ECONOMICS

Date: 21 /06 /2022

Period: 8h30-11h30

END OF TERM III EXAMINATIONS

GRADE / LEVEL:	**S4**
OPTION / COMBINATIONS : TRADES:	- **HISTORY –ECONOMICS –GEOGRAPHY(HEG)** - **HISTORY –ECONOMICS- LITERATURE(HEL)** - **LITERATURE-ECONOMICS-GEOGRAPHY(LEG)** - **MATHEMATICS- ECONOMICS-GEOGRAPHY(MEG)** - **MATHEMATICS –COMPUTER SCIENCE-ECONOMICS(MCE)**
DURATION:	**3HOURS**
MARKS:	**…… /100**

INSTRUCTIONS

1) Write your names and your number on your answer booklet.
2) Do not open this question paper until yu are told to do so.
3) This paper consist of **two** sections: section **A** and **B**.

   SECRON A: Attempt all questions **(55marks)**
   SECTION B: Attempt any Three questions **(45marks)**
4) Give explanations and relavant examples where necessary.
5) Use only a blue or a black pen.

SECTION A: ALL QUESTIONS ARE COMPULSORY (55marks)

1. State the fundamental principles of economics. **(3marks)**

2. a) Define the term demand. **(2marks)**

b) State the law of demand. **(2marks)**

3. a) What do you mean by price mechanism. **(2marks)**

b) Answer by True(T) if the statement is correct or by False(F) if the statement is wrong.

i) Price mechanism is only possible in a planned economy. **(1mark)**

ii) Under-price mechanism, prices are determined by the forces of demand and supply. **(1mark)**

iii) Price ceiling is meant to protect consumers. **(1mark)**

4. a) Define the term production cost. **(1mark)**

b) State the two types of cost involved in production. **(2marks)**

c) Complete with the appropriate missing words.

i)…………………… refers to total costs of production per output unit. **(1marks)**

ii) …………………… act as a reward to an entrepreneur for undertaking insurable risks and uncertainties in business. **(1mark)**

iii) Under Monopoly a firm maximizes its profits when marginal cost (MC)=………………… **(1mark)**

5. Identify the factors that may cause the decline in supply of a commodity while its price is constant. **(6marks)**

6. a) Match items in column A with those in column B. **(4marks)**

A	**B**
1) Land	A) Profits
2) Labour	B
3) Capital	C) Wages
4) Entrepreneur	D) Rent

7) Account for the survival of small-scale firms alongside large scale firms **(7marks)**

8. If a firm faces a demand function given by P=120Q-Q. **Determine** the marginal revenue function. **(4marks)**

9. The following are demand and supply functions.

Given Qs =90+6p and Qd=8p+72. Find the equilibrium price and quantity.

(4marks)

10.) Analyze the information in the table below and answer the questions that follow:

Scale of production	Labour units	Land units	Total returns	Marginal returns
1	1	2	4	4
2	2	4	10	6
3	3	6	18	8
4	4	8	28	10
5	5	10	38	10
6	6	12	48	10
7	7	14	56	8
8	8	16	62	6

i) Represent the above information on a graph. **(3marks)**

ii) On the graph drawn in i) above, indicate the areas of increasing returns, constant returns and decreasing returns to scale. **(3marks)**

11) Give any 6 reasons why are public goods always provided by the

state? **(4marks)**

SECTION B: ATTEMPT ONLY ANY THREE QUESTIONS. (45marks)

12 a) Analyze the effect of scarcity of fuel on:

i) The pump price of fuel. **(2marks)**

ii) The price of commodities in the markets countrywide. **(2marks)**

iii) The amount of goods and services that people can be able to purchase from markets. **(2marks)**

b) Explain the factors that determine quantity demanded of a given commodity in a market. **(9marks)**

b) Explain the factors that determine quantity demanded of a given commodity in a market. **(9marks)**

13. Evaluate the factors that determine price elasticity of supply. **(15marks)**

14. a) Explain the different time frames (planning periods) that a firm can operate in. **(5marks)**

b) How would you justify the applicability of the law of diminishing returns mostly in Agriculture sector? **(10marks)**

15. Study the information in the table below and answer questions which follow:

Units consumed	Total utility	Marginal utility
1	20	-
2	25	-
3	28	-
4	28	-
5	26	-
6	22	-

Required:

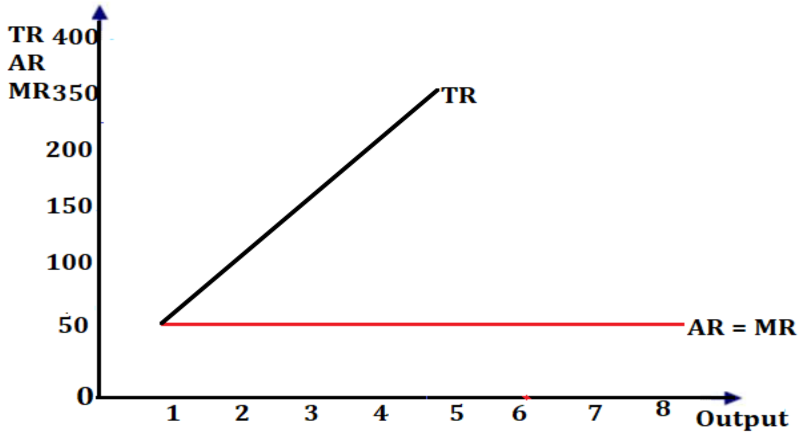
a) Complete the marginal utility column. **(5marks)**

b) Why is total utility declining after the 4th unit? **(2marks)**

c i) Illustrate the above information on graphs. **(6marks)**

ii) Make a brief comment on the above illustration **(2marks)**

16. a) Analyze the curve below and describe the market condition under which such a firm operates. **(3marks)**



b) In its operation, firm Z realized that its Average Costs (AC) were greater than its Average Revenue (AR). However, it still insisted and kept in production line. Justify Firm Z's act of staying in business despite the condition in which its operating. **(12marks)**

END

ECONOMICS END TERM THREE EXAMINATION S4

MARKING GUIDE

2.a) Demand is the desire backed by the ability and willingness of a consumer to buy a commodity in a particular market at a given price in a given period of time **(2marks)**

b**)** The law of demand state that, "Ceteris paribus, the higher the price of a commodity, the lower the quantity demanded and the lower the price of commodity, the higher the quantity demanded".
(2marks

3. a) **Price mechanism** is a system in a free enterprise economy in which resources allocation and prices are determined by forces of demand and supply with little or no government interference. **(2marks)**

b) i) False
(1mark)

ii) True
(**1mark)**

iii) True
(**1mark)**

4. a) Costs refer to the expenses incurred in the production of goods and services **(1mark)**

b) The two types of costs involved in production include: (**2marks)**

- Implicit costs of production

- Explicit costs of production.

C i) Average total cost. (**1marks)**

ii) Profits **(1marks)**

iii) MC= MR (marginal revenue. **(1marks)**

5 a) The following are factors that may cause a decline in supply of a commodity while its price is constant. **(1mark x6=6marks)**

- Poor climate e.g. (Drought or heavy rains)

- poor technology used

- increase in input prices

- Decrease in number of producers

- increase in prices of related goods

- Profit maximization as the major goal of the firm.

- Short gestation period

- Poor infrastructure.

- Poor skills employed by labour.

- Reduced market.

6. **Matched items (4marks)**

A	**B**
1)	C)
2)	C)
3)	B)
4)	A)

7) A small scale firm is an enterprise marked by a limited number of employees and a limited flow of finances and materials.
(1mark) Analyzing

The survival of small-scale firms alongside large scale firms is due to the following reasons.

- Small firms do not need to advertise extensively as large firms and hence incur less cost.

- Small firms are easy to manage with small management staff.

- Small firms do not face the problems of internal diseconomies of scale.

- Sometimes small firms are located far from the large firms and hence they monopolize local markets

- Some small firms use the bi-products of large firms e.g. sweets use by-products of the sugar industry

- Owners of small firms can easily develop personal contacts with customers. Later they can start giving credit facilities.

- Small firms may sell to customers the appropriate small quantities where large firms tend to sell in bulk (wholesale).

- Where the market size is small, it necessitates establishment of a small firm.

- Some activities do not require large firms e.g. shoe shinning, hair salons.

Any 6 points explained each 1 mark(6marks)

8. P=120Q-Q

TR = P × Q

TR = (120Q- Q) Q

TR = $120Q^2$-Q^2

$MR_{fn} = \frac{dTR}{dQ}$

MR_{fn} = 240Q -2Q **(4marks)**

9. Qs =90+6p and Qd=8p+72

At equilibrium Qs =Qd

Thus, 90+6p = 8p+72

90-72 = 8p – 6p

18 = 2p

P=9

Thus equilibrium price = 9 **(2marks)**

Substitute 9 for P in any of the equations

Qe = 90 + 6p

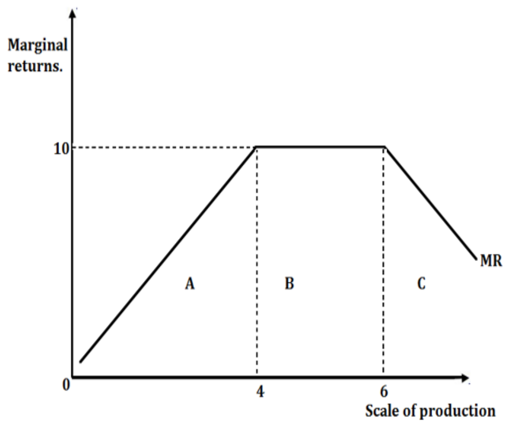
Qe = 90 + 6(9)

Qe = 90 + 54

Qe = 144

Therefore, equilibrium quantity = 144.
(2marks)

10. a)



(3marks)

b) A= Increasing return to scale

B = Constant returns to scale

C = Decreasing returns to scale
(3marks)

11) Public goods are always provided by the state because;

- They are provided in totality and therefore benefits everyone;

- There is no competitive consumption;

- The supplier cannot exclude some people to enjoy it.

- They are expensive to be provided by individuals.

- Some are risky undertakings not to be just left in hands of the public e.g. security.

- The government must control such undertakings to avoid to consumer exploitation by the private sector.

- Some public services like defense are very sensitive and if they are provided by the private sector, they may be misused.
(1markx6=6marks)

12 a) The following are the effects of scarcity of fuel on:

i) The pump price of fuel will increase due to the shortage of fuel. **(2marks)**

ii) The price of commodities in the markets countrywide will increase because of increase in transport costs due to the increase in the price of fuel. **(2marks)**

iii) The amount of goods and services that people can be able to purchase in markets will reduce because as transport costs increase even the sellers increase their prices. **(2marks)**

b) Quantity demanded of a commodity refers to the amount of a commodity buyers are willing and able to purchase in the market at various prices at a period of time. **(1mark)**

The factors that determine quantity demanded of a given commodity in a market include the following;

- **Price of the commodity**: Price changes in the market influence the amount of a commodity that buyers can purchase. When the price of the commodity increases, buyers' ability to purchase reduces. This in turn reduces the quantity demanded. When its price reduces, the quantity demanded increases. This is because the ability of the buyer increases.

- **Tastes and preferences**: Changes in fashion, education, religion, habit and general lifestyle affects the consumption patterns of the population. This in turn influences demand for a particular

commodity. For instance, if a large proportion of the population converts to Islam, demand for pork reduces.

- **Price of other commodities**: Goods or commodities that serve the same purpose are termed as substitutes. For instance, Close-up and Colgate are substitutes. Increase in the price of one of the substitutes (such as Colgate in the above example) will lead to increase in quantity demanded of other substitute goods (such as Close-up).

Similarly, decrease in the price of one of the substitutes will lead to increase in the quantity demanded for that good and decrease in demand for other substitute goods.

Goods or commodities that are used together at the same time like a car and fuel are called **complimentary goods**. Increase in the prices of complementary goods reduces the quantity demanded of the other good and vice versa. There are commodities however such as beans and electric tubes that are not related at all in consumption. Increase in the price of one such commodity does not affect quantity demanded of other unrelated commodities.

- **Consumer's income**: increase in the income of the consumer increases the quantity of goods demanded by the consumer and vice versa. This applies to normal goods. In cases where increase in the income of the consumer reduces quantity of goods demanded and vice versa, such goods are called inferior goods. If increase (or decrease) in income of the consumer does not largely affect quantity of goods demanded, such goods are called necessities.

- **Season**: Certain goods are demanded more during certain weather conditions. For instance, demand for gumboots and raincoats increases during the rainy season. Demand for examination success cards and Christmas cards go with their respective seasons too.

-**Tastes and preferences** Changes in fashion, education, religion, habit and general lifestyle affects the consumption patterns of the population. This in turn influences demand for a particular commodity. For instance, if a large proportion of the population converts to Islam, demand for pork reduces

-**Population size** This affects aggregate demand by increasing consumption. As the population of the country increases, total consumption is also affected. Demand in an area increases if that area receives immigrants. Similarly, if people move out of an area (migrate) demand of goods for that area will go down.

- **Past levels of income** The higher the past level of income, the higher the demand and vice versa. This is because the consumer will be used to high spending.

-**Future price expectations** When prices are expected to increase in the future, quantity demanded increases in the current period. This is because buyers tend to make more purchases and stock for fear of paying higher prices in the days to come. This however depends on the nature of the commodity in question. Similarly, if there is an anticipation of decrease in prices of commodities in future, then the current demand for such commodities will reduce.

- **Government Policy** The government influences quantity demanded of a commodity through taxation, offering subsidies and price legislation. Taxes, both direct and indirect reduces quantity demanded of a commodity. Direct taxes reduce consumers' disposable incomes while indirect taxes increase the costs of production and prices of goods and services. Subsidization of consumers by the government increases quantity demanded of a commodity by making the commodities cheap. Subsidization of producers reduces their costs of production, which keeps producers' prices low. Minimum price legislation reduces quantity demanded because the price is fixed above the equilibrium price. Maximum price legislation increases quantity demanded because the price is fixed below the equilibrium price.

- Credit availability

- Amount of advertising

- Social cultural and political factors

- Education

- Government policy i.e. taxation or subsidization.

- Price expectation.

- Seasonal factors

- Age structure

(8marks)

13. Price elasticity of supply refers to measure of degree of responsiveness of quantity supplied of a commodity to changes in the commodity's own price. Price elasticity of supply is determined by the following factors.
(1mark)

- Price of factors of production: If price of factors of production are low PES is high (elastic) and vice versa.

-Nature of the commodity: Durable commodities have elastic supply because they can be stored for a long period of time. While perishable have inelastic supply because they cannot be stored for long.

- Gestation period: long gestation period makes supply to be inelastic because suppliers cannot increase supply in the short run to respond to price changes while short gestation a small increase in price causes a quick response to quantity supplied hence elastic.

- Time: In the long run supply is elastic than in the short.

- Method of production: With efficient and modern technology a small change (increase) in price enables the producer to significantly increase the quantity supplied thus elastic. But when inefficient technology is used elasticity of supply is inelastic.

- **Government policy:** if there is free trade elasticity of supply is elastic because when the price increases more output can easily be imported and if there is restrictions supply is inelastic because it's hard to import more commodities.

- **Ease of entry of new firms in the market**. If there are restrictions in the entry of new firms in production, supply will be inelastic and with free entry of new firms the supply will be elastic because output can easily be increased.

- Price expectation: if price change is expected to be permanent elasticity of supply would be inelastic and if temporally, elastic would be elastic.

- Factor mobility: if factors of production are mobile, supply tends to be elastic because output can easily be increased with small increase in price while immobility of factors of production the supply will be inelastic.

- **Complementarity of goods/ joint supply.** The price of hides may rise but the supply increases more than proportionately if the price of meat has increased.

- Storage facilities and existing stock: If there are huge quantities of stock supply is very elastic. If the product is perishable and there are no existing stocks, elasticity of supply tends to be low.

- Complex production processes: when production process is complex, supply tends to be inelastic while a simple and straight forward production process reduces production time and make supply elastic.

Any 7 points well examined each 2marks= (14marks)

14. a) Planning periods (time frames) are reference periods by any production unit when making production decisions. Firms operate under different time frames that include the following.
(1mark)

i) **Very short-run** period is a very short period during which output cannot increase through the production process. Firms can only bring to the market only what is in stores in such a small period.
(1mark)

ii) Short run period is a short period within which firms can only vary variable factors of production to increase output. Some factors remain fixed and therefore the law of diminishing return is likely to be experienced after a certain level of output. **(1mark)**

iii) Long run is a period that is long enough for a firm to expand output by varying all factors of production. If there is over expansion, the firm experiences diseconomies of scale. **(1mark)**

iv) **Very long run** is a very long period of time when the firm can expand in size and also change technology to produce new or high quality products. The very long time enables the firm to carry out research and developments.
(1mark)

b) The law of diminishing returns states that given a short run situation with 2 factors of production, one variable and factor "As more and more units of a variable input are applied to the fixed factor in a given state of technology, the marginal product of the variable factor will eventually diminish.".
(2marks)

The law of diminishing returns has a massive application, but it specially applies in agriculture sector. The most important factors responsible for the applicability of the law in agriculture sector include the following:

- Limited size of Land: Production is pursued to be increased by employing more and more units of variable factors. This will result in diminishing returns.

- Less Use of Machinery: In the agricultural sector, there is limited use of machinery as compared to industry. The reason is that in the agricultural sector most of the work is done by hands. This also results in low productivity. Thus, agriculture remains deprived of several external and internal economies of scale. Therefore, the law of diminishing returns applies in agricultural sector.

- Influence of natural factors like rainfall, climate, floods etc. Even, in case man makes all best efforts but nature is not in favour, the law of diminishing returns is surely to apply.

- Agriculture is a seasonal occupation: The people are not busy on land throughout the year. They remain busy only during the period of ploughing and harvesting season. For the remaining period, both farmers and land remain idle which reduce the production per worker. Thus, the law of diminishing returns quickly applies to agriculture sector.

- Difference in the Fertility of Land: All pieces of land are not equally fertile. When demand for land increases even less fertile land are also brought under cultivation. It means fewer marginal returns and high cost of production.

- Ineffective Supervision: Agricultural operations are spread over the vast areas. Therefore, effective supervision becomes most risky and difficult. The result is the law of diminishing returns.

- Less Chances of Division of Labour: In agricultural sector, there are very less chances of division of labour. Therefore, production on large scale is ruled out. It also results into the operation of the law of diminishing returns.

Any 4points each 2 marks
(8marks)

15. a) MU = $\frac{\Delta TU}{\Delta Q}$

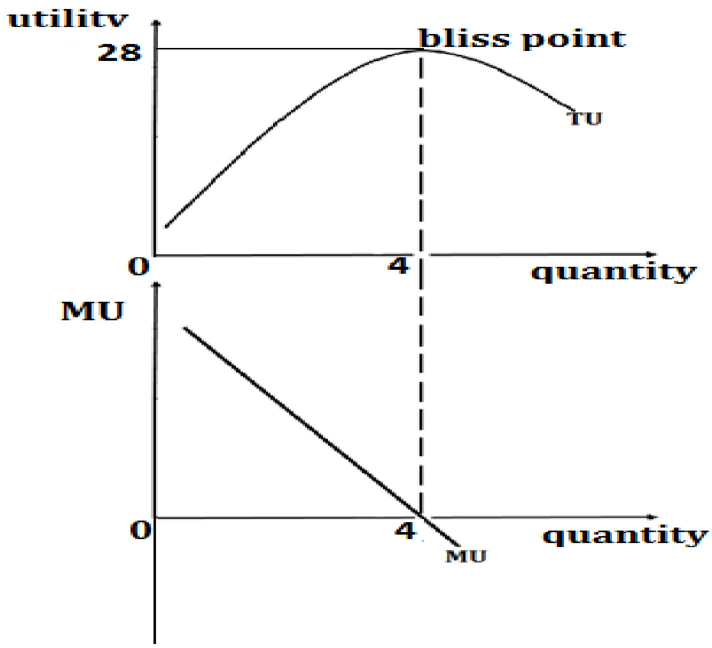
= $\frac{TU2-TU1}{Q2-Q1}$

Units consumed	Total utility	Marginal utility
1	20	-
2	25	5
3	28	3
4	28	0
5	26	-2
6	22	-4

(5marks)

b) The TU is increasing but at a decreasing rate. After the 4th unit, TU declines because marginal utility becomes negative due to disutility or negative utility which sets in. for example one can start vomiting after the 4th unit, a situation that reduces TU he or she had gained. **(2marks)**

c i) Illustration of TU and MU curves using the above information



(6marks)

ii) MU, from the 1st unit isn't known because the TU before the 1st unit isn't indicated. After the first unit TU is increasing but at a decreasing rate. After the 4th unit, TU declines because MU becomes negative due to disutility or negative satisfaction (utility) which sets in. For example, one can start vomiting after the 4th unit, a situation that reduces TU he/she had gained. **(2marks)**

16.a) From the curve provided, it can be concluded that the firm operates in a perfectly competitive market situation. This is because in such markets, the firm's AR = MR implying that as the firm sells more and more at the given price, its total revenue will increase but the rate of increase in the total revenue will be constant, making AR = MR. **(3marks)**

b) Firm Z is said to be making losses since its AC>AR. It is thus an inefficient firm since it operates at high cost of production compared to the revenues it is getting.

Interpreting the question = (1mark)

This firm that may not be in position to cover its running costs however, its insistence in production line may be justified in the following ways:

- If Firm Z is to provide employment opportunity for the people other than profit maximization. In this case, as long as the desirable labour force is employed, it does not need to close down.

- If the main aim is sales maximization other than profit maximization, in this case firm Z continues producing provided the sales are higher.

- In case firm Z is government owned and its **goal is the socio-economic welfare of the population,** this makes firm Z to continue operating even when it AC> AR

- When Firm **Z is receiving subsidies** from government in which case, even if they incur losses, they may continue operating with their expenditure being met by the government

- **When Firm Z is using profits earned from other sources to operate.** In this case even though it is incurring losses it continues to operate

- **When firm Z is inefficient due to poor management and thus it hopes to change management.** In this case it may continue operating with the hope to change in future through restructuring and on job training.

- **Firm Z may continue operating with the hope of securing a long term development loan to cover its AC.**

- When Firm Z has the hope of **changing technology in future** so as to improve on quality of output thereby minimizing costs.

- Firm Z may **have a fear of losing its popularity /name**. This enables it to continue operating even when making losses in order to maintain its reputation.

- Firm Z may not be willing to lose its customers /clients it has already captured, so it might stay to maintain its loyal customers.

- If Firm Z has accumulated a lot of profits in the previous trading periods**, it may keep operating as long as the accumulated profits are still in the stock and can help to run the enterprise.**

- If Firm Z fears to lose its fixed assets it had acquired expensively; it makes it rather hard for it to close down its operations even if it is incurring high costs.

Any 10 points each 1 mark = (10marks)

ECONOMICS
Date: 21 /06 /2022
Period: 8h30-11h30

END OF TERM III EXAMINATIONS 2021-2022

GRADE / LEVEL: **S4**

OPTION / COMBINATIONS : TRADES:

- **HISTORY –ECONOMICS –GEOGRAPHY(HEG)**
- **HISTORY –ECONOMICS- LITERATURE(HEL)**
- **LITERATURE-ECONOMICS-GEOGRAPHY(LEG)**
- **MATHEMATICS- ECONOMICS-GEOGRAPHY(MEG)**
- **MATHEMATICS –COMPUTER SCIENCE-ECONOMICS (MCE)**

DURATION:3HOURS

MARKS: **…… /100**

INSTRUCTIONS

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SECTION B: Attempt any Three questions **(45marks)**

- Give explanations and relavant examples where necessary.
- Use only a blue or a black pen.

SECTION A: ALL QUESTIONS ARE COMPULSORY (55marks)

1. State the fundamental principles of economics. **(3marks)**

2. a) Define the term demand. **(2marks)**

b) State the law of demand. **(2marks)**

3. a) What do you mean by price mechanism? **(2marks)**

b) Answer by True(T) if the statement is correct or by False(F) if the statement is wrong.

i) Price mechanism is only possible in a planned economy. **(1mark)**

ii) Under-price mechanism, prices are determined by the forces of demand and supply. **(1mark)**

iii) Price ceiling is meant to protect consumers. **(1mark)**

4. a) Define the term production cost. **(1mark)**

b) State the two types of cost involved in production. **(2marks)**

c) Complete with the appropriate missing words.

i)…………………… refers to total costs of production per output unit. **(1marks)**

ii) ……………………. act as a reward to an entrepreneur for undertaking insurable risks and uncertainties in business. **(1mark)**

iii) Under Monopoly a firm maximizes its profits when marginal cost(MC)=……………….. **(1mark)**

5. Identify the factors that may cause the decline in supply of a commodity while its price is constant. **(6marks)**

6. a) Match items in column A with those in column B. **(4marks)**

A	**B**
1) Land	A) Profits
2) Labour	B
3) Capital	C) Wages
4) Entrepreneur	D) Rent

7) Account for the survival of small-scale firms alongside large scale firms

(7marks)

8. If a firm faces a demand function given by P=120Q-Q. Determine the marginal revenue function. **(4marks)**

9. The following are demand and supply functions.

Given Qs =90+6p and Qd=8p+72. Find the equilibrium price and quantity.

(4marks)

10. Identify any three external economies of scale a firm can acquire. **(6marks)**

11) Give any 6 reasons why are public goods always provided by the state? **(4marks)**

SECTION B: ATTEMPT ONLY ANY THREE QUESTIONS. (45marks)

12 a) Analyze the effect of scarcity of fuel on:

i) The pump price of fuel. **(2marks)**

ii) The price of commodities in the markets countrywide. **(2marks)**

iii) The amount of goods and services that people can be able to purchase from markets. **(2marks)**

b) Explain the factors that determine quantity demanded of a given commodity in a market. **(9marks)**

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13. Evaluate the factors that determine price elasticity of supply. **(15marks)**

14. a) Explain the different time frames (planning periods) that a firm can operate in. **(5marks)**

b) How would you justify the applicability of the law of diminishing returns mostly in Agriculture sector? **(10marks)**

15. Study the information in the table below and answer questions which follow:

Units consumed	Total utility	Marginal utility
1	20	-
2	25	-
3	28	-
4	28	-
5	26	-
6	22	-

Required:

a) Complete the marginal utility column. **(10marks)**

b) Why is total utility declining after the 4th unit? **(5marks)**

16. Account for the causes of low capital accumulation in your country? **(15marks)**

END

ECONOMICS END TERM THREE EXAMINATION S4 ANSWERS

2.a) Demand is the desire backed by the ability and willingness of a consumer to buy a commodity in a particular market at a given price in a given period of time **(2marks)**

b**)** The law of demand state that, "Ceteris paribus, the higher the price of a commodity, the lower the quantity demanded and the lower the price of commodity, the higher the quantity demanded". **(2marks**

3. a) **Price mechanism** is a system in a free enterprise economy in which resources allocation and prices are determined by forces of demand and supply with little or no government interference. **(2marks)**

b) i) False **(1mark)**

ii) True **(1mark)**

iii) True **(1mark)**

4. a) Costs refer to the expenses incurred in the production of goods and services **(1mark)**

b) The two types of costs involved in production include: **(2marks)**

- Implicit costs of production
- Explicit costs of production.

C i) Average total cost. **(1marks)**

ii) Profits **(1marks)**

iii) MC= MR (marginal revenue. **(1marks)**

5 a) The following are factors that may cause a decline in supply of a commodity while its price is constant. **(1mark x6=6marks)**

- Poor climate e.g. (Drought or heavy rains)
- poor technology used
- increase in input prices
- Decrease in number of producers
- increase in prices of related goods
- Profit maximization as the major goal of the firm.
- Short gestation period
- Poor infrastructure.
- Poor skills employed by labour.
- Reduced market.

6. **Matched items (4marks)**

A	**B**
1)	C)
2)	C)
3)	B)
4)	A)

7) A small scale firm is an enterprise marked by a limited number of employees and a limited flow of finances and materials. **(1mark) Analyzing**

The survival of small-scale firms alongside large scale firms is due to the following reasons.

- Small firms do not need to advertise extensively as large firms and hence incur less cost.

- Small firms are easy to manage with small management staff.

- Small firms do not face the problems of internal diseconomies of scale.

- Sometimes small firms are located far from the large firms and hence they monopolize local markets

- Some small firms use the bi-products of large firms e.g. sweets use by-products of the sugar industry

- Owners of small firms can easily develop personal contacts with customers. Later they can start giving credit facilities.

- Small firms may sell to customers the appropriate small quantities where large firms tend to sell in bulk (wholesale).

- Where the market size is small, it necessitates establishment of a small firm.

- Some activities do not require large firms e.g. shoe shinning, hair salons.

Any 6 points explained each 1 mark(6marks)

8. P=120Q-Q

TR = P × Q

TR = (120Q- Q) Q

TR = $120Q^2 - Q^2$

MR $_{fn} = \frac{dTR}{dQ}$

MR $_{fn}$ = 240Q -2Q **(4marks)**

9. $Q_s = 90 + 6p$ and $Q_d = 8p + 72$

At equilibrium $Q_s = Q_d$

Thus, $90 + 6p = 8p + 72$

$90 - 72 = 8p - 6p$

$18 = 2p$

$P = 9$

Thus equilibrium price = 9 **(2marks)**

Substitute 9 for P in any of the equations

$Q_e = 90 + 6p$

$Q_e = 90 + 6(9)$

$Q_e = 90 + 54$

$Q_e = 144$

Therefore, equilibrium quantity = 144. **(2marks)**

10: External economies of scale any firm can acquire: **(2marks x3=6marks)**

- Sharing training facilities
- Sharing the same the same transport facilities and other infrastructure
- Carry out technical improvement together with others.

11) Public goods are always provided by the state because;

- They are provided in totality and therefore benefits everyone;

- There is no competitive consumption;

- The supplier cannot exclude some people to enjoy it.

- They are expensive to be provided by individuals.

- Some are risky undertakings not to be just left in hands of the public e.g. security.

- The government must control such undertakings to avoid to consumer exploitation by the private sector.

- Some public services like defense are very sensitive and if they are provided by the private sector, they may be misused. **(1markx6=6marks)**

12 a) The following are the effects of scarcity of fuel on:

i) The pump price of fuel will increase due to the shortage of fuel. **(2marks)**

ii) The price of commodities in the markets countrywide will increase because of increase in transport costs due to the increase in the price of fuel. **(2marks)**

iii) The amount of goods and services that people can be able to purchase in markets will reduce because as transport costs increase even the sellers increase their prices. **(2marks)**

b) Quantity demanded of a commodity refers to the amount of a commodity buyers are willing and able to purchase in the market at various prices at a period of time. **(1mark)**

The factors that determine quantity demanded of a given commodity in a market include the following;

- **Price of the commodity**: Price changes in the market influence the amount of a commodity that buyers can purchase. When the price of the commodity increases, buyers' ability to purchase reduces. This in turn reduces the quantity demanded. When its price reduces, the quantity demanded increases. This is because the ability of the buyer increases.

- **Tastes and preferences**: Changes in fashion, education, religion, habit and general lifestyle affects the consumption patterns of the population. This in turn influences demand for a particular

commodity. For instance, if a large proportion of the population converts to Islam, demand for pork reduces.

- **Price of other commodities**: Goods or commodities that serve the same purpose are termed as substitutes. For instance, Close-up and Colgate are substitutes. Increase in the price of one of the substitutes (such as Colgate in the above example) will lead to increase in quantity demanded of other substitute goods (such as Close-up).

Similarly, decrease in the price of one of the substitutes will lead to increase in the quantity demanded for that good and decrease in demand for other substitute goods.

Goods or commodities that are used together at the same time like a car and fuel are called **complimentary goods**. Increase in the prices of complementary goods reduces the quantity demanded of the other good and vice versa. There are commodities however such as beans and electric tubes that are not related at all in consumption. Increase in the price of one such commodity does not affect quantity demanded of other unrelated commodities.

- **Consumer's income**: increase in the income of the consumer increases the quantity of goods demanded by the consumer and vice versa. This applies to normal goods. In cases where increase in the income of the consumer reduces quantity of goods demanded and vice versa, such goods are called inferior goods. If increase (or decrease) in income of the consumer does not largely affect quantity of goods demanded, such goods are called necessities.

- **Season**: Certain goods are demanded more during certain weather conditions. For instance, demand for gumboots and raincoats increases during the rainy season. Demand for examination success cards and Christmas cards go with their respective seasons too.

-**Tastes and preferences** Changes in fashion, education, religion, habit and general lifestyle affects the consumption patterns of the population. This in turn influences demand for a particular commodity. For instance, if a large proportion of the population converts to Islam, demand for pork reduces

-**Population size** This affects aggregate demand by increasing consumption. As the population of the country increases, total consumption is also affected. Demand in an area increases if that area receives immigrants. Similarly, if people move out of an area (migrate) demand of goods for that area will go down.

- **Past levels of income** The higher the past level of income, the higher the demand and vice versa. This is because the consumer will be used to high spending.

-**Future price expectations** When prices are expected to increase in the future, quantity demanded increases in the current period. This is because buyers tend to make more purchases and stock for fear of paying higher prices in the days to come. This however depends on the nature of the commodity in question. Similarly, if there is an anticipation of decrease in prices of commodities in future, then the current demand for such commodities will reduce.

- **Government Policy** The government influences quantity demanded of a commodity through taxation, offering subsidies and price legislation. Taxes, both direct and indirect reduces quantity demanded of a commodity. Direct taxes reduce consumers' disposable incomes while indirect taxes increase the costs of production and prices of goods and services. Subsidization of consumers by the government increases quantity demanded of a commodity by making the commodities cheap. Subsidization of producers reduces their costs of production, which keeps producers' prices low. Minimum price legislation reduces quantity demanded because the price is fixed above the equilibrium price. Maximum price legislation increases quantity demanded because the price is fixed below the equilibrium price.

- Credit availability

- Amount of advertising

- Social cultural and political factors

- Education

- Government policy i.e. taxation or subsidization.

- Price expectation.

- Seasonal factors

- Age structure

(8marks)

13. Price elasticity of supply refers to measure of degree of responsiveness of quantity supplied of a commodity to changes in the commodity's own price. Price elasticity of supply is determined by the following factors. **(1mark)**

- Price of factors of production: If price of factors of production are low PES is high (elastic) and vice versa.

-Nature of the commodity: Durable commodities have elastic supply because they can be stored for a long period of time. While perishable have inelastic supply because they cannot be stored for long.

- Gestation period: long gestation period makes supply to be inelastic because suppliers cannot increase supply in the short run to respond to price changes while short gestation a small increase in price causes a quick response to quantity supplied hence elastic.

- Time: In the long run supply is elastic than in the short.

- Method of production: With efficient and modern technology a small change (increase) in price enables the producer to significantly increase the quantity supplied thus elastic. But when inefficient technology is used elasticity of supply is inelastic.

- **Government policy:** if there is free trade elasticity of supply is elastic because when the price increases more output can easily be imported and if there is restrictions supply is inelastic because it's hard to import more commodities.

- **Ease of entry of new firms in the market**. If there are restrictions in the entry of new firms in production, supply will be inelastic and with free entry of new firms the supply will be elastic because output can easily be increased.

- Price expectation: if price change is expected to be permanent elasticity of supply would be inelastic and if temporally, elastic would be elastic.

- Factor mobility: if factors of production are mobile, supply tends to be elastic because output can easily be increased with small increase in price while immobility of factors of production the supply will be inelastic.

- **Complementarity of goods/ joint supply.** The price of hides may rise but the supply increases more than proportionately if the price of meat has increased.

- Storage facilities and existing stock: If there are huge quantities of stock supply is very elastic. If the product is perishable and there are no existing stocks, elasticity of supply tends to be low.

- Complex production processes: when production process is complex, supply tends to be inelastic while a simple and straight forward production process reduces production time and make supply elastic.

Any 7 points well examined each 2marks= (14marks)

14. a) Planning periods (time frames) are reference periods by any production unit when making production decisions. Firms operate under different time frames that include the following. **(1mark)**

i) **Very short-run** period is a very short period during which output cannot increase through the production process. Firms can only bring to the market only what is in stores in such a small period. **(1mark)**

ii) Short run period is a short period within which firms can only vary variable factors of production to increase output. Some factors remain fixed and therefore the law of diminishing return is likely to be experienced after a certain level of output. **(1mark)**

iii) Long run is a period that is long enough for a firm to expand output by varying all factors of production. If there is over expansion, the firm experiences diseconomies of scale. **(1mark)**

iv) **Very long run** is a very long period of time when the firm can expand in size and also change technology to produce new or high quality products. The very long time enables the firm to carry out research and developments. **(1mark)**

b) The law of diminishing returns states that given a short run situation with 2 factors of production, one variable and factor "As more and more units of a variable input are applied to the fixed factor in a given state of technology, the marginal product of the variable factor will eventually diminish.". **(2marks)**

The law of diminishing returns has a massive application, but it specially applies in agriculture sector. The most important factors responsible for the applicability of the law in agriculture sector include the following:

- Limited size of Land: Production is pursued to be increased by employing more and more units of variable factors. This will result in diminishing returns.

- Less Use of Machinery: In the agricultural sector, there is limited use of machinery as compared to industry. The reason is that in the agricultural sector most of the work is done by hands. This also results in low productivity. Thus, agriculture remains deprived of several external and internal economies of scale. Therefore, the law of diminishing returns applies in agricultural sector.

- Influence of natural factors like rainfall, climate, floods etc. Even, in case man makes all best efforts but nature is not in favour, the law of diminishing returns is surely to apply.

- Agriculture is a seasonal occupation: The people are not busy on land throughout the year. They remain busy only during the period of ploughing and harvesting season. For the remaining period, both farmers and land remain idle which reduce the production per worker. Thus, the law of diminishing returns quickly applies to agriculture sector.

- Difference in the Fertility of Land: All pieces of land are not equally fertile. When demand for land increases even less fertile land are also brought under cultivation. It means fewer marginal returns and high cost of production.

- Ineffective Supervision: Agricultural operations are spread over the vast areas. Therefore, effective supervision becomes most risky and difficult. The result is the law of diminishing returns.

- Less Chances of Division of Labour: In agricultural sector, there are very less chances of division of labour. Therefore, production on large scale is ruled out. It also results into the operation of the law of diminishing returns.

Any 4points each 2 marks **(8marks)**

15. a) MU = $\frac{\Delta TU}{\Delta Q}$

= $\frac{TU2-TU1}{Q2-Q1}$

Units consumed	Total utility	Marginal utility
1	20	-
2	25	5
3	28	3
4	28	0
5	26	-2
6	22	-4

(10marks)

b) The TU is increasing but at a decreasing rate. After the 4^{th} unit, TU declines because marginal utility becomes negative due to disutility or negative utility which sets in. for example one can start vomiting after the 4th unit, a situation that reduces TU he or she had gained. **(5marks)**

16) **Capital accumulation** refers to the process of increasing a country's stock of real capital/assets over a given period of time. Or it is the increase in the stock of capital goods.

Any relevant definition = **(1mark)**

In Rwanda, there is low levels of capital accumulation and this is due to the following factors.

- Low level of savings due to wide spread poverty and income inequalities in the country which reduces our country's capital accumulation process.

- Poor attitudes towards work and negative perception about capital formation due to some cultural and traditional beliefs of our country's society which reduces self-driven entrepreneurship abilities needed in the development process

- A poorly-developed financial sector which discourages the accumulation of capital through increased savings mobilization and investment. This slows the opportunities for quicker transformation of the subsistence sector and subsequently creation of capital

- Insecurity in some parts of the country which reduces investors' confidence in the economy, (both local and foreign) which in turn negatively affects the capital formation process

- Low levels of profitability due to limited entrepreneurial skills, small market etc. which limits the expansion possibilities of businesses thus the likelihood for increased capital formation as well.

- Existence of rudimentary and undeveloped technologies which reduces a country's opportunities for increased efficiency and quality products hence discouraging capital accumulation.

- Low level of entrepreneurial skills in Rwanda meaning there is less readiness to start new ventures thus low the levels of investments and capital accumulation as well

- Poor remuneration of labour which makes it become less productive and inefficient thus discourages capital formation. This is because low wages don't motivate them to produce more which reduces output, profitability and investments hence capital formation.

- A small number of active labour participation which reduces the productive capacity of a country hence its stock of capital assets.

High levels of capital outflows in form of capital accumulation which leads to a decrease in capital accumulation.

A small market which discourages production leading to low incomes, low savings, low investment and less capital accumulation.

- A high population growth rate with more dependants leading to high marginal propensity to consume than save thus, discourages capital formation because it reduces savings and investment levels.

- Unfavourable policies on taxes and subsidies which discourage savings, investment and production and thus reduces the process of capital accumulation.

- Undeveloped and unevenly distributed socio-economic infrastructure that scares away potential investors hence reduce the level of country's stock of real assets.

Any 7points well explained each 2marks (14marks)

END