**TOTAL: [100 marks]**

**Business, Non-Art, Game Design**

**Multiple Choice [10 marks]**

1. **[2 marks]** You are making your **first** indie, PC game as a **solo** **developer**, and want to earn money by releasing it on **Steam**. Which game should you make?
   1. 2D platformer
   2. MMORPG
   3. Simulation/strategy game
   4. Local multiplayer party game
2. **[1]** The MEDIAN income ($USD) of Steam games in 2019 were:
   1. $8
   2. $1,136
   3. $16,492
   4. $84,851
3. **[2]** Which of these is activities is **NOT EFFECTIVE** at videogame conventions (Pax, Gamescom, GDC)?
   1. Meeting developers
   2. Getting Steam wishlists
   3. Trying out cool games
   4. Meeting publishers
4. **[2]** What is the single most important decision (sales-wise) when creating a new game?
   1. Hook
   2. Art style
   3. Team
   4. Genre
5. **[1]** **Government** **funding** options for making videogames in **Saskatchewan** are:
   1. Canada Media Fund
   2. Canada Media Fund & Creative Saskatchewan
   3. Creative Saskatchewan
   4. None
6. **[1]** For the average Steam game, 50-90% of sales happen in the first two weeks after launch.
   1. TRUE
   2. FALSE

**Short Answer [40 marks]**

1. **[5 Marks]** You’re running a play-test for your videogame prototype. Write out a full play-test script and instructions for the test invigilator to follow (YOU are not in the room, assume your invigilator knows NOTHING about the game).
2. **[10]** Critique this steam page using what you learned in-class. [Army Troop](https://store.steampowered.com/app/2215270/Army_Troop/) <https://store.steampowered.com/app/2215270/Army_Troop/> Evaluate its short description, capsule art, screenshots and long main-body description. What’s good, what’s bad? Write **lots** about its trailer.
3. **[10]** Create a marketing campaign for your final game project. Write a timeline describing what marketing activities you’d do. Assume you have money for this campaign. The more detail, the better.
4. **[5]** Write a paragraph on what makes a good **demo**.
5. **[5]** Write a few sentences about **3 different** lessons/aspects for creating a good **tutorial**.
6. **[5]** Describe **2 different** software testing methods (a few sentences each).
7. **[0]** List the other members of your group for the final group project. Imagine your team is being given a bonus of $1000 to be fairly divided among your group based on each individual’s contribution. Allocate this imaginary money as you deem appropriate. Anything written here will remain confidential from the other students.

**Art & Design**

**Multiple Choice [10]**

**[2 Marks]** What does the Pixels Per Unity parameter control?

* 1. The size of the image file
  2. The aspect ratio of the sprite image asset
  3. The base size of a sprite when drawn through a SpriteRenderer
  4. The pixel resolution of the sprite image asset

**[2]** Which of the following best defines a normal map?

* 1. A texture representing the colours of a Material
  2. A texture that overlays shadows onto a material
  3. A texture that gives the appearance of raised or recessed surfaces.
  4. A texture encoding which parts of a 3D object are to be transparent.

**[2]** which of the following best defines a LOD group?

* 1. A group of child gameobjects under a parent
  2. A group of probes for calculating ambient light
  3. A series of meshes of various density
  4. A group of textures of various resolutions

**[2]** What default method does Unity use for animating trees in the wind?

* 1. Animating vertices with a custom shader
  2. Hand made animations
  3. procedural animations
  4. A gameobject called a windzone

**[2]** What is the definition of Camera FOV?

* 1. The range of observable area a camera can see
  2. The distance the camera stops rendering far away objects
  3. Swapping the camera to an orthographic view
  4. The intensity of the camera’s depth of field

**Short Answer [40]**

**[5 Marks]** Describe the difference between a shader and a material, in the context of Unity. What 3 essential texture maps do unity materials need for a visually realistic game?

**[10]** What are the best methods for optimizing a game? Name and detail 3 different but common methods for keeping a game performant, these can be either through code, or common practices within the unity editor.

**[5 Marks]** What are light probes and reflection probes? Also, to allow baked lighting in a scene, what checkbox needs to be ticked for your gameobjects (with a mesh renderer component)?

**[5 Marks]** You have a scene you need to add post processing to, list 5 common post processing effects, any 5 will do:

**[10 Marks]** Briefly describe the function of the profiler tool in Unity. Imagine you are testing a 2D top-down shooter game and as you play the game gets slower and slower until it eventually crashes. How would you use the profiler to diagnose this problem, and what could be a possible cause of this performance issue?

**[5 Marks]** Briefly describe what shadow cascading is and why its important? What is the difference between shadow cascades and overall shadow distance?