) (All are compulsory) (Each of one mark) (15)

1. _____ type of sand will in direct contact with poured molten material.
2. Cutting fluid has no effect on the tool life. A.True B.False
3. Up milling is also called conventional milling. A.True B.False
4. _____ type of chuck is preferred for quick setting and accurate centering of a job.
5. _____ is a negative pattern allowances.
6. Cutting is done on the end of the cutter as well as periphery in _____ type of milling Process.
7. Lead = _____ Pitch in Double start thread.
8. Discontinued chips are formed during machining of _____.
9. Which attachment can be used for machining 2metre long seamless metallic tubes?
10. Discontinued chips are formed during machining of _____.
 A. mild steel B. cast iron C. high speed steel D. high carbon steel
11. Twist drills are made of _____.
 A. high speed steel B. carbon steel C. stainless steel D. either (a) or (b)
12. Reciprocation of the cutting tool in shaping machines is accomplished by _____.
13. Which of the following casting methods utilises wax pattern.....
 A. Shell moulding B. Plaster moulding C. Slush casting D. Investment casting
14. In lathe, the carriage and tail stock are guided on.....
 A. Same guideways B. Different guideways C. Any of the above D. Not guided on guideways
15. TIG welding is best suited for welding.....
 A. Mild welding B. Stainless steel C. Carbon steel D. Silver E. Aluminium

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

- A) Explain term pattern and Core in casting with application. Explain different pattern allowances with neat sketch.
- B) Explain the principle of quick return motion in the shaper. Explain with worth quick return mechanism with neat sketch.
- C) Explain the methods of taper turning on lathe machine. State limitations of each method.
- D) Draw tool geometry for Twisted Drill and explain its parameters.

Q.3 A) What is gating system in sand casting? Explain the entire component with neat sketch and mention their purpose. (07)

- B) Classify different types of chips and explain about chip thickness ratio? Draw a merchant Circle Diagram and derive equation of Shear Angle. (08)

OR

- B) Explain different operations performed with the help of a lathe with neat sketch. Mention Depth of Cut and Feed for each operation. (08)

Q.4 A) Explain Single Point Cutting Tool Geometry with neat Sketch and mention single point tool signature with all parameters. (07)**OR**

- A) Explain TIG and MIG welding process with applications. Explain various flames produced in an Oxy-acetylene gas welding. (07)

- B) What is indexing mechanism in milling machine and explain Up milling and Down milling with neat sketch. (08)