



# UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 3 Examination in Engineering: March 2021

Module Number: IS3301

Module Name: Basic Economics

[Three Hours]

[Answer all questions, each question carries ten marks]

- Q1. The table shows the demand schedule for personal trainer services and the supply schedule of personal trainer services.

Price (Rupees per hour)	Hours Per Day	
	Quantity Demanded	Quantity Supplied
0	100	0
20	80	0
40	60	20
60	40	40
80	20	60
100	0	80

- a) Draw the demand and supply curves. [1 Mark]
- b) What is the market equilibrium? [2 Marks]
- c) Calculate the consumer surplus, producer surplus and total surplus at the equilibrium. [3 Marks]
- d) If all personal trainers agree to charge Rs. 80 an hour,
- What is the amount of excess supply? [1 Mark]
  - How do consumer surplus and producer surplus change? [2 Marks]
  - What is the deadweight loss created? [1 Mark]

Q3. Len's factory produces carrom boards and hires labors for producing the boards. The table sets out Len's total product schedule.

Labor (Workers per Day)	Total Product
0	0
1	20
2	44
3	60
4	72

a) Construct Len's marginal product and average product schedules.

[3 Marks]

b) Len's carrom board factory pays Rs. 6,000 a day for equipment they hire and Rs. 200 a day to each worker it hires.

i. Construct Len's total variable cost, fixed cost, and total cost schedules.

[3 Marks]

ii. Construct the average fixed cost, average variable cost, and average total cost schedules and the marginal cost schedule.

[4 Marks]

Q4. Your firm has an opportunity to make an investment of Rs. 25,000. It's cost of capital is 12 percent. It expects after-tax cash flows (including the tax shield from depreciation) for the next 5 years to be as follows:

Year	Cash Flows (Rs.)
1	7,000
2	8,000
3	9,000
4	9,000
5	5,000