Midterm Exam
CMPS20: Game Design Experience
SAMPLE

Part I : Multiple Choice – Mark all correct answers (20 points)

Question 1:
(2 Points) Which of the following correctly declares a two-dimensional array in C#?
1. int[,] myArray;
2. int[][] myArray;
3. int[2] myArray;

Question 2:
(2 Points) If a method is marked as protected who can access it?
1. Classes that are both in the same assembly and derived from the declaring class.
2. Only methods that are in the same class as the method in question.
3. Classes within the same assembly, and classes derived from the declaring class.
4. None of the above

Question 3:
(10 points) Mix-n-match. Match each item in the left hand column with one in the right hand column by writing its letter.

___ When two objects intersected
A. Collision detection
B. Normal vector
C. Shader language
D. 3D camera
E. Mesh
F. A* algorithm
G. Texture coordinate
H. World matrix

___ Perpendicular to a surface
___ Convex Hull
___ If two objects intersected
___ Vector of length 1

Question 4:
(2 Points) Which of the following are true for the speed of collision checking with a: OBB b: AABB c: Spherical Bounding Volume d: Convex Hull
1. a < b < d < c
2. c < b < a < d
3. b < c < d < a
4. none of the above
Part II: Long Answers (Use back of the sheet if you need more space and clearly mark the Question number with your answer)

Question 1. (5 points) What is naïve collision detection?

Question 2. (5 points) What is the main drawback of naïve collision detection?
(2 Bonus points) Which are the two ways in which you can optimize collision detection?

Question 3. (15 points) Write pseudo-code for collision detection in 2D with Axis-Aligned Bounding Boxes.