CBSE Class 11

Economics

Sample Paper 09 (2019-20)

Maximum Marks: 80

Time Allowed: 3 hours

General Instructions:

i. All the questions in both sections are compulsory. Marks for questions are indicated against each question.
ii. Question numbers 1 - 10 and 18 - 27 are very short-answer questions carrying 1 mark each. They are required to be answered in one word or one sentence each
iii. Question number 11 - 12 and 28 - 29 are short-answer questions caring 3 marks each. Answers to them should not normally exceed 60-80 words each
iv. Question number 13 - 15 and 30 - 32 are also short-answer questions carrying 4 marks each. Answers to them should not normally exceed 80-100 words each
v. Question number 16 - 17 and 33 - 34 are long answer questions carrying 6 marks each. Answers to them should not normally exceed 100-150 words each
vi. Answer should be brief and to the point and the above word limit be adhered to as far as possible.

Section A

1. Fill in the blanks:

   A _____ statements may be described as What was, what is and what would be under the given set fo circumstances.

2. What is the difference between the upper limit and the lower limit of a class called?

3. The range of simple correlation coefficient is:

   a. Minus one to plus one

   b. 0 to infinity

c. 0 to plus one

d. Minus infinity to infinity

4. Which method of measuring correlation measures any type of relationship?

OR

How is Karl Pearson's coefficient of correlation defined?

5. Frequency of a variable is always:

   a. A fraction
   b. In percentage
   c. None of these
   d. An integer

6. Fill in the blanks:

   _____ Price Index are used in calculating the purchasing power of money and real wage.

7. State true or false:

   The index number is a special type of average.

8. Fill in the blanks:

   A systematic presentation of data in columns and rows is known as _____.

9. Match the following:

(a) The class Mid-point is equal to	(i) The upper-class limit of a class is excluded in the class interval
(b) The frequency distribution of two variable is known as	(ii) The actual value of observations
(c) Statistical Calculation in classified data are based on	(iii) Bivariate distribution

(d) Under the exclusive method	(iv) The average of the upper-class limit and lower class limit

10. Fill in the blanks:

    _____ activities are included in National Income.

11. Who is an enumerator? When do we need an enumerator?

12. Calculate the weighted mean of the following distribution.

Items	12	29	14	41
Weight	6	4	5	2

OR

There are two factories employing 100 and 80 men, respectively. If the arithmetic mean of their monthly salaries are Rs.575 and Rs.625, then find the arithmetic mean of the salaries of both the factories together.

13. A batsman is to be selected for a cricket team. The choice is between X and Y on the basis of their five previous scores which are

X	25	85	40	80	120
Y	50	70	65	45	80

Which batsman should be selected if we want,

i. a higher scorer, or
ii. a more reliable batsman in the team?

14. How do we get class intervals when mid points are given?

OR

Direction of export is shown in the following table. Prepare a pie diagram to show the percentage distribution of export.

Country	Export (in %)
USA	25
Japan	15
UK	30
China	20
Others	10

15. Why is standard deviation considered to be the best measure of dispersion?

16. Arithmetic mean is most commonly used measure of central tendency.

OR

From the following data, determine mode.

Size	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	4	10	25	15	23	22	12	3

17. Calculate coefficient of rank correlation from the following data.

X	48	33	40	9	16	16	65	24	16	27
Y	13	13	24	6	15	4	20	9	6	19

18. The government of your state is planning to construct a by-pass around a very busy market town. The new road would run through wetlands bordering a local river where a wide range of different creatures live. So, the environmentalists are against the project. The educationist and other wanted the money to be used to build a engineering college and to improve the existing poor health facilities. The government decide to go ahead with the road construction. What is the opportunity cost in this case?

19. State true or false:

    MR can be positive, zero or negative.

20. Match the following:

(a) Total Utility of a commodity is maximum when	(i) Change the quantity of the commodity
(b) Marginal Utility of a commodity	(ii) Total utility starts diminishing
(c) When marginal utility is negative, total utility	(iii) Always decreases with increase in quantity
(d) As per consumer's equilibrium theory, to reach consumer's equilibrium a consumer can	(iv) Marginal utility is zero

21. The market structure in which the number of sellers is small and there is interdependence in decision making by the firms is known as

    a. Perfect competition

    b. Monopolistic competition

    c. Oligopoly

    d. Monopoly

22. Fill in the blanks:

    _____ is the ratio of number of units of a good sacrificed to increase one more unit of other good.

    OR

    Fill in the blanks:

    The term micro has been derived from _____ word MIKROS.

23. Fill in the blanks:

    Positive statements can be empirically verified by which we can find out the degree of _____.

24. What will you say about MU when TU is maximum?
    a. It will be zero
    b. It will be negative
    c. It will be one
    d. It will be infinity
25. Fill in the blanks:

    _____ Price is a price at which commodity is actually purchased and sold in the market sat a point of time.

26. The problem of 'What to produce' covers the issue relating to :

    (a) Which goods are be produced
    (b) What quantities of goods to be produced

    a. Neither (a) and (b)

    b. Both (a) and (b)

    c. only b

    d. only a

27. Cost function shows

    a. Technological relationship between cost and price

    b. Inverse relationship between inputs and cost

    c. Functional relationship between cost and output

    d. Economic relationship between inputs and cost

28. Why is the demand curve of a firm under monopolistic competition more elastic than under monopoly? Explain.

OR

Which features of monopolistic competition are a monopolist in nature? Mention any three.

29. Explain the inverse relationship between price and quantity demanded of a commodity.

30. Define Law of Constant returns to a factor. Explain.

31. A and B are complementary goods. Explain the effects of change in price of A on demand for B.

OR

Does production take place only on PPC?

32. Law of diminishing marginal utility will operate even if consumption takes place in intervals. Defend or refute.

33. State giving reasons whether the following statements are true or false.

    i. Total Product always increases whether there is increasing returns or diminishing returns to a factor.
    ii. When there are diminishing returns to a factor, Total Product always decreases.
    iii. Total Product will increase only when Marginal Product increases.

34. Explain the implications of the following in an oligopoly market,

    i. Barriers to entry of new firms.
    ii. A few or a few big sellers.

OR

If the equilibrium price of a good is greater than its market price, explain all the changes that will take place in the market. Use the diagram.

CBSE Class 11

Economics

Sample Paper 09 (2019-20)

Solution

Section A

1. Positive
2. The difference between the upper limit and lower limit of a class is called class interval. Class interval is generally used to draw a histogram.
3. (a) Minus one to plus one
   Explanation: The size of correlation coefficient ranges from -1 to +1. This indicates the size of relationship between the variables. When it is +1, there is perfect positive correlation and when it is -1, there is perfectly negative correlation.
4. karl Pearson's coefficient of correlation.

   OR

   Karl Pearson's Coefficient of Correlation is a widely used mathematical method wherein the numerical expression is used to calculate the degree and direction of the relationship between linear related variables. The **coefficient of correlation** is denoted by “r”. It can also be defined as the ratio of covariance between X and Y to the product of standard deviations of X and Y.
5. (d) An integer **Explanation:** Frequency is actually a count and count of a thing cannot be decimal.
6. Consumer
7. True
8. Table
9. (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i).
10. Economic

11. Some persons are appointed who fill the questionnaire after getting response from respondents. They are called enumerators. We need an enumerator when we need accuracy in data and some or all of our respondents are illiterate.

12. For calculating the weighted mean, we have to multiply each item of the series by its weights, i.e. X has to be multiplied by W and then we have to find the total of XW i.e. ΣXW.

Calculation of Weighted Mean

X	W	XW
12	6	72
29	4	116
14	5	70
41	2	82
	$\Sigma W = 17$	$\Sigma XW = 340$

Weighted mean = $\overline{X}_W = \frac{\Sigma XW}{\Sigma W} = \frac{340}{17} = 20$
Thus, $\overline{X}_W = 20$

OR

Let n_1 be the no. of persons in the first factory and $\overline{X}_1$ be the mean of the first factory workers, and n_2 be the number of persons in the second factory and their mean be $\overline{X}_2$

$\because n_1 = 100 \text{ and } \overline{X}_1 = 575 \text{ and } n_2 = 80 \text{ and } \overline{X}_2 = 625$
$\therefore \text{ Combined Mean}\left(\overline{X}_{1,2}\right) = \frac{n_1\overline{X}_1 + n_2\overline{X}_2}{n_1+n_2}$
$\Rightarrow \quad \overline{X}_{1,2} = \frac{575\times100+625\times80}{100+80} = \frac{57500+50000}{180}$
$= \frac{107500}{180} = 597.2$
$\therefore \quad \overline{X}_{1,2} = 597.2$

13. **Batsman X**
Calculation of Mean and Coefficient of Variation

X	d(X -$\overline{X}$), $\overline{X}$ = 70	d^2
25	-45	2025
85	+15	225
40	-30	900
80	10	100
120	50	2500
ΣX = 350		Σd^2 = 5750

$$\overline{X} = \frac{\Sigma X}{n} = \frac{350}{5} = 70$$
$$\sigma = \sqrt{\frac{\Sigma d^2}{n}} = \sqrt{\frac{5750}{5}} = 33.91$$
$$CV = \frac{\sigma}{\overline{X}} \times 100 = \frac{33.91}{70} \times 100 = 48.44$$

Batsman Y

Calculation of Mean and Coefficient of Variation

Y	d(Y -$\overline{Y}$), $\overline{Y}$ = 62	d^2
50	-12	144
70	8	64
65	3	9
45	-17	289
80	18	324
ΣY = 310		Σd^2 = 830

$$\overline{Y} = \frac{\Sigma Y}{n} = \frac{310}{5} = 62$$
$$\sigma = \sqrt{\frac{\Sigma d^2}{n}} = \sqrt{\frac{830}{5}} = 12.88$$
$$CV = \frac{\sigma}{\overline{Y}} \times 100 = \frac{12.88}{62} \times 100 = 20.78$$

i. Since the average score of batsman X is higher than the average score of Batsman Y, batsman X should be chosen if we want a high scorer.

ii. Since the coefficient of variation of batsman Y is less than the coefficient of variation of batsman X, it means batsman Y is more consistent, and reliable than batsman Y.

14. Following steps are taken:

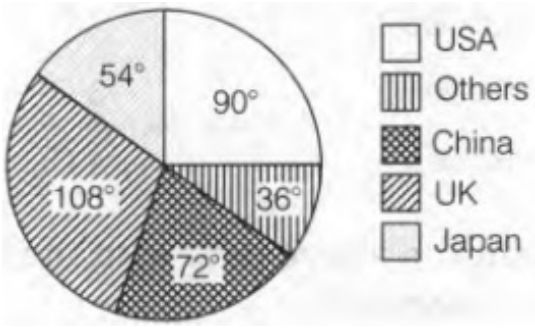
a. Add mid values of two successive classes.
b. Divide it by 2.
c. It is upper limit of preceding class and lower limit of successive class.
d. Find the difference between mid values of two successive classes.
e. Deduct it from the upper limit obtained to get lower limits of the preceding class.
f. Repeat it for all classes if classes are unequal (if difference between different mid values is different) and if classes are equal (if difference between different mid values is equal) simply keep on adding the difference between two successive mid values to find the upper limits of different classes.

OR

For constructing a pie diagram, it is necessary to convert the percentage into corresponding degrees in the circle. Since one circle contains 360 degrees, therefore we calculate the degree of angles by multiplying the percentage value by 3.6 i.e. $\frac{360}{100}$ which is equal to 3.6. The conversion to degree of angles is shown in the following table.

Country	Percentage of Export	Degree of Angles
USA	25	$\frac{25}{100} \times 360^\circ = 90^\circ$
Japan	15	$\frac{15}{100} \times 360^\circ = 54^\circ$
UK	30	$\frac{30}{100} \times 360^\circ = 108^\circ$
China	20	$\frac{20}{100} \times 360^\circ = 72^\circ$
Others	10	$\frac{10}{100} \times 360^\circ = 36^\circ$
	100	360°

A pie diagram to show percentage distribution export is given below :



15. The standard deviation is represented by the Greek letter (sigma). It is always calculated from the arithmetic mean, median and mode is not considered. While looking at the earlier measures of dispersion all of them suffer from one or the other demerit i.e.

    Range - It suffers from a serious drawback as it considers only 2 values and neglects all the other values of the series.

    Quartile deviation considers only 50% of the item and ignores the other 50% of items in the series.

    Mean deviation no doubt is an improved measure but ignores negative signs without any basis.

    Karl Pearson after observing all these things introduced the concept of standard deviation. Standard deviation is rigidly defined and is based on all the observations. It is capable of algebraic treatment and is not affected very much by fluctuations of sampling. So standard deviation is the best as compared to all other measures of dispersion.

16. Arithmetic mean is most commonly used measure of central tendency because:

    i. It is very simple to understand and easy to calculate- The calculation of arithmetic mean requires simple knowledge of addition, multiplication and division of numbers.
    ii. The calculation of A.Mis based on all the observations in the series. So, it is considered to be more representative of the distribution.
    iii. Since the A.M is capable of further algebraic treatment., it is widely used in the computation of various other statistical measures such as mean deviation,

standard deviation etc.

iv. It is strictly or rigidly defined and it leaves no scope for deliberate prejudice or personal bias.

v. It provides a good means of comparison.

vi. It has more sampling stability. Of all the averages, arithmetic mean is least affected by fluctuations of sampling.

OR

The modal class is not clear by inspection. Although, class interval 30-40 has the highest frequency (25), yet the greatest concentration of items is around class interval 50-60 having a frequency of 23. Hence, a grouping table is prepared and then analysis table to determine the modal class.

Grouping Table

Size (X)	**Frequency (f)**					
	I	II	III	IV	V	VI
10-20	4	14		39		
20-30	10		35		50	
30-40	**25**	40				63
40-50	15		38	60		
50-60	23	**45**			57	
60-70	22		34			37
70-80	12	15				
80-90	3					

Analysis Table

Column Number	**10-20**	**20-30**	**30-40**	**40-50**	**50-60**	**60-70**	**70-80**	**80-90**
I			√					
II					√	√		

III				√	√			
IV				√	√	√		
V					√	√	√	
VI			√	√	√			
Total	**-**	**-**	**2**	**3**	**5**	**3**	**1**	**-**

From the analysis table it is clear that:

1. Modal class is 50-60.
2. Frequency of this class is 23.

Here,
l_1=50, f_1=23, f_0=15, f_2=22, c=10

Putting the values in the given formula,we get:

Mode $(M_0) = l_1 + \frac{f_1 - f_0}{2f_1 - f_0 - f_2} \times c$
$Mo = 50 + \frac{23-15}{2\times23-15-22} \times 10$
$= 50 + \frac{8}{9} \times 10 = 58.89$

Therefore, the mode(Mo) of the given data is 58.89

17. In the given sum Equal Ranks or Tie in Ranks are assigned to Y. In such case the same ranks are assigned to two or more entities, then the ranks are assigned on an average basis. The ranks shall be calculated as: (5+6)/2 = 5.5 and so on.

    The formula to calculate the rank correlation coefficient when there is a tie in the ranks is:

$$r_k = 1 - \frac{6\left[\Sigma D^2 + \frac{1}{12}\left(m_1^3 - m_1\right) + \frac{1}{12}\left(m_2^3 - m_2\right)\right]}{n^3 - n}$$

Calculation of Rank Correlation

X	R_1	Y	R_2	$D = R_1 - R_2$	D^2

48	2	13	5.5	-3.5	12.25
33	4	13	5.5	-1.5	2.25
40	3	24	1	2.0	4.0
9	10	6	8.5	1.5	2.25
16	8	15	4	4.0	16.0
16	8	4	10	-2.0	4.0
65	1	20	2	-1.0	1.0
24	6	9	7	-1.0	1.0
16	8	6	8.5	-0.5	0.25
27	5	19	3	2.0	4.0
					ΣD^2 = 47

$\therefore r_k = 1 - \frac{6\left[\Sigma D^2 + \frac{1}{12}(m^3 - m) + \frac{1}{12}(m^3 - m) + \frac{1}{12}(m^3 - m)\right]}{n^3 - n}$

$= 1 - \frac{6(47+2+0.5+0.5)}{990} = 1 - \frac{6 \times 50}{990} = 1 - \frac{300}{990}$ = 1 - 0.303 = 0.697

It indicates that there is a moderate degree of positive correlation.

18. The opportunity cost is the damage to the local ecology or the investment in education and health services that have had to be sacrificed.

19. True

20. (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

21. (c) Oligopoly

    Explanation: In oligopoly the number of firms is so small that an action by any one firm is likely to affect the rival firms. So every firm keeps a close watch on the activities of the rival firms.

22. Marginal rate of transformation

OR

Greek

23. Truth

24. (a) It will be zero Explanation:

    MU & TU relationship ;

    i. MU is the rate of change of TU.
    ii. When the MU decreases, TU increases at decreasing rate.
    iii. When MU becomes zero, TU is maximum. It is a saturation point.
    iv. When MU becomes negative, TU declines

25. Market

26. (b) Both (a) and (b)
    Explanation: What to produce refers to a problem in which decision regarding which goods and services should be produced is to be taken. Since its resources are limited, every economy has to decide what commodities are to be produced and in what quantities. The guiding principle for an economy here is to allocate resources in such a way that gives maximum aggregate utility to the society.
27. (c) Functional relationship between cost and output
    Explanation: The relationship between cost and output is known as cost function. It is expressed as C = f(q)

    where C= Cost of production

    q= Quantity of output

    f = functional relationship

28. Demand curve under monopolistic competition and monopoly is downward sloping from left to right. This means that the demand curve under monopolistic competition is similar to a monopoly. But the main difference between monopoly and monopolistic competition is that under monopolistic competition, the demand curve is more elastic. It means that in response to change in price, change in demand is higher. It is because in a monopolistic competitive market, goods have close substitutes and in a monopoly market goods do not have close substitutes. Hence

consumer can easily substitute the good which has become expensive in case of monopolistic competition but not in monopoly.

OR

Features of monopolistic competition are as follows:

i. Product differentiation (it is a marketing process in which a product is differentiated from others).
ii. Control over price (monopolist can change the price of the product).
iii. The downward-sloping demand curve (a rational consumer will demand more of a commodity when its price falls).

29. Law of demand states the inverse relationship between price and quantity demanded, keeping other factors constant (ceteris paribus). It simply affirms that an increase in price will tend to reduce the quantity demanded and a fall in price will lead to an increase in the quantity demanded.

    The downward slope of the demand curve indicates that more is purchased in response to falling in price. This may be explained in terms of the following factors:

    i. **Law of Diminishing Marginal Utility** (DMU) According to this law, as consumption of a commodity increase, the utility from each successive unit goes on diminishing. Accordingly, for every additional unit to be purchased, the consumer is willing to pay the lesser and lesser price. This states that the demand curve is negatively sloped and hence it indicates the inverse relationship between price and quantity demanded of a commodity.
    ii. **Income effect** Change in its own price of a commodity causes a change in the real income of the consumer. With a fall in price, real income increases. Accordingly, demand for the commodity expands.
    iii. **Substitution effect** When the price of commodity X falls, it becomes cheaper in relation to commodity Y. Accordingly, X is substituted for Y and thus, demand for X commodity increases.
    iv. **Size of consumer group** When the price of a commodity falls, it attracts new buyers, who now can afford to buy it, leading to increasing demand.
    v. **Different uses** Many goods have alternative uses. For example, milk is used for

making curd, cheese and butter. If the price of milk reduces, it will be put to different uses. Accordingly, the demand for milk expands.

30. The law of constant returns also called the law of constant cost. It is said to operate when with the addition of successive units of one factor to a fixed amount of other factors, there arises a proportionate increase in total output. Constant returns to a factor occur when the additional application of the variable factor increases output only & at a constant rate. It is an ideal situation because production increases at a constant rate and at a constant cost. That is why this law is also known as the law of constant cost.

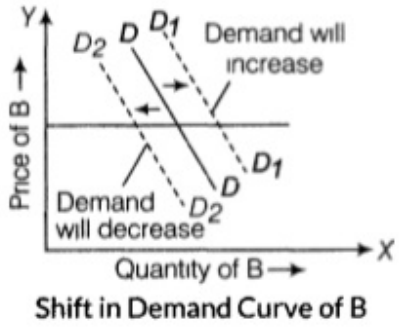
Units of Labour and Capital (Quintals)	Total Product (TP) (Quintals)	Marginal Product (MP) (Quintals)
1	10	10
2	20	10
3	30	10
4	40	10

It is clear from the schedule that with each additional dose of labour and capital, the total product increases at the constant rate of 10 Quintals.

31.
- **Complementary goods:**

i. Those goods which are used together for the fulfilment of a demand
ii. For Example: Car and Petrol.

- **Graphical representation:**



Shift in Demand Curve of B

- Change in price of A on demand for B can be studied with respect to the given

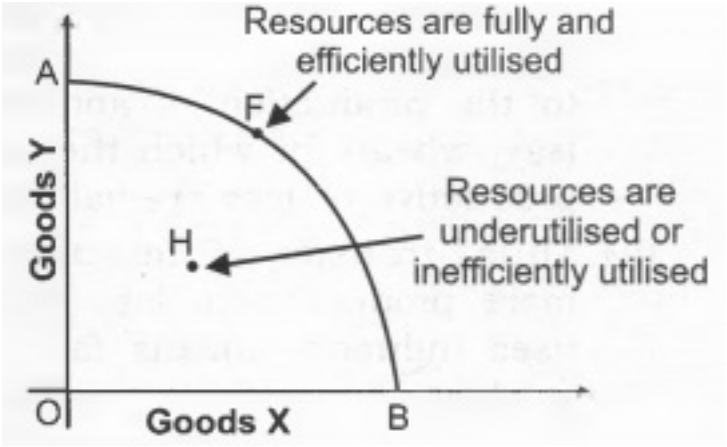
two conditions:

i. **Price of A rises** If the prince of A rises, then it will result in fall in the demand of A, and therefore demand for B will also fall. As a result, demand curve DD will shift leftwards to D_2D_2.

ii. **Price of A falls** If the price of A falls, then it will result in an increase in the demand of A, and therefore demand for B will also increase. As a result demand curve, DD will shift rightwards to D_1D_1.

OR

Production may or may not be on PPC depends upon whether the resources are utilized efficiently or inefficiently.



If the given resources are fully and efficiently utilized, then production will take place at any point on the curve AB, like point F.

If the resources are either underutilized or inefficiently utilized or both, then production will take place on any point below the curve AB, like point H.

32. The given statement is refuted. The Law of diminishing marginal utility will operate only when consumption is a continuous process. So there must be continuity in the consumption. If a break is necessary, then the time interval between the consumption of two units should be appropriately short. For example, if one sandwich is consumed in the morning and another in the afternoon, the second sandwich may provide equal or higher satisfaction as compared to the first one.

33. i. True, in a situation of increasing returns to a factor, Marginal Product tends to rise Accordingly, Total Product should be increasing at an increasing rate. Under

diminishing returns to a factor, Marginal Product tends to fall which implies that Total Product should be increasing at a diminishing rate. When Total product increase at increase rate , it is a situation of increasing return to a factor. When Total product increase at decreasing rate it is a situation of diminishing return to a factor.

ii. False, in a situation of diminishing returns to a factor, Marginal Product tends to fall which implies that Total Product should be increasing at a diminishing rate.

iii. False, Total Product will also increase when Marginal Product decreases In that case, Total Product increases at a diminishing rate , it is a situation of decreasing return to a factor.

34. i. **Barriers to entry of new firms:** Barriers to the entry of the firms can be natural like requirement of huge capital, or operating at the minimum average cost etc., which prevents entry of new firms in the industry. Under oligopoly, there are some restrictions on the entry of new firms into the oligopoly industry. Generally, there are patent rights or exclusive control over a technique or raw material which prevents other firms to enter into the market. These barriers make the entry of new firm in the market quite difficult, but not impossible, as in the case of monopoly.

The implication of this characteristic of oligopoly is that the existing firms do not constantly face the threat of new entrants in the market and they are able to earn abnormal profits even in the long-run.

ii. **Few or a few big sellers:** A few firms, large in size dominate the market for a commodity. A few or few big sellers has the implication that each big seller contributes a fairly large share of total output. This gives an individual seller the power of influencing the market price by changing its own output.

OR

Equilibrium is a situation where demand is equal to supply. If the price prevailing in the market is above the equilibrium price then the firms will be willing to supply more quantity of the commodity but the consumers will demand less quantity of the commodity because of higher price. Thus, it will distort the situation of an equilibrium in the market. There will be a situation of excess supply as shown in the following diagram.

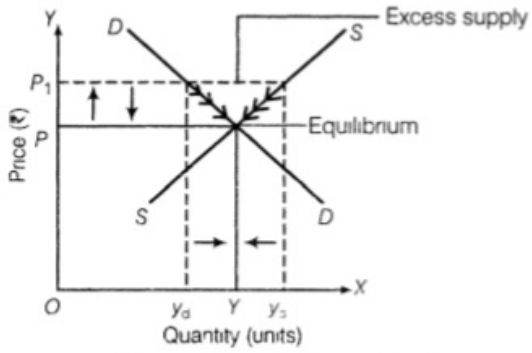


Diagram Showing Excess Supply

In such a case, competition among the sellers will pull down the market price to equilibrium price, by way of expansion in demand and contraction in supply. Excess supply in the market will lead to price competition among sellers. Sellers will reduce the price of their goods to attract consumers and this will result in an expansion of demand and contraction in supply, up to the level at which market demand equals market supply. In the above diagram, DD is the demand curve and SS is the supply curve. Equilibrium is attained at point E, where demand equals supply with OP as equilibrium price and OQ as equilibrium quantity. When the price is equal to p_1 i .e. greater than the equilibrium price p. There is excess supply as shown in the above diagram. After a competition among the sellers, there will be a reduction in the price and eventually, we will reach the equilibrium.