

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY
B. Tech. in Mechanical Engineering,
2nd Year (4th Semester)

End Term Examination, May, 2022

Course No. : ME1106
 Course Title : Production Technology - I
 Nature of Exam : Only laptop with internet facility is allowed
 Weightage : 30%
 Max Marks : 30
 Duration : 120 Minutes
 Date of Exam :

No. of Pages	=	01
No. of Questions	=	04

Session: _____

Note:

1. Please read through and follow all the instructions.
2. All parts of a question should be answered consecutively.
3. Draw neat diagrams using pencil.
4. All questions are compulsory.

Ques No	Questions	LOs	Marks
1	Design of riser plays vital role to get quality casting. Suggest the shape of riser out of cylindrical, spherical and cuboidal and give the reasons, why you suggest so? Also, discuss about the practical implication of the best riser you suggest (if any?).	LO1	7
2	Two metallic sheets, each of 1.2 mm thickness, are welded in a lap joint configuration by resistance spot welding at a welding current of 11 kA and welding time of 0.002 second. A spherical fusion zone extending up to the full thickness of each sheet is formed. Determine the melting efficiency when the properties of the metallic sheets are, ambient temperature = 295 K, melting temperature = 1800 K, density = 7800 kg/m ³ , latent heat of fusion = 287 kJ/kg, specific heat = 797 J/kg K, Assume: (i) contact resistance along sheet—sheet interface is 490 micro-ohm and along electrode—sheet interface is zero; (ii) no conductive heat loss through the bulk sheet materials; and (iii) the complete weld fusion zone is at the melting temperature.	LO2	8
3	Laser beam machining are in trends in ship building industries, discuss the benefits of doing so. Also discuss how laser beam machining is different from plasma arc machining?	LO3	7
4	Discuss a case to explain implementation of flexible manufacturing system in a forging shop.	LO4	8