



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2018

Program: B.Tech CSE G&G

Subject (Course): Computer Animation Algorithms and Techniques

Course Code : CSEG 340

No. of page/s: 1

Semester – VI

Max. Marks : 100

Duration : 3 Hrs

Section A (each question consists of 4 marks)

1. Explain the importance of curves and control points with help of an example.
2. Differentiate between Scalars, Vectors and Tensors with respect to animation concepts.
3. What are Computer Animation algorithms? How should we design one?
4. What do you understand by physical dynamics? Explain with example

Section B (each question consists of 10 marks)

Design an algorithm for animating the following scenarios:

1. Curtain flow in wind
2. Hair movement
3. Ball morphed to glass
4. Normal face to any smiley face

Section C (each question consists of 20 marks, attempt any two)

1. Explain data Representation and various types of data representations. Using volumetric data representations, design an algorithm to convert cube to cylinder and visualize it both in longitudinal and transverse views.
2. Discuss the following with all set of equations and diagrams:
 - a) Scaling
 - b) Rotation
 - c) Translation
 - d) Beizer Curves
 - e) B-Spline
3. Design an algorithm to simulate fluid flow in different situations:
 - a) Inside a pipe
 - b) In a river.