

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, April/May 2018

Course: Advanced forming and casting process (IPEG 461)

Semester: VIII

Program: B Tech IPE

Time: 03 hrs.
Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	What is the difference between the solidification of pure metals and metal alloys?	5	CO 3
Q 2	Why are cast irons easy to cast than steels?	5	CO 3
Q 3	Why risers are not used in the die casting	5	CO 4
Q 4	Surface area of a mould need to be larger than the part being cast. Give reasons.	5	CO 3

SECTION B

Q 5	Explain about the design requirements of the gating system with neat sketches.	10	CO 3
Q 6	Which of the following consideration is/are important for a riser to function properly?	10	CO 4
Q 7	Effect of friction and heat on forming processes	10	CO 1
Q 8	Discuss various forging and rolling defects and their effects.	10	
	OR Contrast on the significance of directional solidification and methods to achieve it during casting process.		CO 1

SECTION-C

Q 9	i) What are the different types of gates? What are the different objectives that a designed gating system must accomplish? ii) Discuss the working principle; applications and limitations of shell molding process	20	CO 3
Q 10	Explain plastic molding and injection molding with the help of neat sketches. OR Explain with the help of neat sketch following advanced casting Processes. i) Centrifugal casting ii) Continuous casting	20	CO 5