



P.E.S. College of Engineering, Mandya - 571 401
 (An Autonomous Institution affiliated to VTU, Belagavi)
Third Semester, B.E. - Automobile Engineering
Semester End Examination; Dec. - 2019
Manufacturing Methods

Time: 3 hrs

Max. Marks: 100

Note: i) PART - A is compulsory. **Two** marks for each question.

ii) PART - B: Answer any **Two** sub questions (from a, b, c) for Maximum of **18 marks** from each unit.

Q. No.	Questions	Marks
I : PART - A		10
I a.	What is casting?	2
b.	Explain any two Flames used in gas welding.	2
c.	Write a note on Up milling and Down milling.	2
d.	List the applications of Abrasive jet machining.	2
e.	Mention few Applications of Forging.	2
II : PART - B		90
UNIT - I		18
1 a.	Enumerate the desirable properties of moulding sand.	9
b.	With neat sketch, explain shell moulding process.	9
c.	List the casting defects. List the causes and recommend remedial measures to overcome them.	9
UNIT - II		18
2 a.	Explain principle of Resistance welding and Thermit welding.	9
b.	What are the welding defects? Explain the methods to detect the welding defects.	9
c.	Differentiate between welding, soldering and brazing.	9
UNIT - III		18
3 a.	Sketch and explain the centreless grinding machine.	9
b.	Sketch and explain the shaper with labeling principle parts of it.	9
c.	Explain briefly with neat sketches of any six drilling machine operations.	9
UNIT - IV		18
4 a.	With a neat sketch, explain the working principle of USM.	9
b.	What are the basic requirements of dielectric fluid used in EDM?	9
c.	What are the advantages and disadvantages of chemical Machining process?	9
UNIT - V		18
5 a.	Explain with neat sketches different types of rolling mill arrangements.	9
b.	With neat sketches, explain briefly direct and indirect extrusion processes.	9
c.	What is powder metallurgy? Explain steps involved and applications of powder metallurgy.	9