

Scheme of Valuation/Answer Key

(Scheme of evaluation (marks in brackets) and answers of problems/key)

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER B.TECH DEGREE(S) EXAMINATION, MAY 2019

Course Code: CH205

Course Name: FLUID AND PARTICLE MECHANICS I

1.a) Diagram – 3 Marks, Explanation – 3 Marks

1.b) Shear stress calculation – 3 Marks; Shear rate – 3 Marks. For each one 0.5 Marks weightage may be given for units.

1.c) Valid explanation – 3 Marks

2.a) Classification – Brief explanation and one example in each - Marks

2.b) Justification of the statement – 2 Marks

2.c) Formulation of solution using suitable equations – 4 Marks

Substitution and generation of final answer with proper units – 3 Marks

3.a) Define Knudsen number – 2 Marks; Stating the range in continuum – 2 Marks

3.b) Sketch – 3 Marks

Formulation of solution using suitable equations – 4 Marks

Substitution and generation of final answer with proper units – 2 Marks

3.c) Specific volume – 1 mark, specific mass – 1 mark

4.a) Valid explanation – 5 marks

4.b) Derivation – 10 marks

5.a) Formulation of solution -2 marks; stream function – 2 marks; velocity – 2 marks; acceleration – 2 marks

5. b) Valid explanation – 4marks

5.c) Any 2 differences – 3 marks

6.a) Derivation - 7 marks

6.b) Pressure head – 4marks; rate of flow – 4 marks

7.a) Derivation – 5 marks

7.b) Formulation of solution using suitable equations – 5 Marks

Substitution and generation of final answer with proper units – 3 Marks

7.c) Derivation – 6 marks; final answer – 1 mark

8.a) Each part – 2 marks

8.b) Statement – 3 marks

8.c) sketches – 2.5 marks; working – 2.5 marks

8.d)Explanation- 2 marks; calculation – 2 marks

9.a) 4 Marks each

9.b) Any 4 features – 4 marks

9. c) Formulation of solution -2 marks; stream function – 2 marks; velocity – 2 marks; acceleration – 2 marks