UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 3 Examination in Engineering: July 2016

Module Number: IS3303   Module Name: Basic Economics

[Three Hours]
[Answer **all questions**, each question carries ten marks]

Q1.

a)   The Table Q1 shows the demand and supply schedules for an initial release of the product "A" by the newly established ABC Company.

Table Q1: Demand and supply schedules

Price (Rs per unit)	Quantity Demanded (1,000s)	Quantity Supplied (1,000s)
220	0	100
200	20	100
180	40	100
160	60	100
140	80	100
120	100	100
100	120	100
80	140	100

i   Sketch a demand and supply diagram to represent the data from the table.

ii   What time frame is represented by the supply curve you have drawn? How do you know?

iii   What is the equilibrium price, quantity demanded, and quantity supplied?

iv   At each price listed in the table, note whether an excess demand or supply exists and its magnitude.

v   Suppose that ABC Company had initially issued 120,000 units of product "A" for the initial release. Sketch a demand and supply diagram to represent the new situation. How would your answers to parts iii and iv change?

[5.0 Marks]

b)   The price of bread in XYZ City was controlled, set at a predetermined price above the market price.

i   Draw a diagram showing the policy and effect of the policy. How does this policy affect for producers or consumers?

ii   What kinds of inefficiencies were likely to have arisen when the controlled

price of bread was above the market price? Briefly explain.

iii During one year period, a poor wheat harvest caused to supply of bread. Draw a diagram showing the effect of its market price.

[3.0 Marks]

c) XYZ City bakers found that the controlled price of bread was below the market price.

i Draw a diagram showing the policy and effect of the price control on the market for bread during this one-year period. How does this policy affect for producers or consumers?

ii What kinds of inefficiencies do you think occurred during this period? Briefly explain.

[2.0 Marks]

Q2.

a) The Table Q2 shows the quantity demanded and quantity supplied schedules for potatoes.

Table Q2: Quantity demanded and quantity supplied schedules

Quantity Demanded (Millions of pounds per year)			Price (Rs. Per pound)	Quantity Supplied (Millions of pounds per year)		
Case 1	Case 2	Case 3	Price	Case A	Case B	Case C
15	10	5		1	2	3
12	8	4	200	2	4	6
9	6	3	300	3	6	9
6	3	2	400	4	8	12
3	2	1	500	5	10	15

You suppose that in normal year demand is represented by Case 2 and Supply is represented by Case B.

i What will be the price of potatoes in a normal year?

ii What will be the equilibrium quantity of potatoes in a normal year?

iii If there is a drought in the potato growing region then what case will be represented by the supply and what case will be represented by the demand?

iv If there is good growing weather in the potato growing region then what case will be represented by the supply and what case will be represented by the demand?

v If it is discovered that potatoes help prevent cancer then what case will be represented by the supply and what case will be represented by the demand?

[5.0 Marks]

b) i   Why is the demand curve downward sloping?

    ii   How does a change in price affect the demand curve and the quantity demanded? How do you show the situation in a diagram?

    iii   How will a change in the price of a related good affect the demand curve? Explain with examples.

    iv   Why is the supply curve typically upward sloping?

    v   How will a change in the price of an input affect the supply curve of a commodity?

[5.0 Marks]

Q3. Saman's Catering provides catered meals, and the catered meals industry is perfectly competitive. Saman's machinery costs Rs. 1,000 per day and is the only fixed input. His variable cost consists of the wages paid to the cooks and the food ingredients. The variable cost per day associated with each level of output is given in the incomplete Table Q3.

Table Q3: The variable cost per day

Quantity of Meals	VC (Rs)	TC (Rs)	MC of meal (Rs)	AVC of meal (Rs)	ATC of meal (Rs)
0	0				
100	2,000				
200	3,000				
300	4,800				
400	7,000				
500	10,000				

a) i   Calculate the total cost, the average variable cost, the average total cost, and the marginal cost for each quantity of output to complete the table.

    ii   What is the break-even price? What is the shut-down price?

[4.0 Marks]

b) In the short run, will Saman earn a profit? In the short run, should he produce or shut down? How would your answer to parts i, ii and iii.

    i   Suppose that the price at which Saman can sell catered meals is Rs. 21 per meal.

    ii   Suppose that the price at which Saman can sell catered meals is Rs. 17 per meal.

    iii   Suppose that the price at which Saman can sell catered meals is Rs. 13 per meal.

[6.0 Marks]

Q4.

a) Can good news for farming be bad news for farmers? What happens to wheat farmers and the market for wheat when university agronomists discover a new wheat hybrid that is more productive than existing varieties?

    i   Sketch a supply-and-demand diagram to see how the market equilibrium changes.

    ii   Use your own quantities of wheat and prices of wheat in the above diagram and calculate the revenue of the farmers.

    iii   Use mid-point formula to calculate the price elasticity of demand for wheat to decide that why this news be bad for farmers?

[6.0 Marks]

b) A consumer is indifferent between 12X & 8Y and 8X & 16Y.

    i   What do you mean by Marginal Rate of Substitution?

    ii   What is the marginal rate of substitution between these points?

    iii   Over this range, how many units of Y the consumer is just willing to give up to obtain another X?

    iv   Over this range, how many units of X the consumer is just willing to give up to obtain another Y?

[4.0 Marks]

Q5.

a) There are different ways of calculating GDP. The Table Q5 gives the information from different factors to calculate the GDP.

Table Q5: Different factors to calculate the GDP

Factors	Rs.
Transfer Payments	50
Interest Income (i)	150
Depreciation	30
Wages (W)	60
Gross Private Investment (I)	120
Business Profits (PR)	200
Indirect Business Taxes	70
Rental Income (R)	80
Net Exports (X-M)	20
Net Foreign Factor Income	15
Government Purchases (G)	150
Household Consumption (C)	300

i What do you mean by Gross Domestic Product (GDP)?

ii What is the equation for expenditure approach to calculate the GDP?

iii Based on the data in the above table calculate the GDP using the expenditures approach.

iv What is the equation for income approach to calculate the National Income (NI) and GDP?

v Based on the data in the above table calculate the NI and GDP using the income approach.

[5.0 Marks]

b) Unemployment is a key measure of economic health. And the following people are included into the working age population.

A. A full-time university student.

B. A recent university graduate looking for a first job.

C. A retired school teacher is collecting her pension.

D. A homemaker contributing 15 hours per week as a volunteer worker in a hospital.

i Briefly explain the above persons are included into the employed category, unemployed category or out of the labour force.

ii Suppose the population is 300 million. There are 140 million employed, and 8.2 million unemployed. Suppose that 1 million of the 8.2 million unemployed become so discouraged that they drop out of the labor force.
What is the formula to calculate the unemployment rate? And calculate the unemployment rate for the above situation.

iii Briefly describe the nature of unemployment in Sri Lanka.

[5.0 Marks]

Q6.

a) The Table Q6. a) shows the details for two commodities in the market.

Table Q6. a) : Details for two commodities in the market

Commodity	Market Basket Quantity	2006 price per unit (Rs.)	2015 price per unit (Rs.)
Eggs	100	15	20
Oranges	50	20	25

i Calculate the Price Index for two-commodity market basket. (Base year = 2006)

ii How do you elaborate your answer?

iii Why Demand-pull inflation is occurred?

iv   Draw a demand supply diagram with figures to show Demand-pull inflation.

v   Why Cost-push inflation is occurred?

vi   Draw a demand supply diagram with figures to show Cost-push inflation.

[6.0 Marks]

b)   The Table Q6. b) shows labor productivities, i.e., outputs per worker. And numbers report the quantity of output per unit of labor that each country can produce in the two goods, X and Y.

Table Q6. b) Labor productivities

Good	Country A	Country B
X	16	12
Y	8	4

Which country has the following advantages? Elaborate your answer with calculation.

i   Absolute advantage in good X.

ii   Absolute advantage in good Y.

iii   Comparative advantage in good X.

iv   Comparative advantage in good Y.

[4.0 Marks]