Class XI Session 2025-26
Subject - Economics
Sample Question Paper - 4

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):** A producer can study the competition and demand of a commodity in the market. **[1]**
   Reason (R): A producer does not need statistics for deciding the cost of production and selling price in the market.

   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. Consumer Price Index number for the year 1957 was 313 with 1940 as the base year, the average monthly wages in 1957 of the workers in a factory was Rs.160. Their real wage is **[1]**

   a) 40.30
   b) 46.20
   c) 51.12
   d) 48.40

3. The correlation between number of shoe a person uses and day temperature is: **[1]**

   a) Perfectly positive
   b) Negative
   c) Positive
   d) Zero Correlation

4. Construct price index number from the following data by applying(Paasche' s Method) **[1]**

Commodity	Price (2000)	Quantity (2000)	Price (2001)	Quantity (2001)
A	2	8	4	5
B	5	12	6	10
C	4	15	5	12

D	2	18	4	20

a) 145.5 b) 144.7

c) 148.5 d) 148.7

5. Paasche's index number is expressed in terms of: **[1]**

a) $\frac{\sum P_{nqn}}{\sum P_o q_n}$ b) $\frac{\sum P_n q_n}{\sum P_o q_n}$

c) $\frac{\sum P_n q_o}{\sum P_o q_o} \times 100$ d) $\frac{\sum P_o q_o}{\sum P_n q_o}$

6. Index no. is equal to: **[1]**

a) Product of price relative b) Sum of price relatives

c) None d) Average of the price relatives

7. If it is said that per capita in India is Rs.18000 per annum it does not mean that income of each and every Indian is Rs. 18000 per annum.Which of the drawback of statistics is highlighted in this example **[1]**

a) Study of numerical facts b) Result are true only on an average

c) Prone to misuse d) Used only by experts

8. Diagrammatic presentation of data is known as: **[1]**

a) Presentation b) Organisation

c) All of these d) Collection

9. From the following which is not a kind of index number **[1]**

a) Quality b) value

c) price d) quantity

10. Find out Karl Pearson’s coefficient of correlation in the following series relating to prices and demand of a commodity. **[1]**

Price (Rs.)	11	12	13	14	15	16	17	18	19	20
Demand	30	29	29	25	24	24	24	21	18	15

a) 0.94 b) 0.96

c) 0.98 d) 0.92

11. Using the simple aggregative method, calculate the index number for the given data. **[3]**

	A	**B**	**C**	**D**
P_1	15	22	20	27
P_0	10	20	18	25

12. The annual salaries of four men were Rs.5000, Rs.6000, Rs.6500 and Rs.30,000. **[3]**

i. Find the arithmetic mean of their salaries.

ii. Does this average represent their salaries? Which property of arithmetic mean is reflected here?

OR

What are the important properties of mode?

13. Convert the following inclusive series into exclusive series. **[4]**

Class Interval	1-5	6-10	11-15	16-20	21-25
Number of Workers	10	15	20	25	30

14. Mr. X works as a data specialist in XYZ Ltd. In order to show rosy picture for the performance of his department, he mentioned only the positive points and did not show some of the major issues like lack of discipline and lack of automation of processes in his department. Which value is missing in this case? **[4]**

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. What is nth number in systematic sampling? How is it calculated? **[4]**

16. Measure the height of your classmates. Ask them the height of their benchmate. Calculate the correlation coefficient of these two variables. Interpret the result. **[6]**

17. Compare mean, median and mode as measures of central tendency. Discuss the situations when one is more suitable than other. **[6]**

OR

What is combined mean? How is it calculated?

Section B

18. Subsidy on the production of a commodity causes: **[1]**

a) decrease in supply
b) Contraction of supply
c) no change in supply
d) increase in supply

19. If many people die due to an earthquake, it will shift the country's PPC to the **[1]**

a) Can't say
b) Not affected
c) Left
d) Right

20. Marginal revenue in any competitive situation is? **[1]**

a) None of above
b) TRn/Qn-1
c) Trn-Pn-1
d) TRn-TRn-1

21. Revenue for a firm is **[1]**

a) Average price of a product sold
b) Addition to Total revenue after a good is sold
c) Money receipts from the sale of output
d) Money spent on producing output

22. When AC equals MC which of them is at its minimum **[1]**

a) MC
b) None
c) AC
d) Both

23. **Assertion (A):** The demand curve of the complementary good shifts to the right. **[1]**
Reason (R): Greater purchase of a commodity at its constant price points to a situation of increase in demand or a forward shift in the demand curve.

a) Both A and R are true and R is the correct
b) Both A and R are true but R is not the

explanation of A.

correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

24. If the demand curve of a firm is a horizontal straight line: **[1]**

a) a firm can sell only a specified amount at the existing price

b) all firms will sell equal amount of a commodity

c) a firm can sell any amount at the existing price

d) firms can differentiate their product

25. Can TR be a horizontal Straight line? **[1]**

a) May be

b) No

c) May not be always

d) Yes

26. Fixed costs are also known as: **[1]**

a) supplementary costs

b) indirect costs

c) all of these

d) overhead costs

27. under perfect competition, market price can be influenced by both buyers and sellers. **[1]**

a) False

b) May be

c) Can't say

d) True

28. What do you understand by normative economic analysis? **[3]**

OR

Define an economy. Why does it faces the problem of **how to produce**?

29. Analyse the impact of (i) an increase in the number of firms, and (ii) a decrease in input price on the equilibrium price and equilibrium quantity. Use diagram. **[3]**

30. Distinguish between Individual Demand Curve and Market Demand Curve. **[4]**

31. Explain producers equilibrium with the help of a numerical example using marginal revenue and marginal cost approach. **[4]**

OR

Explain the conditions of producer's equilibrium.

32. Explain the conditions of consumer's equilibrium under indifference curve approach. **[4]**

33. What is meant by **diminishing returns to a factor**? Discuss any two reasons for the operation of diminishing returns to a factor. **[6]**

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

(a) Price Elasticity of Demand of good X is (-2) and of good Y is (-3). Which of the two goods are more price elastic and why? **[3]**

(b) Explain any two factors that affect Price Elasticity of Demand. **[3]**

Solution

Section A

1.

(c) A is true but R is false.

Explanation:

A producer can study the competition and demand of a commodity in the market because a producer needs statistics for deciding the cost of production and selling price in the market.

2.

(c) 51.12

Explanation:

Calculation of Real Wages:

Price index number = 313

Average wage = Rs. 160

$\therefore$ Price index = $\frac{p_1}{p_0} \times 100$

$\Rightarrow 313 = \frac{160}{p_0} \times 100 \Rightarrow p_0 = \frac{160 \times 100}{313} = 51.12$

3.

(d) Zero Correlation

Explanation:

In this case, there is no relationship between the two variables given. This is a case of Zero Correlation.

4.

(d) 148.7

Explanation:

Commodity	Price (P0)	Quantity (q0)	Price (P1)	Quantity (q1)	P0q1	P1q1
A	2	8	4	5	10	20
B	5	12	6	10	50	60
C	4	15	5	12	48	60
D	2	18	4	20	40	80
TOTAL					148	220

Paasche' s Index No. = $\frac{\text{sum of p1 q1}}{\text{sum of p0 q1}} \times 100 = \frac{220}{148} \times 100 = 148.6486 = 148.7$

5.

(b) $\frac{\sum P_n q_n}{\sum P_o q_n}$

Explanation:

A weighted aggregative price index using current period quantities as weights is known as Paasche's price index. It is calculated as follow: $P_{01} = \frac{\sum P_n q_n}{\sum P_o q_n}$

6.

(d) Average of the price relatives

Explanation:

Method of Averaging relatives:

When there is only one commodity, the price index is the ratio of the price of the commodity in the current period to that in the

base period, usually expressed in percentage terms. The method of averaging relatives takes the average of these relatives when there are many commodities.

7.

(b) Result are true only on an average

Explanation:

Averages don't represent data as a whole. There is variability among the values of a given variable which are described by the measures of dispersion, not by averages.

8. **(a)** Presentation

Explanation:

Diagrammatic presentation of data is known as Presentation.

9. **(a)** Quality

Explanation:

Index number is measured for quantitative data not qualitative data .

10. **(a)** 0.94

Explanation:

Price(X)	DD(Y)	dx	dy	dx2	dy2	dxdy
11	30	-5	-6	25	36	30
12	29	-4	-5	16	25	20
13	29	-3	-5	9	25	15
14	25	-2	-1	4	1	2
15	24	-1	0	1	0	0
16	24	0	0	0	0	0
17	24	1	0	1	0	0
18	21	2	3	4	9	6
19	18	3	6	9	36	18
20	15	4	9	16	81	36
		-1	1	85	213	127

r= $\frac{N\sum dxdy-\sum dx\sum dy}{\sqrt{N\sum(dx)^2-(\sum dx)^2}\sqrt{N\sum(dy)^2-(\sum dy)^2}}$

= $\frac{10(27)-(-1)(1)}{\sqrt{10(85)-(-1)^2}\sqrt{10(213)-(1)^2}}$ = 0.94

11. **Construction of Index Number**

Here, we aggregate the current and the base year prices respectively and take the ratio of the two.

Commodity	**p_0 (Base Year)**	**p_1 (Current Year)**
A	10	15
B	20	22
C	18	20
D	25	27
	$\Sigma p_0 = 73$	$\Sigma p_1 = 84$

$P_{01} = \frac{\Sigma p_1}{\Sigma p_0} \times 100 \Rightarrow P_{01} = \frac{84}{73} \times 100 = 115.07$

12. i. $Arithmetic\ Mean = \frac{5000+6000+6500+30,000}{4}$

$\therefore \overline{X} = \frac{\Sigma X}{n} = \frac{47,500}{4} = Rs.\ 11,875$

ii. This mean does not represent the series because it is much higher than the actual salary of three persons, i.e. it is much higher than 5000, 6000 or 6500 and substantially less than the salary of the fourth person which is 30,000.
The property of arithmetic mean that is reflected here is that arithmetic mean is affected by extreme values.

OR

The important properties of mode are

i. Mode is affected by change in origin as well as a change in scale because if we add or subtract or multiply or divide each value of the series, then the modal value will also change.

ii. It may be undefined in a series unlike mean or median.

iii. It does not possess any mathematical properties. We cannot do any further mathematical or algebraic treatment to the value of mode.

13. To convert the inclusive series into exclusive series we need to find
correction factor = 6 -5 /2=0.5
This is added to the upper limit and subtracted from the lower limit of the class.
The exclusive series of the given inclusive series is shown below

Class Interval	**Frequency (f)**
0.5-5.5	10
5.5-10.5	15
10.5-15.5	20
15.5-20.5	25
20.5-25.5	30
Total	100

14. The value of transparency is missing in this case. Mr X should have ensured that he should have mentioned the areas of improvement in his department so that the action could be taken as regards those points.

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 = $80 \times 20\% = \frac{80 \times 20}{100} = 16$.
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. Nth number in systematic sampling is the number to be added in first randomly Size of population selected item. Nth number= $\frac{Size\ of\ population}{sample\ size}$

If for example, we need to find 10 students out of 100 then nth number will be 100/10=10

16.

Height of Classmate X	Height of Benchmate Y
67	65
56	66
65	57
68	67
72	68
72	69
69	70
71	72

X	Y	XY	X^2	Y^2
67	65	4355	4489	4225
56	66	3696	3136	4356
65	57	3705	4225	3249
68	67	4556	4624	4489
72	68	4896	5184	4624
72	69	4968	5184	4761
69	70	4830	4761	4900
71	72	5112	5041	5184
$\sum X$ = 540	$\sum Y$ = 534	$\sum XY$ = 36118	$\sum X^2$ = 36644	$\sum Y^2$ = 35788

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

$$= \frac{36118 - \frac{540 \times 534}{8}}{\sqrt{36644 - \frac{(540)^2}{8}}\sqrt{35788 - \frac{(534)^2}{8}}}$$

$$= \frac{36118 - 36045}{\sqrt{36644 - 36450}\sqrt{35788 - 35644.5}}$$

$$= \frac{73}{\sqrt{194}\sqrt{143.5}}$$

$$= \frac{73}{13.93 \times 11.98}$$

$$= \frac{73}{166.88}$$

= 0.44

Thus, the Correalation coefficient is 0.44

17. Mean, median and mode are all different measures of central tendency or the average but they are all different from each other. A comparison of the three is therefore necessary. Let us suppose there are a set of five observations - 1, 1, 2, 5, and 6. The mean is what most people call the average and it is found by adding all these numbers and dividing it with the number of observations: I. + 1 + 2 + 5 + 6 = 15/5 = 3. The median on the other hand is one where half the values are below and half the values are above. In our above observation set, the median is 2 because there are 2 observations (5 and 6) greater than 2 and two (1and1) which are less than 2, making it the median. The mode is the observation that is repeated the maximum number of times. therefore in our observation set it is 1 because 1 is the only number that occurs twice, making it the mode. The choice of which method to use depends on the following considerations.

    1. Rigidly defined - Mean and median are rigidly defined whereas mode is not. So as far as rigidity is concerned, mean and median are better than mode.

2. Based on all observations - An average should be based on all the observations of a series. This is met only mby mean and not by median and mode.
3. sampling stability - When the requirement is of least sampling variations, then mean is the best.
4. Further algebraic treatment - Mean only satisfies this characteristic, and because of this most of the stastical theories use mean as a measure of central tendency.
5. Easy to understand and calculate - An average should be easy to understand and easy to interpret. This characteristic is satisfied by all the three averages.
6. The measure of central tendency should not be undly affected by the extreme observations. The mode is the most suitable average from this point of view. Median is slightly affected whereas mean is very much affected by the presence of extreme observations.

OR

When two or more distributions are given with their number of items and arithmetic means, the combined mean can be calculated by applying the following formula. $\bar{x}_{12} = \frac{N_1\bar{x}_1+N_2\bar{x}_2}{N_1+N_2}$

Where,

$\bar{x}_{12}$ is combined mean of two series

n_1 is number of items in first series

$\bar{x}_1$ is mean of first series

n_2 is number of items in second series ,

It can be extended to more than two series by applying the following formula: $\bar{x}_c = \frac{N_1\bar{x}_1+N_2\bar{x}_2+...Nn\bar{x}_n}{N_1+N_2+...Nn}$

Section B

18.

(d) increase in supply

Explanation:

The subsidy is offered to the producers to increase the production of the commodity when it is economically not viable for the producers to do so at the existing market price. When the subsidy is offered, the supply curve of the commodity shifts to the right.

19.

(c) Left

Explanation:

Severe earthquake in a country leads to decline in both human as well as capital resources. As a result of which less resources are left for producing the goods. Thus decline in resources will lead to a leftward shift in the PPC.

20.

(d) TRn-TRn-1

Explanation:

Marginal revenue is the revenue earned by selling an additional commodity.

21.

(c) Money receipts from the sale of output

Explanation:

It refers to the amount received by a firm from the sale of a given quantity of a commodity in the market.

22.

(c) AC

Explanation:

When AC and MC intersect each other then AC is at is minimum and is constant. After this the AC rises with increase in output.

23.

(d) A is false but R is true.

Explanation:

The demand curve of the substitute good shifts to the right. Greater purchase of a commodity at its constant price points to a situation of increase in demand or a forward shift in the demand curve.

24.

(c) a firm can sell any amount at the existing price

Explanation:

Firm's demand curve is a horizontal straight line under perfect competition. Demand curve of the firm is perfectly elastic. It means that the firm can sell any amount of the commodity at the prevailing price. The horizontal straight line shows that the firm is to accept the price as determined by the forces of market supply and market demand; it can sell whatever amount it wishes to sell at this price.

25.

(b) No

Explanation:

TR cannot be a horizontal straight line as TR = qty * price. TR can be calculated by adding up revenue realised from sale of every additional unit . With sale of every additional unit TR increases. So it cannot be constant and thus cannot be a horizontal line.

26.

(c) all of these

Explanation:

all of these

27. **(a)** False

Explanation:

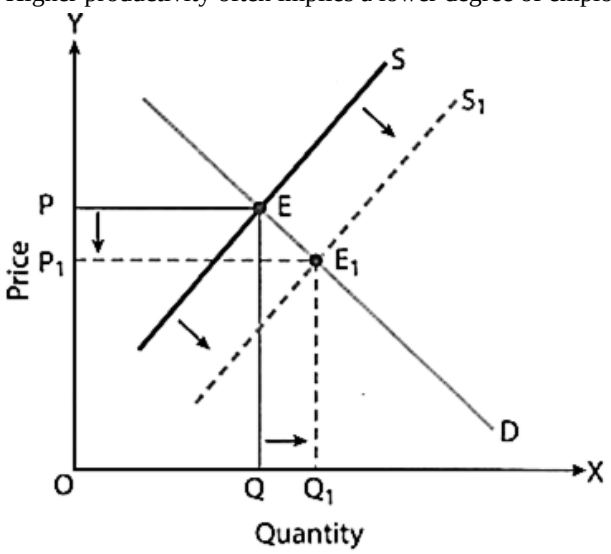
Neither buyers nor sellers can influence the market price under perfect competition.

28. Normative economic analysis refers to the analysis in which we study whether a particular mechanism is desirable or not. In this analysis, we study what ought to be the desired situation or in what ways the economic problems should be solved. In other words, it is concerned with what should be and what should not be, and what is desirable and what is not? In normative economic analysis, we come across normative statements that cannot be tested as they involve personal value judgements. It deals with idealistic situations and is based on ethics. It focuses on the value of economic fairness. An example of a normative statement could be, 'Central government should not stop providing minimum support price to the farmers'.

OR

An economy is a system that helps to produce goods and services and enables people to earn their living. It faces the problem of how to produce because it impacts production (or efficiency) on the one hand and the degree of employment on the other hand. Higher productivity often implies a lower degree of employment.

29.



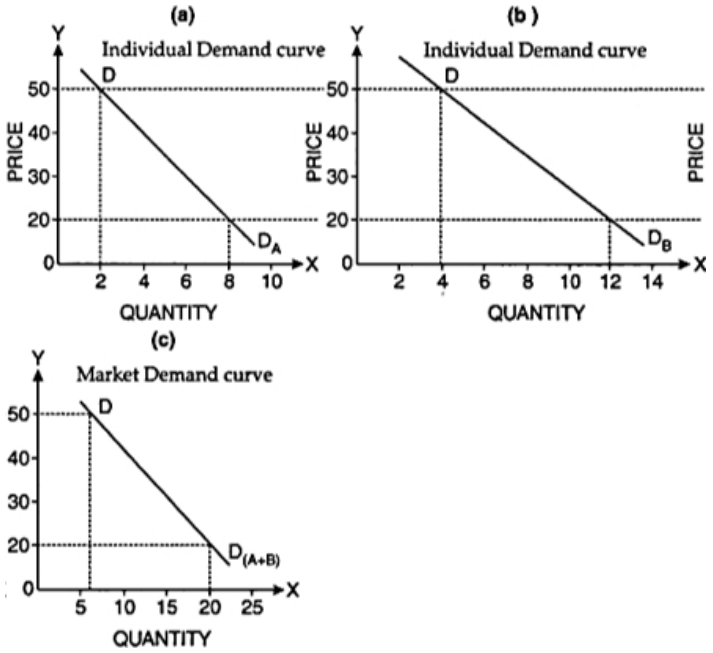
The diagram shows an increase in supply while demand remains unchanged. Equilibrium price falls to OP_1 and equilibrium

quantity rises to OQ_1.

i. When the **number of firms increases**, the market supply of the commodity increases. Supply curve shifts to the right.

ii. When **input price decreases**, the cost of production reduces. It causes an increase in supply and a forward shift in the supply curve.

30. Individual Demand Curve shows demand for a commodity by an individual buyer in the market. Market Demand Curve shows demand for a commodity by all the buyers in the market. Market Demand Curve is the horizontal summation of individual demand curves as under : DD (A+B) is market demand curve which is a horizontal summation of individual demand curves.



31. Producer's equilibrium refers to a situation, where a producer is producing that level of output, at which its profits are maximum. In other words, it is a situation of profit maximisation or cost minimisation (under MR and MC approach).

Following schedule explain the producer's equilibrium:

Units of Output (Q)	**MR (Rs)**	**MC (Rs)**
1	12	15
2	12	12 MR = MC
3	12	10 MR>MC
4	12	9
5	12	8
6	12	7
7	12	8
8	12	9
9	12	10
10	12	12 Producer's equilibrium MR = MC
11	12	15 MR < MC

Conditions of producer's equilibrium

Following are the two conditions of producer's equilibrium:

i. MR=MC (Marginal Revenue = Marginal Cost)

ii. MC must be rising at the point of equilibrium or MC curve must cut MR curve from below.

In the given schedule MR = MC, both at 2 units and 10 units of output, but the second condition of rising MC is fulfilled only at 10th unit of output. So, the producer is in equilibrium when he is producing 10 units.

OR

The two conditions of producer's equilibrium are:

i. MC = MR

ii. MC becomes greater than MR, if more is produced after the point of equilibrium.

Explanation:

i. If MC is less than MR, it is profitable to produce more units till MC becomes equal to MR.

ii. When MC becomes greater than MR after the MR = MC condition, production of each new unit is sold at a loss, which leads to decline in profits.

32. According to the indifference curve analysis, consumer's equilibrium is at a point where the slope of the indifference curve is equal to the slope of the budget line or the price line.

The conditions of the consumer's equilibrium are

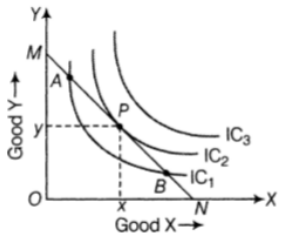
i. The given price line should be tangent to an indifference curve or marginal rate of satisfaction of good X for good Y (MRS_{xy}) must be equal to the price ratio of the two goods. i.e.$MRS_{xy} = \frac{P_x}{P_y}$, where

MRS_{xy} = Marginal Rate of Substitution of good X and good Y

P_x = Price of good X

P_y = Price of good Y, and

ii. At the point of equilibrium, the indifference curve must be convex to the origin. It implies that at the point of equilibrium, MRS must be diminishing.



In the diagram given, P is the equilibrium point at which budget line touches the Indifference Curve IC_2.

iii. The consumer's consumption decision is explained by combining the budget line and the indifference map

33. Diminishing returns to a variable input referred to a stage in production when with the employment of more and more units of variable factor with the given fixed factor, marginal product (MP) decreases and total product (TP) increases at diminishing rate. Reasons for the decreasing returns to a variable factor are:

i. Over-utilisation of the fixed factor
As we keep on increasing the variable factor along with the fixed factor eventually a position comes when the fixed factor has its limits and starts yielding diminishing returns.

ii. Improper coordination between Fixed and Variable factors
After a certain level of employment, the production process becomes too crowded with the variable input and factor proportion tends to become less and less suitable for the production.

34. Answer the following questions

(i)
- Price elasticity of demand is an economic measure of the change in the quantity demanded or purchased of a product in relation to its price change.It measures the responsiveness in demand due to change in its own price of the good.
- Mathematically it can be expressed as:

Price elasticity of demand = $\frac{\text{ChangeinQuantitydemanded}(\Delta Q)}{\text{Change in Price }(\Delta P)} \times \frac{\text{Price}}{\text{Quantity}}$

- Since, there exists an inverse relationship between price and quantity, therefore, either ΔQ or ΔP will be a negative number and because of this elasticity of demand is also a negative number. But while interpreting the result, the negative sign is ignored. So, good Y will be more price elastic than good X because 3 > 2.

(ii) The two factors that affect Price Elasticity of Demand are:

i. **Number of substitutes of goods:** Demand for goods which have close substitutes (like tea and coffee) is relatively more elastic, because when the price of such a good rise, the consumers have the option of shifting to its substitute.

Goods without close substitutes like wheat and salt etc are generally found to be less elastic or inelastic in demand. Thus the availability of close substitutes makes the demand sensitive to change in prices.

ii. **Proportion of income spent on the goods:** Goods on which consumers spend a small proportion of their income (toothpaste, needles etc) will have an inelastic demand i.e. when prices of such goods change, consumers continue to purchase the almost same quantity of these goods. On the other hand, goods on which the consumers spend a large proportion of their income (cloth, television etc) tend to have elastic demand. However, if the proportion of income spent on a commodity is large, then demand for such a commodity will be elastic.