SAMPLE QUESTION PAPER - 5

Economics (030)

Class XI (2024-25)

Time Allowed: 3 hours **Maximum Marks: 80**

General Instructions:

1. This question paper contains two sections:
   Section A – Micro Economics
   Section B – Statistics
2. This paper contains 20 Multiple Choice Questions type questions of 1 mark each.
3. This paper contains 4 Short Answer Questions type questions of 3 marks each to be answered in 60 to 80 words.
4. This paper contains 6 Short Answer Questions type questions of 4 marks each to be answered in 80 to 100 words.
5. This paper contains 4 Long Answer Questions type questions of 6 marks each to be answered in 100 to 150 words.

Section A

1. **Assertion (A):** Rajiv scored 57 in Mathematics, Ravi scored 98 in Statistics, Anita Scored 45 in Economics. The given data is statistical data. **[1]**
   Reason (R): The statistical data needs to be numerical in nature.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

2. P_{10} is the index for time **[1]**

   a) 0 on 1
   b) 0 on 0
   c) I on 1
   d) 1 on 0

3. Simple correlation is called: **[1]**

   a) Negative
   b) Linear correlation
   c) Positive
   d) Non linear correlation

4. Find index number for year 2005 taking 2000 as the base year from the following data by simple average of price relative method: **[1]**

Commodities	A	B	C	D	E
Price (2000) (Rs)	100	80	160	220	40
Price (2005) (Rs)	140	120	180	240	40

a) 122.2 b) 154.32

c) 121.32 d) 135.32

5. A series of numerical figures which show the relative position is called: **[1]**

a) Rational number b) Relative number

c) Index number d) Absolute Number

6. A consumer price index measures changes in: **[1]**

a) Consumer prices b) Wholesale prices

c) Retail prices d) Producer's prices

7. In which process raw material is converted into end products having utility? **[1]**

a) Exchange b) Investment

c) Consumption d) Production

8. The most common graphical presentation of quantitative data is a **[1]**

a) pie chart b) histogram

c) bar graph d) relative frequency

9. Which of the following measures changes in retail price of the commodities? **[1]**

a) Industrial production index b) Wholesale Price Index

c) Consumer Price Index d) Weighted Index

10. Compute the coefficient of correlation of the following score of A and B **[1]**

A	5	10	5	11	12	4	3	2	7	1
B	1	6	2	8	5	1	4	6	5	2

a) 0.54 b) 0.52

c) 0.58 d) 0.56

11. For a data Lasperey's index number is 120 and fisher's index number is 125. Calculate Paasche's index number. **[3]**

12. The sales of a balloon seller in seven days of a week are as given below. **[3]**

Days	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Sales (in Rs.)	100	150	125	140	160	200	250

If the profit is 20% of sales, then find his average profit per day.

OR

Find unknown frequency in the table given below.

X	**Frequency (f)**
5	5
10	7
15	?
20	10
25	8
30	6
	$\Sigma f = 50$

13. Differentiate between spatial and chronological classification with example. **[4]**

14. Show the annual profit figures of a firm with the help of a time series graph. **[4]**

Year	Profit (in Rs. '000)
2006	60
2007	72
2008	75
2009	65

2010	80
2011	95

OR

In a trip, organised by a college, there were 80 people, each of whom paid Rs. 15.50 on an average. There were 60 students, each of whom paid Rs. 16. Members of teaching staff were charged at a higher rate, the number of servants (all males) were 6 and they were not charged anything. The number of females were 20% of the total and there was only one female staff member. Tabulate this information.

15. Discuss briefly the various sources of data. **[4]**

16. From the following data, calculate coefficient of correlation between age and playing habits. **[6]**

Age Group	20 -30	30 - 40	40 - 50	50 - 60	60 - 70
Number of students	25	60	40	20	20
Number of Regular Players	10	30	12	2	1

17. **Give formula for:** **[6]**

a. Simple mean in individual series by short cut method

b. Weighted mean

c. Simple mean in continuous series by direct method

d. Simple mean in discrete series by short cut method

e. Combined Mean

f. Simple mean in continuous series by step deviation method

OR

Following table gives the distribution of companies according to the size of capital. Using step deviation method, find out the mean size of the capital of a company.

Capital (Rs. in lakh)	Less than 5	Less than 10	Less than 15	Less than 20	Less than 25	Less than 30
Number of Companies	20	27	29	38	48	53

Section B

18. In case of increase in supply, we move: **[1]**

a) from upper point to lower point of the supply curve

b) from lower point to upper point of the supply curve

c) to right on another supply curve

d) to left on another supply curve

19. One of the characteristics of economic resource is scarcity. Which is the other? **[1]**

a) They are not marketable

b) They are in abundance

c) They have alternate uses

d) They are available in limited quantity

20. Excess capacity is a prominent feature of equilibrium under? **[1]**

a) Perfect competition

b) gopoly

c) Monopoly

d) Monopolistic competition

21. The Total revenue become negative when **[1]**

a) TR is constant and maximum

b) TR stops rising at increasing rate

c) Never

d) TR starts rising

22. The average fixed cost at 4 units of output is ₹ 20. Average variable cost at 5 units of output is 40. Average cost of producing 5 units is: **[1]**

a) ₹ 60

b) ₹ 56

c) ₹ 20

d) ₹ 40

23. **Assertion (A):** When the law of demand fails, the inverse relationship between price and quantity does not hold good. **[1]**
Reason (R): The demand curve may slope upward showing higher purchases at a higher price.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

24. Which of the following is a feature of perfect competition? **[1]**

a) Homogeneous Units of the Product
b) Large Number of Buyers and Sellers
c) Perfect Knowledge of the Market
d) All of these

25. Can MR be zero or negative? **[1]**

a) Both are not related
b) Both are related
c) Yes
d) No

26. Average fixed cost (AFC) is indicated by: **[1]**

a) a rectangular hyperbola
b) a straight line parallel to X-axis
c) a U-shaped curve
d) a straight line parallel to Y-axis

27. In case of perfect competition: **[1]**

i. a firm is able to charge higher price
ii. a firm is able to charge uniform price
iii. a firm is able to sell any amount at the prevailing price

a) only i
b) Both ii and iii
c) only ii
d) only ii

28. Draw PPC for an economy, if production possibilities are as under. Also find marginal opportunity cost. **[3]**

Shirt (Millions)	0	1	2	3	4	5
Computer (Thousands)	15	14	12	9	5	0

OR

Classify the following statements into positive economics or normative economics, with suitable reasons:

a. Government should try to control the rising fiscal deficit.

b. Real Gross Domestic Product (GDP) is calculated on the basis of **base year price**.

29. Explain 'large number of buyers and sellers' feature of perfectly competitive market. **[3]**

30. Distinguish between Individual's Demand and Market Demand. Name the factors affecting demand for a goods by an individual. **[4]**

31. As a producer, how would you adjust your level of output when MR and MC are not equal? Assume that, the price of your product is constant for you, and the law of variable proportions is operative. **[4]**

OR

From the following table, find out the level of the output at which the producer will be in equilibrium. Give reasons for your answer.

Output (Units)	Marginal Revenue (Rs.)	Marginal Cost (Rs.)
1	8	10
2	8	8
3	8	7
4	8	8
5	8	9

32. A consumer consumes only two goods A and B and is in equilibrium. Show that when price of good B falls, demand for B rises. Answer this question with the help of utility analysis. **[4]**

33. Complete the following data. **[6]**

Units of Labour	**Average Product (A) (units)**	**Marginal Product (Units)**
1	8	-
2	10	-
3	-	10
4	9	-
5	-	4
6	7	-

34. **Answer the following questions** **[6]**

(i) The measure of price elasticity of demand of a normal goods carries minus sign while price elasticity of supply carries plus sign. Explain why? **[3]**

(ii) A commodity showing high elasticity of demand often has a large number of close substitutes in the market. Do you agree? **[3]**

Solution

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Section A

1.

(d) A is false but R is true.

Explanation:

A is false but R is true.

2. **(a)** 0 on 1

Explanation:

P_{10} is the index for time "0" on time "1" as base.

3.

(b) Linear correlation

Explanation:

Simple Correlation is also called Liner Correlation. Linear correlation is said to exist if the amount of change in one variable tends to bear a constant ratio to the amount of change in the other variable.

4. **(a)** 122.2

Explanation:

From the below table , $P_{01}=\frac{\sum P}{n}=\frac{611}{5}=122.2$

p_0	p_1	$P=\frac{p_1}{p_0}\times 100$
100	140	140
80	120	150
160	180	112
220	240	109
40	40	100
		$\sum P=611$

5.

(b) Relative number

Explanation:

Relative numbers or values are dependent on other numbers. In other words, they are relative to other (absolute) numbers. A series of numerical figures which show the relative position is called Relative number.

6.

(c) Retail prices

Explanation:

In India, three CPI's are constructed. They are CPI for industrial workers (1982 as base), CPI for urban non manual employees (1984–85 as base), and CPI for agricultural labourers (base 1986–87). They are routinely calculated every month to analyse the impact of changes in the retail price on the cost of living of these three broad categories of consumers.

7.

(d) Production

Explanation:

It is in the process of production that the raw materials are processed and made into finished products suitable for consumption.

8.

(b) histogram

Explanation:

A histogram is an accurate representation of the distribution of numerical data. It is an estimate of the probability distribution of a continuous variable and was first introduced by Karl Pearson. It differs from a bar graph, in the sense that a bar graph relates two variables, but a histogram relates only one.

9.

(c) Consumer Price Index

Explanation:

Consumer price index (CPI), also known as the cost of living index,measures the average change in retail prices.

10.

(c) 0.58

Explanation:

A(X)	B(Y)	XY	X^2	Y^2
5	1	5	25	1
10	6	60	100	36
5	2	10	25	4
11	8	88	121	64
12	5	60	144	25
4	1	4	16	1
3	4	12	9	16
2	6	12	4	36

7	5	35	49	25
1	2	2	1	4
	$\sum$	288	494	212

$r=\frac{N\sum XY-\sum X\sum Y}{\sqrt{N(\sum X^2)-(\sum X)^2}\sqrt{N(\sum Y^2)-(\sum Y)^2}}$

$=\frac{10(288)-(60)(40)}{\sqrt{10(494)-(60)^2}\sqrt{10(212)-(40)^2}}=0.58$

11. $Fisher's\ Index=\sqrt{\frac{\sum P_1q_0\sum P_1q_1}{\sum P_0q_0\sum P_0q_1}}$

Fisher's Index = $\sqrt{L\times P}$

$125=\sqrt{120\times P}$

On squaring both sides;

15625 = 120 x P

$\frac{15625}{120}=P$

P = 130.21

12. We can find the profit of each day by using the formula $P=\frac{20}{100}\times sales$

Days	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Profit (P) (in Rs.)	20	30	25	28	32	40	50

Mean = Sum of all observations / Total no. of observations = $\frac{\Sigma P}{n}$

Here, total no. of observations = 7.

$Average\ Profit(\overline{P})=\frac{20+30+25+28+32+40+50}{7}$

$=\frac{225}{7}=Rs.32.14$

OR

To find unknown frequency subtract the sum of known frequencies from the sum of total frequencies. Here it is given that the sum of frequencies is 50.

$\Sigma f=50$

and the known frequencies are 5,7,10,8 and 6.

∵Sum of known frequency= 5+7+10+8+6=36

∴Unknown Frequency = Total Frequency-Sum of Known Frequencies

=50 - 36=14.

Therefore, the missing frequency is 14.

13. **Spatial Classification:**

In spatial classification, data are classified according to geographical areas.

Example: State wise classification of production of food grains in India: State Production of food grains (in tonnes)

State	**Production of food grains (in tons)**

Orissa	3,00,000
A. P	2,50,000
U. P	22,00,000
Assam	1,00,00,000

(ii) Chronological classification.

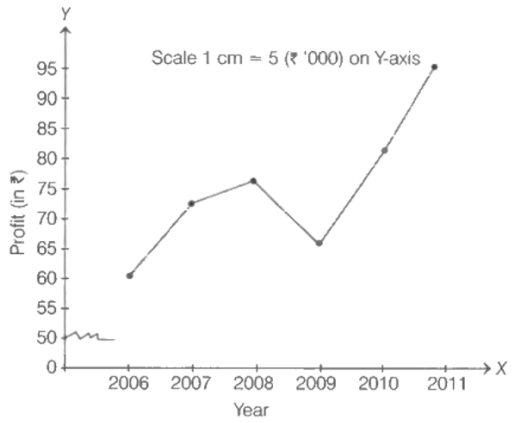
In this type of classification, the data are classified according to different time periods.

Example: Population of India for different time periods.

Profits of a business establishment over different years.

Year	Population (in crores)
1921	24.8
1931	27.3
1941	31.8
1951	35.6

14. As per the question, year 2006 to 2011 and their respective profits are given Here, we take profit on the Y- axis and year on the X-axis. Before plotting the graph, we take a false baseline because the profit starts from 60 and there are very small fluctuations in the remaining values of profit, so we take a false base of 50 and then we take the scale as 1 cm = 5 (in thousands). The time series graph of given annual profit figures is shown below:



OR

From the information given in the question, we have

Total participants = 80

Number of students = 60

Number of servants = 6

∴ Number of teaching staff = 80 - (60 + 6) = 14

It is given that the number of female teaching staff = 1

∴ Number of male teaching staff = 14 - 1 = 13

It is also given that the number of females is 20% of the total.

Therefore, total number of females = 80 × 20% = $\frac{80\times20}{100}$ = 16.

Number of female students = 16 - 1 = 15 (since no. of female teaching staff is 1, we deduct that from the total no. of females to get the no. of female students).

Total contribution = 80 × 15.50 = Rs. 1240

Contribution from students = 60 × 16 = Rs. 960

Contribution from teaching staff = 1240 - 960 = Rs. 280

∴ Contribution per head from teaching staff = $\frac{280}{14}$ = Rs. 20

Now, this information can be tabulated as below

Participants	**Sex**		**Total**	**Contribution Per Head**	**Total contribution**
	Males	**Females**			
Students	45	15	60	16	960
Teaching Staff	13	1	14	20	280
Servants	6	-	6	-	-
Total	64	16	80	15.50	1240

15. There are two sources of Collection of data:
    i. **Primary source:** Primary source of data implies Collection of data from its source of origin. It offers you first hand quantitative information relating to your statistical study.
    ii. **Secondary Source:** It implies Collection of data from some agency or institution which already happens to have collected the data through statistical survey. It does not offer you first hand information relating to your statistical study. You are to rely on the information which is already existing.
16. First, we are required to calculate the percentage of regular players.

Calculation of Percentage of Regular Players:

Number of Students	**Number of Regular Players**	**Percentage of Regular Players**
25	10	$\frac{10}{25}$ × 100= 40
60	30	$\frac{30}{60}$ × 100= 50
40	12	$\frac{12}{40}$ × 100= 30
20	2	$\frac{2}{20}$ × 100= 10
20	1	$\frac{1}{20}$ × 100= 5

Denoting mid value of age as X and percentage of regular players as Y.

Age Group	**X**	**dx(X - A), A = 45**	**dx' $\left(\frac{dx}{c_1}\right)$, c_1 =10**	**dx'^{2}**	**Y**	**dy(Y - A), A = 30**	**dy' $\left(\frac{dy}{c_2}\right)$, c_2 = 5**	**dy'^{2}**	**dx'dy'**

20 - 30	25	-20	-2	4	40	10	2	4	-4
30 - 40	35	-10	-1	1	50	20	4	16	-4
40 - 50	45	0	0	0	30	0	0	0	0
50 - 60	55	10	1	1	10	-20	-4	16	-4
60 - 70	65	20	2	4	5	-25	-5	25	-10
			$\Sigma dx' = 0$	$\Sigma dx'^2 = 10$			$\Sigma dy' = -3$	$\Sigma dy'^2 = 61$	$\Sigma dx'dy' = -22$

Here, n = 5, $\Sigma dx' = 0$, $\Sigma dx'^2 = 10$, $\Sigma dy' = -3$, $\Sigma dx'dy' = -22$ $\Sigma dy'^2 = 61$

Now,Putting the values in the given formula:

$$r = \frac{\Sigma dx'dy' - \frac{\Sigma dx' \times \Sigma dy'}{n}}{\sqrt{\Sigma dx'^2 - \frac{(\Sigma dx')^2}{n}} \times \sqrt{\Sigma dy'^2 - \frac{(\Sigma dy')^2}{n}} =}$$

$$= \frac{-22 - \frac{0 \times -3}{5}}{\sqrt{10 - \frac{(0)^2}{5}} \times \sqrt{61 - \frac{(-3)^2}{5}}}$$

$$= \frac{-22}{\sqrt{10} \times \sqrt{61 - 1.8}} = \frac{-22}{\sqrt{10} \times \sqrt{59.2}}$$

$$= \frac{-22}{3.16 \times 7.69} = \frac{-22}{24.3} = -0.90$$

- ***Therefore, Karl Pearson's coefficient of correlation between age and playing habits is -0.90.***
- ***Interpretation of r***

1. It indicates that there is a high degree of negative correlation between age and playing habits.
2. It indicates that as age increases, the tendency to play decreases.

17. (a) $\overline{x} = \frac{1}{n}A + \frac{\sum d}{N}$

(b) Weighted Mean $= \Sigma WX / \Sigma W$

(c) $\overline{x} = \frac{\sum_{i=1}^{n} f_i m_i}{\sum_{i=1}^{n} f_i}$

(d) $\overline{x} = A + \frac{\sum_{i=1}^{n} f_i d_i}{\sum_{i=1}^{n} f_i}$

(e) Combined Mean $\overline{x}12 = \frac{\overline{x}_1 N_1 + \overline{x}_2 N_2}{N_1 + N_2}$

(f) $\overline{x} = A + \frac{\sum d'}{N} \times i$

OR

Capital (Rs. in lakh)	**Number of Companies (f)**	**Mid-Value (m)**	$\dim(m-A)$ $(A=12.5)$	$\mathrm{d'm}\left(\frac{\mathrm{dm}}{\mathrm{c}}\right)$ **(c = 5)**	**fd' m**
0-5	20	2.5	-10	-2	$\left.\begin{matrix}-40\\-7\end{matrix}\right]-47$
5-10	27-20=7	7.5	-5	-1	
10-15	29-27=2	12.5	0	0	0
15-20	38-29=9	17.5	+5	+1	$\left.\begin{matrix}+9\\+20\\+15\end{matrix}\right]+44$
20-25	48-38=10	22.5	+10	+2	
25-30	53-48=5	27.5	+15	+3	
	$\Sigma f=53$				$\Sigma fd'm=-3$

Here,

A= 12.5 , $\Sigma f=53$, $\Sigma fd'm=-3$ and c =5

$\overline{X}=A+\frac{\Sigma fd'm}{\Sigma f}\times c=12.5+\frac{(-3)}{53}\times 5=Rs.12.5-0.28=Rs.12.22$

$\therefore \overline{X}=12.22$

Hence, mean size of capital is Rs.12.22 lakhs

Section B

18.

(c) to right on another supply curve

Explanation:

Increase in supply refers to a situation when more is supplied at the existing price of the commodity. It leads to a forward shift in the supply curve.

19.

(c) They have alternate uses

Explanation:

Economic resources are the assets which an economy may have available to supply and produce goods and services to meet the ever changing needs and wants of individuals and society as a whole.

20.

(d) Monopolistic competition

Explanation:

In monopolistic competition , the actual output supplied is always less than the potential output. A producer under monopolistic competition will not move towards the potential or ideal output as that will increase his MC and MC will become more than MR leading to losses.

21.

(c) Never

Explanation:

the total revenue can never become negative as if some qty is sold then some revenue will surely be generated. It can fall but can never become negative. If nothing is being sold, then TR will be zero but not negative.

22. **(a)** ₹ 60

Explanation:

₹ 60

Average cost = Average fixed cost + Average variable cost

Average cost = 20 + 40 = 60

23.

(b) Both A and R are true but R is not the correct explanation of A.

Explanation:

When the law of demand fails, the inverse relationship between price and quantity does not hold good. Instead, the demand curve may slope upward showing higher purchases at a higher price.

24.

(d) All of these

Explanation:

All the options are features of perfect competition.

25.

(c) Yes

Explanation:

MR can be zero when TR remains same with rise in output and MR can be negative when TR falls with rise in output.

26. **(a)** a rectangular hyperbola

Explanation:

AFC is a rectangular hyperbola. It shows that AFC decreases as output increases and AFC× Q at any level of output is the same. Because AFC× Q= TFC which is constant at all levels of output.

27.

(b) Both ii and iii

Explanation:

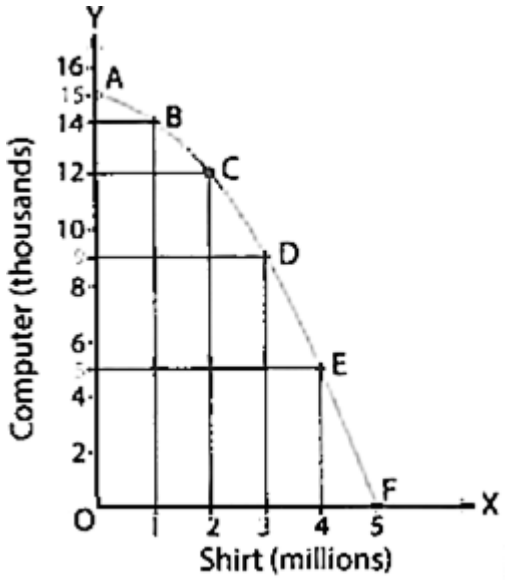
Perfect competition is a form of the market where there is a large number of buyers and sellers of a commodity. how much genius product is sold and its price is determined by the force of supply and demand. An individual buyer or seller has no control over price.

Accordingly, any individual form fails to make any influence on the price of the commodity.

28.

Shirt (Million)	Computer (Thousands)	Marginal Opportunity Cost
0	15	-
1	14	$\frac{1}{1} = 1$
2	12	$\frac{2}{1} = 2$
3	9	$\frac{3}{1} = 1$
4	5	$\frac{4}{1} = 1$
5	0	$\frac{5}{1} = 1$

PPC is shown below:



OR

a. Normative statement- it deals with a situation as it 'What ought to be'.

b. Positive statement- it deals with a real life situation, justifiable by facts.

29. A perfectly competitive market is dominated by a very large number of buyers and sellers of a commodity. This means that there is no such buyer who can influence the market price on its own by changing his individual demand. Further the number of sellers is so large that no individual firm owns the control over the market price of the commodity. Thus, firms have no role to play other than supplying the required output at the existing market price and therefore a firm is a price taker and not a price maker. Thus we can conclude that each buyer/seller in perfect competition has to accept the price as prevailing in the market.

30. **Individual Demand:** It refers to the quantities of a particular commodity that a consumer is willing to purchase at different possible prices.

Market Demand: It refers to the aggregate (total) demand for all the consumers in the

market at different prices.

The factors affecting demand for a commodity are as follows:

i. Price of a given commodity,

ii. Price of other goods,

iii. Income of the consumer,

iv. Consumer's tastes and preferences,

v. Expectation of change in the price in future.

31. Constant price means **AR is constant**. If AR is constant, AR = MR. Both AR and MR are, therefore, indicated by a horizontal straight line, parallel to X-axis. When the law of variable proportions is operative, the MC curve tends to be U-shaped. MC tends to decline corresponding to increasing returns, and it tends to rise corresponding to diminishing returns.

As a producer, I will strike my equilibrium at a point when:

(i) MR = MC, and (ii) MC is rising.

I may face two situations:

(i) MR > MC, and (ii) MR < MC.

For me, MR is constant in both situations so I will have to adjust my output. So the equality between MR and MC will be achieved only through changes in MC.

In situation 1, when **MR > MC**:

I would like to increase the level of output. This would cause an increase in MC. The process of increasing output is to be continued till MR = MC.

In situation 2, when **MR < MC**:

I would like to decrease the level of output. This would cause a decrease in MC. The process of decreasing output is to be continued till MR = MC.

OR

Producer's Equilibrium: Equilibrium refers to a state of rest when no change is required. A firm (producer) is said to be in equilibrium when it has no inclination to expand or to contract its output. This state either reflects maximum profits or minimum losses.

A producer strikes his equilibrium when two conditions are satisfied:

i. MR = MC, and

ii. MC is greater than MR after the MC = MR output level.

MR = MC in two situations:

i. when 2 units of output are produced, and

ii. when 4 units of output are produced.

However, while in situation 1 (i.e. when output = 2 units) MC is falling, while in situation 2 (when output = 4 units) MC is rising. We know that a producer will strike his

equilibrium only when MC is rising. Implying that the equilibrium will be struck when 4 units of output are produced, not then 2 units of output are produced.

32. Let other things being constant, the consumer will be in equilibrium when $\frac{MU_A}{P_A} = \frac{MU_B}{P_B}$

Now, suppose price of good B, i.e., P_B falls. The situation changes. The consumer is no longer on equality with respective prices of the two goods P_A and P_B. Other things remain in equilibrium, the above equality turns into an inequality : $\frac{MU_A}{P_A} > \frac{MU_B}{P_B}$

It means that per rupee MU from consumption of B is greater than the consumption of A. This induce the consumer to buy more of B and less of A. The consumer transfers expenditure from A to B.

33.

Labour (Q) (units)	**Total product (TP) (units)**	**Average product (AP) (Units)**	**Marginal product (MP) (units)**
1	8	8	8
2	20	10	12
3	30	10	10
4	36	9	6
5	40	8	4
6	42	7	2

For completing this table, we include one more column, Total Product (TP).

For the 1^{st} unit of labour, AP is given as 8, so, TP = AP $\times$ no. of units = 8 $\times$ 1 = 8. For the 1^{st} unit of labour, MP will also be 8.

For the 2^{nd} unit of labour, AP is given as 10, so TP = AP $\times$ no. of units = 10 $\times$ 2 = 20. MP= TR of 2^{nd} unit - TR of 1^{st} unit = 20-8=12.

For the 3^{rd} unit of labour, MP is given as 10, so TP = TP of 2^{nd} unit +10 =20+10=30. AP = TP/No. of units = 30/3 = 10.

For the 4^{th} unit of labour, AP is given as 9, so TP = AP $\times$ No. of units = 9$\times$4 =36. MP = TP of 4^{th} unit - TP of 3rd unit = 36-30=6.

For the 5^{th} unit of labour, MP is given as 4, so TP will be TP of 4^{th} unit + 4 = 36+4 = 40 . AP = TP/No. of units = 40/5 = 8.

For the 6^{th} unit of labour, AP is given as 7, so TP = AP $\times$ No. of units = 7$\times$6=42. MP = TP of 6^{th} unit - TP of 5^{th} unit = 42-40=2.

34. Answer the following questions

(i) It is true that measure of price elasticity of demand for a normal goods carriers minus sign because there is an inverse relationship between Price and Quantity. Whereas, there is a positive relationship between price and quantity supplied. Therefore, price elasticity of supply carries plus sign.

(ii) Yes, we agree with the given statement. The elasticity of demand is high in the case of goods with close substitutes (for example, tea has its substitute in coffee). The availability of close substitutes makes it possible for the consumer to switch from one commodity (like tea) to the other (like coffee) in response to a change in the relative price structure. Accordingly, the elasticity of demand is high.