

2123
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 Part.

x-x-x

- 1 Attempt the following
- a) What do you mean by ingate in casting?
 - b) Which melting furnace is suitable for cast iron and why?
 - c) What is recrystallization temperature of iron?
 - d) Which electrode polarity is preferred in EAW and why?
 - e) What is spatter?
- 5*2
- Part A**
- 2 a) Explain piercing and blanking operations with diagram also write applications. Clearance is provided to which part in punching operation? 5
- b) How metal forming is different from casting? What is z-mill? Define. 5
- 3 a) Differentiate slab, billet and bloom. What is the significance of friction in rolling process? Specify w.r.t angle of contact. 5
- b) Why aluminum Y-alloy is used in piston cylinder heads? Differentiate grey cast iron and white cast iron w.r.t. composition and property. 5
- 4 a) What is the recrystallization temperature range w.r.t. absolute melting temperature for different metal forming? Write application of each process. 5
- b) What is the effect of tungsten (W) on base metal in terms of mechanical properties? Write its alloy name and application (at least three). 5
- Part B**
- 5 a) Why casting is preferred? What is the function of core? 5
- b) What is MIG? Write its advantages and applications. 5
- 6 a) How cooling and solidification takes place in casting? Explain with neat sketch. 5
- b) What are welding techniques used in pressure welding? Write the relationship between nugget and current. 5
- 7 a) What is briquetting? Write its advantages and applications. 5
- b) What is fusion welding? Which sector having more applications and why? 5

x-x-x