

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2020

Course: Flow Visualization and Processing

Semester: II

Program: M.Tech CFD

Course Code: ASEG7029

Max. Marks: 100

Instructions:

1. For Theory based : Type the Answers in word file
2. For Figures if any : Draw a free hand sketch and insert the same word file
3. For Numerical : Solve it in a paper and insert in the same word file
4. Upload as a single word file for all the Question in Blackboard.

Note : Please upload the word document only, Do not upload PDF and or other format. The answer scripts will be considered for evaluation only through Blackboard. No other mode of submission is acceptable.

NOTE : The submission time of the Question Paper Answer Sheet is 24 Hrs from the scheduled time (exceptional provision due to extraordinary circumstance due to COVID-19 and due to internet connectivity issues in the far-flung areas). No Submission will be entertained after 24 Hrs

SECTION A

S. No.	Question	Marks	CO
Q 1	Define concept of filtering and mapping in flow visualization.	4	CO1
Q 2	Discuss the importance of visualization techniques in engineering.	4	CO1
Q 3	Identify the importance of contour in visualizing data specific to fluid flow.	4	CO2
Q 4	Differentiate pathlines and streamlines	4	CO3
Q 5	Emphasis on the various data visualisation methods available in TechPlot.	4	CO4

SECTION B

Q 6	Describe three experimental flow visualisation methods in brief.	10	CO1
Q 7	Discuss various methods of visualizing 1D, 2D and 3D scalar data.	10	CO2
Q 8	Identify the applications of bar graph, pie chart, histogram and scatterplot in flow visualization with example.	10	CO2
Q 9	Evaluate texture based methods of vector data visualization and its applications.	10	CO3

SECTION-C

Q 10	Demonstrate various fundamental techniques to visualize vector data.	20	CO3
Q 11	Emphasis on various flow visualization techniques available in Ansys Fluent.	20	CO4