

2124
B.E. (Mechanical Engineering)
Third Semester
MEC-305: Manufacturing Processes

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

Q. No.		Marks
1 (a)	Discuss the influence of each of the following alloying elements on the properties of steel: (a) Molybdenum (b) Chromium	2
(b)	What is rolling? Classify them and explain.	2
(c)	What are the various pattern allowances? Explain each.	2
(d)	What is polarity? Describe each one's applications?	2
(e)	Describe briquetting and sintering processes?	2
SECTION-A		
2(a)	Discuss ceramic cutting tool material w.r.t. manufacturing, properties, applications, and limitations.	5
(b)	Explain CBN and diamond as cutting tool materials.	5
3(a)	What are the different types of cast irons? Draw the micro-structure of any four types of cast irons. Give one application for each.	5
(b)	Mention the defects in casting process. Explain causes and remedies of each defect with neat diagram.	5
4 (a)	How the IC engine rod is made? Explain the process with neat diagrams.	5
(b)	Name the important process variables in drawing, and explain how they affect the drawing process.	5
SECTION-B		
5(a)	Explain the construction and working of welding transformer?	5
(b)	Differentiate soldering and brazing?	5
6 (a)	How do you manufacture the following powder metallurgy components? (i). Porous bearings (ii). Electrical contact materials	5
(b)	Explain the various types of high - temperature compaction processes?	5
7(a)	Define atomization method of producing metal powders. Explain gas atomization with the help of a schematic diagram.	5
(b)	Describe the crushing and ball milling processes of powder production with the help of schematic diagrams.	5

x-x-x