

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May-June 2021

Course: Numerical Methods for Multiphase flow
Program: M.Tech CFD
Course Code: ASEG 7028

Semester: II
Time 03 hrs.
Max. Marks: 100

SECTION A

S. No.		Marks	CO
Q1.	Differentiate slug flow and churn flow.	5	CO1
Q2.	Explain annular flow and stratified flow.	5	CO1
Q3.	List various kind of dispersed multiphase flow.	5	CO2
Q4.	List various flow regime observed in boiling of liquid in vertical heated tubes.	5	CO2
Q5.	Discuss about flow regime based multiphase flow models.	5	CO3
Q6.	Differentiate Lagrangian-Euler approach and Euler- Euler approach.	5	CO4

SECTION B

Q7.	Explain the flow phenomenon of gas-liquid upflow in vertical pipes.	10	CO1
Q8	Differentiate empirical relations with analytical method. Discuss about any one empirical relation for multiphase flow.	10	CO2
Q9	Discuss about separated flow formulation for prediction of multiphase flow parameters.	10	CO3
Q10	Compare drift flux model with homogeneous model.	10	CO3
Q11	Explain the formulation of governing equations of mixture model. Which kind of multiphase flows are well predicted by this model? Provide reason for your answer.	10	CO4

SECTION-C

Q 12	Emphasis on formulation and application of VOF model in simulation of multiphase flow. Describe steps involved in prediction of cavitation phenomenon using VOF model.	20	CO4
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