PART A

INSTRUCTIONS: 1. THERE ARE TWO (2) QUESTIONS IN THIS PART.
2. ANSWER BOTH QUESTIONS.

Question 1

a. Briefly explain the scope of Managerial Economics. [8 marks]

b. The total cost function (TC) of Perfecta Corporation is given as follows:

\[ TC = 2000 + 90Q - 1.5Q^2 + 0.01Q^3 \]

where:

\[ Q = \text{units of output} \]

i) Determine the output level that minimizes marginal cost (MC). [8 marks]

ii) How does one know that the value of output determine in part (i) minimizes rather than maximizes MC. [4 marks]

[TOTAL: 20 MARKS]

Question 2

a. Why do firms in perfectly competitive markets earn normal profits in the long-run? Explain. [5 marks]

b. The following functions describe monthly market demand and supply relation for product XY in the Sunway area,

\[ Q_D = 200 - 2P \]
\[ Q_S = 120 + 2P \]
Where $Q$ is a quantity of XY and $P$ is the price of XY in $. Assume that the market is perfectly competitive. The total cost function for a representative firm in this industry is

$$ TC = 100 + 4Q - Q^2 + 0.2Q^3 $$

Based on this information:

i) Calculate the market equilibrium price and quantity for product XY.  

[5 marks]

ii) Determine the output level that can maximize profit for the firm.  

[5 marks]

iii) Should the firm shutdown or continue its operation? Explain.  

[5 marks]

[TOTAL: 20 MARKS]
PART B

INSTRUCTIONS:
1. THERE ARE FIVE (5) QUESTIONS IN THIS PART.
2. ANSWER THREE (3) QUESTIONS ONLY.

Question 1

a. Define the law of diminishing returns and explain why this law is applicable only in the short-run.  
   [8 marks]

b. Given the following the short-run production function for Coco Corporation:
   
   \[ Q = 10.5L + 1.5L^2 - 0.0625L^3 \]
   
   Where:
   
   Q = total output produced per day
   L = units of labour employed

   The per-unit price of Coco Corporation output is fixed at $16. If the objective of Coco Corporation is to maximized profits:

   i) How many unit of labour should Coco Corporation employ if the wage rate is $60 per day for each unit of labour?
   [6 marks]

   ii) Assuming Coco Corporation fixed cost is $1000 per day, how much would be its total profit per day.
   [6 marks]

   [TOTAL: 20 MARKS]
Question 2

Esther leather Sdn Bhd., a manufacturer for leather product has derived the following regression function for its Pradara wallet:

\[ Q_K = 2350 - 50.6P_K + 11.5P_C + 0.38Y + 0.02A \]

Where

- \( Q_K \) = quantity demanded for Pradara wallet
- \( P_K \) = price of Pradara wallet = RM60
- \( P_C \) = price of its competitor's = RM55
- \( Y \) = household's income = RM8,000
- \( A \) = advertising expenses = RM50,000

Figures in the parentheses show the standard errors of coefficients.

- Coefficient of determination = 0.956
- Standard error of estimation = 50
- Critical t-value at 95% confidence interval is 1.96

a. Derive the demand curve function and calculate the estimated quantity demanded for Pradara wallet. [5 marks]

b. Does the regression function have strong explanatory power? Explain. [5 marks]

c. Based on 95% confidence interval, identify the independent variables that have significant effect on the demand for Pradara wallet. [5 marks]

d. The marginal cost of Pradara wallet is RM28. Is the price of RM60 considered the profit maximising price of Pradara wallet? Support your answer with calculations. [5 marks]

[TOTAL: 20 MARKS]
Question 3

Given the following production function:

\[ Q = 40K^{1.2}L^{0.3} \]

Where \( Q \) is the quantity produced, \( K \) is units of capital and \( L \) is units of labour. The firm currently employs 20 units of capital at a cost of $100 per unit and 15 units of labour at a cost of $25 per unit.

a. Based on the current inputs used, compute the level of output. [3 marks]

b. Compute the \( MP_L \) and \( MP_K \) based on the current inputs used. [5 marks]

c. Given the current inputs usage, is the firm operating efficiently? [5 marks]

d. If not, what is the efficient combination of \( L \) and \( K \) to produce the output level calculated in part (a). [7 marks]

[TOTAL: 20 MARKS]

Question 4

Justo & Company use third-degree price discrimination in selling its product. The demand equations for the two markets are as follows:

\[
\begin{align*}
\text{Market 1} & \quad P_1 = 2.46 - 0.2Q_1 \\
\text{Market 2} & \quad P_2 = 4.54 - 0.8Q_2 
\end{align*}
\]

The marginal cost is $1.20

a. Determine the profit maximizing price and quantity in each market. [10 marks]
b. If the company practiced a single price policy, what price would the firm charge? [5 marks]

c. Discuss briefly the first-degree and second-degree price discrimination and give an example each in practice. [5 marks]

[TOTAL: 20 MARKS]

Question 5

a. Define the explicit and implicit cost. [4 marks]

b. Manuel, a consultant, working for a large consultant firm and earning $80,000 per year is contemplating giving up his job and setting up his own consultancy firm. His estimates that renting an office would cost $10,000 per year, hiring a legal secretary would cost $25000 per year, and purchasing the required supplies, paying for electricity, telephone and etc would cost another $6000 per year. His estimated that his total revenue for the year would be $100,000 and he is indifferent between keeping his present occupation and opening his own office.

Calculate the consultant’s cost/profit for running his own office for the year:

i) Explicit cost

ii) Implicit cost

iii) Economic cost

iv) Economic profit [12 marks]

c. Should the consultant’s go ahead and start his own practice? Explain briefly. [4 marks]

[TOTAL: 20 MARKS]

QUESTION PAPER ENDS HERE