



Entrance Exam Master I

Academic Year 2023-2024

Major: Economics

Duration: 1 hour

Exercise 1 (6 points)

The company "Alpha" operates in a purely competitive market specializing in the sale of electronic products. The company's total production cost is given by :

$$C = 200 + Q + 0.02 Q^2$$

with Q the level of production and C the total cost.

- 1. Knowing that the equilibrium price is \$9, and that the company seeks to maximize its profit. What will the profit be?**
- 2. Calculate the producer's surplus at equilibrium?**
- 3. In your opinion, at what minimum price will the company produce a positive quantity?**

Exercise 2 (2 points)

Determine whether the following utility function satisfies the of non-saturation :

$$U(x, y) = x y^2 + x^2 y$$

Exercise 3 (6 points)

Consider a closed economy represented by the following equations:

$$C = 0.5 (Y - T) + 500$$

$$I = 200$$

$$G = 150$$

$$T = 100$$

- 1. Explain these equations. What do they correspond to?**
- 2. Determine the equilibrium income of this economy.**
- 3. At this equilibrium, calculate consumption, savings and aggregate demand.**
- 4. The government decides to stimulate the economy and achieve the full-employment income of 2,000 units through fiscal policy. How much should G vary?**

Exercise 4 (3 points)

Answer true or false, giving reasons

- 1. In the short term, as in the long term, movements in production are the result of both movements in aggregate demand and movements in aggregate supply.**
- 2. In the OG-DG model, an increasing aggregate supply curve implies the existence of a trade-off between inflation and unemployment.**

Exercise 5 (3 points)

Calculate the marginal propensity to consume if the multiplier in the bisector model is $K_t=5$.