

YEAR 2020 EXAMINATION

ISC

Analysis of Pupil Performance

ECONOMICS



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This document of the Analysis of Pupils' Performance at the ISC Year 12 and ICSE Year 10 Examination is one of its kind. It has grown and evolved over the years to provide feedback to schools in terms of the strengths and weaknesses of the candidates in handling the examinations.

We commend the work of Mrs. Shilpi Gupta (Deputy Head) and the Research Development and Consultancy Division (RDCD) of the Council who have painstakingly prepared this analysis. We are grateful to the examiners who have contributed through their comments on the performance of the candidates under examination as well as for their suggestions to teachers and students for the effective transaction of the syllabus.

We hope the schools will find this document useful. We invite comments from schools on its utility and quality.

November 2020

**Gerry Arathoon
Chief Executive & Secretary**

The CISCE has been involved in the preparation of the ICSE and ISC Analysis of Pupil Performance documents since the year 1994. Over these years, these documents have facilitated the teaching-learning process by providing subject/ paper wise feedback to teachers regarding performance of students at the ICSE and ISC Examinations. With the aim of ensuring wider accessibility to all stakeholders, from the year 2014, the ICSE and the ISC documents have been made available on the CISCE website www.cisce.org.

The documents for the ICSE and ISC Examination Year 2020 include a detailed qualitative analysis of the performance of students in different subjects. The purpose of this analysis is to provide insights into how candidates have performed in individual questions set in the question paper. This section is based on inputs provided by examiners from examination centers across the country. It comprises of question wise feedback on the performance of candidates in the form of *Comments of Examiners* on the common errors made by candidates along with *Suggestions for Teachers* to rectify/ reduce these errors. The *Marking Scheme* for each question has also been provided to help teachers understand the criteria used for marking. Topics in the question paper that were generally found to be difficult or confusing by candidates, have also been listed down, along with general suggestions for candidates on how to prepare for the examination/ perform better in the examination.

The Analysis of Pupil Performance document for ICSE for the Examination Year 2020 covers the following subjects/papers: English (English Language, Literature in English), History and Civics, Mathematics, Physics, Chemistry, Commercial Studies and Environmental Science.

Subjects covered in the ISC Analysis of Pupil Performance document for the Year 2020 include English (English Language and Literature in English), Hindi, Physics, Chemistry, Mathematics, Computer Science, History, Political Science, Economics, Commerce, Accounts, and Environmental Science.

I would like to acknowledge the contribution of all the ICSE and the ISC examiners who have been an integral part of this exercise, whose valuable inputs have helped put this document together.

I would also like to thank the RDCD team of Dr. M.K. Gandhi, Dr. Manika Sharma, Mrs. Roshni George and Ms. Mansi Guleria, who have done a commendable job in preparing this document.

We hope that this document will enable teachers to guide their students more effectively and comprehensively so that students prepare for the ICSE/ ISC Examinations, with a better understanding of what is required from them.

November 2020

Shilpi Gupta
Deputy Head - RDCD

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PART I (20 Marks)

Answer all questions.

Question 1

[10x2]

Answer briefly *each* of the following questions (i) to (x):

- (i) What is *production function*?
- (ii) Explain the meaning of *income effect*.
- (iii) What is *progressive tax*?
- (iv) State the law of Diminishing Marginal Utility. Mention *any two* assumptions of the law.
- (v) Differentiate between *autonomous capital flow* and *accommodating capital flow*.
- (vi) What is meant by MPS? How is MPS related to investment multiplier?
- (vii) Briefly explain *any one* primary function of money.
- (viii) Show with the help of a diagram, a situation when change in supply will keep the equilibrium quantity of the commodity unchanged.
- (ix) What is meant by *selling cost*? Name *one* market where selling cost is applicable.
- (x) What is meant by *operating surplus*?

Comments of Examiners	Suggestions for Teachers
<p>(i) Many candidates did not write the terms 'functional' and 'best production' technique while defining production function. Some candidates were unable to establish the functional relationship between input & output.</p> <p>(ii) Majority of the candidates neither mentioned <i>real income</i> nor <i>purchasing power</i>. Most candidates only wrote about real income without relating it to demand. Many candidates thought that the income effect was an increase in the income, hence wrote about the effect of change in income on demand instead of on <i>real income</i>. The effect on demand due to change in real income resulting from change in price was not mentioned by the candidates.</p>	<ul style="list-style-type: none">▪ <i>Make the students understand the difference between production (as process) and production function (Input- Output relationship). The significance of the term 'functional/ mathematical/ technological' should be made clear to the students. They should also ensure that the students write $Q=f(f_1, f_2, \dots, f_n)$.</i>▪ <i>Ensure that students understand the difference between 'real income' and 'income'. Real income is purchasing power and income is merely money income which is not the true</i>

- (iii) Majority of the candidates, instead of writing that it is the *rate* of tax which increases with the increase in the taxpayer's income, wrote that *tax* increases with the increase in taxpayer's income. Many candidates did not know the difference between progressive and proportional tax structures. Some candidates tried to explain the meaning of progressive tax with the help of examples which were actually meant for proportional tax.
- (iv) Majority of the candidates while explaining the Law of DMU, instead of stating that it is *marginal utility / additional utility / additional benefit* which decreases, wrote that utility decreases with increase in consumption / with consumption of successive units of commodity / with consumption of additional units of a commodity. They did not realize that this implies a decline in total utility. Most candidates did not write the words *additional units* while explaining the meaning of the Law. Many candidates wrote that *money income remains constant* as an assumption of the law while this assumption is not related with the Law of DMU.
- (v) Majority of the candidates did not write the key words *normal economic consideration* and *to bring the equilibrium*. Some candidates wrote about surplus and deficit.
- (vi) Majority of the candidates got confused between the definitions of MPS and APS. Most candidates defined MPS as *change in saving for change in income*. This was a very vague definition of MPS and had nothing to do with its concept. The answer expected from the candidates was that *MPS is the ratio of change in saving to change in income*.
- (vii) Most candidates gave an incomplete explanation of the primary function of money. Many candidates wrote only the caption and did not explain the point. Some candidates got confused between *measure of value* and *store of value* which is the secondary function of money.

indicator of purchasing power. It should be made clear to the students that demand depends on purchasing power and under no circumstances do changes in income become income effect. Income effect is the reason behind the law of demand/ negatively sloped demand curve where income cannot change because it is one of the ceteris paribus assumptions. In order to bring out the meaning of real income, it is advisable for the teachers to teach this topic with the help of examples.

- *Explain progressive tax by using the words 'tax rate' i.e. tax rate increases taxable amount increases. Tell students the difference between increase in tax and increase in the rate of tax. Also explain the difference between proportional tax and progressive tax with the help of a numerical example.*
- *Ask students to write 'other things being constant' and also 'additional units' while explaining the meaning of Law of DMU. Along with this, the assumptions should also be taught in detail. It should be emphasized that the Law of DMU cannot be written in the form of an example or table which is used to only explain the concept.*
- *Tell students that autonomous capital flow is because of normal economic considerations. Accommodating capital flow is made to bring the balance of payment into equilibrium. Emphasize that the difference between two concepts*

- (viii) Common errors made by most of the candidates were:
- Drawing a perfectly elastic demand curve.
 - Showing a proportional change in demand.
 - Showing either an increase or decrease in supply and not both.
 - Not taking the perfectly inelastic curve straight up and not labelling it.
 - Either showing simultaneous shifting of demand and supply curves, or perfectly inelastic supply curve.
 - Drawing only three supply curves and three prices on these supply curves showing the same quantity, but not drawing the vertical demand curve and not mentioning the condition *perfectly inelastic demand*.
- (ix) Many candidates had no idea about selling cost. They simply wrote that it is the price of selling the commodity without mentioning about sales promotion, advertising cost, door to door campaign, etc. Some candidates expressed selling cost as a factor payment cost. A few candidates were not able to explain it with the help of an example. There were candidates who identified the market form as a Monopoly instead of Monopolistic.
- (x) Most candidates did not write *entrepreneurship* in their answers. Several candidates did not mention the components of operating surplus.

should bring out the meaning clearly. Advice students against writing irrelevant points.

- *Train students to write the full form of MPS, its definition and its formula even if not asked for in the question. Explain that MPS is the ratio of change in savings to change in income. They can explain the relationship between MPS and investment multiplier through $K = 1/1 - MPC$ or $1/MPS$.*
- *Teach students the topic on functions of money with the help of a flow chart with various heads and the items put under the specific heads. This will enable the students to retain the concept better. Explain 'medium of exchange' as having general purchasing power and 'measure of value' as a unit of measurement while explaining the primary functions of money*
- *Give adequate practice to students to draw the diagrams so that they are able to make out the difference between a price line and a line joining the equilibrium points with perfectly elastic demand or supply curves and same for the quantity line with perfectly inelastic demand and supply curves. Well labelled diagrams should be insisted upon. Also tell students to first draw the perfectly inelastic demand curve and then the supply curves showing equilibrium, quantity remaining unchanged. Supply curves should also show the increase and decrease in supply.*
- *Explain to the students that the selling cost is incurred to promote sales through newspapers, TV commercials etc. This is applicable in monopolistic competitive firm or oligopoly.*

- *At the start of any topic, ensure that the meaning of the different terms is properly explained and ensure that the meaning and significance of each and every term in the definition is clear to the students. Concepts like, what is the income from property and entrepreneurship should be emphasized upon. The components of operating surplus should be written on the board and students made to learn the number of items coming under them.*

MARKING SCHEME

Question 1

(i)	<p>Production function: It is a <u>functional relationship</u> between output and inputs. $Q = f(\text{inputs})$ $Q_x = f(f_1, f_2, f_3, \dots)$ or A production function shows the maximum quantity of a commodity that can be produced per unit of time with the given amount of inputs when the best production technique available is used.</p>
(ii)	<p>Income effect: A change in demand on account of a change in real income resulting from a change in price of a commodity is known as <u>income effect</u>.</p> <p style="text-align: center;">OR</p> <p>A fall in price level which leads to an increase in the purchasing power of the given money income is known as income effect.</p>
(iii)	<p>Progressive tax: It is a tax in which the average tax rate increases as taxable amount increases.</p> <p style="text-align: center;">OR</p> <p>It is when the rate of taxation increases as the taxpayer's income increases.</p>
(iv)	<p>Law of diminishing marginal utility: The law states that as the amount consumed of a commodity increases, the other things being constant, the utility derived by the consumer from the additional units i.e., marginal utility goes on decreasing.</p> <p><u>Two</u> assumptions of the law.</p> <ul style="list-style-type: none"> • All units of the commodity must be identical. • Unit of the good must be standard. • There should be no change in taste during the process of consumption.

- There must be continuity in consumption.
- There should be no change in the price of substitute goods.
- Utility is measurable.
- Consumer is rational.
- MU of money is assumed to be constant.

(any two)

(v)

Autonomous capital flow	Accommodating capital flow
This flow takes place because of normal economic considerations like earning profits, dividend, interest, etc.	This flow has to be made specifically to bring the balance of payment into equilibrium. Example: if there is deficit in the current account it can be settled by an accommodating capital inflow.

(vi)

MPS = Marginal propensity to save

It is the ratio of change in saving to change in income $\frac{\Delta S}{\Delta y}$

MPS and investment multiplier are inversely related to each other.

$$K = \frac{1}{1-MPC} \text{ or } \frac{1}{MPS}$$

(vii)

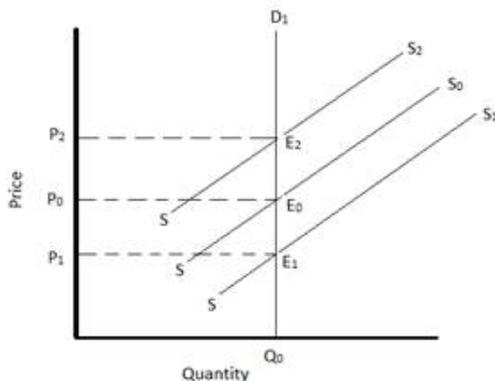
Primary functions of money:

- Medium of exchange: money commands general purchasing power. It is generally and widely accepted as a medium for purchase and sale.
- Measure of value: money serves as a unit of measurement in terms of which the values of all goods and services are measured and expressed.

(any one)

(viii)

Diagram showing change in supply is not affecting equilibrium quantity.



Condition: Perfectly inelastic demand

(ix)	Selling cost: It is the expenditure incurred by the firm to promote the sale of its product through various sales promotion measures such as advertisement in newspapers, TV commercials etc. It is applicable to a monopolistically competitive firm or to an oligopoly firm.
(x)	Operating surplus is the income from property and entrepreneurship OR It is the income earned from the ownership and control of capital. (Rent + Interest + Royalties + dividends + undistributed profits before corporation taxes + profits of Government ent.)

PART II (60 Marks)

Answer any five questions.

Question 2

- (a) Explain the geometric method of calculating elasticity of supply. [3]
- (b) Explain the concept of *Diminishing Marginal Rate of substitution* and show how it affects the indifference curve. [3]
- (c) The marginal utility schedule of a rational consumer is given below. If the price of a commodity is ₹ 35, explain with the help of a diagram, how the consumer attains equilibrium. [6]

Number of the commodity bought	1	2	3	4	5
MU	50	45	40	35	30

Comments of Examiners

- (a) Most of the candidates did not show the derivation of the price elasticity of supply. Many candidates did not label the diagrams. A few candidates got confused between > (greater) and < (less) symbols.
- (b) Most candidates wrote the definition of MRS instead of explaining the concept of *Diminishing Marginal Rate of Substitution* which not only made their answer incomplete but also incorrect as they were unable to show how *Diminishing MRS* affects the indifference curve. Many candidates simply drew an indifference curve instead of showing the effect of DMRS on indifference curve. Candidates also did not draw a table to show the DMRS. A large number of candidates, instead of *convexity*, accorded the *negative slope* of the indifference curve to DMRS. In many answer

Suggestions for Teachers

- *Insist that students write the formula to measure the elasticity of supply and that they draw the graph for each case. Students should be told that they have to draw the supply curve and then extend the curve, so that it touches X/Y axis. They should be taught to mark a point on the supply curve, draw a perpendicular from that point on X axis and Y axis and then use the formula. For the benefit of students, teach by drawing different diagrams rather than using only one diagram.*
- *The difference between MRS and DMRS should be made clear to*

scripts, diagrams were not properly scaled to show DMRS and hence the convex IC.

- (c) Majority of the candidates did not write the equilibrium condition. Most candidates did not draw the diagrams as per the schedule. A large number of candidates only wrote that $MU=P$ and at 4 units. They did not write what happens when $MU>P$ and $MU<P$. Many candidates did not extend the price line beyond the equilibrium point.

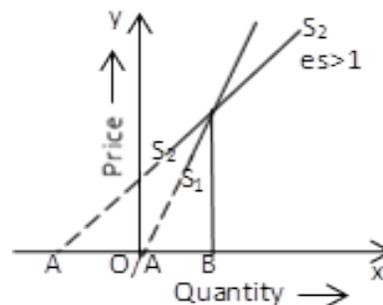
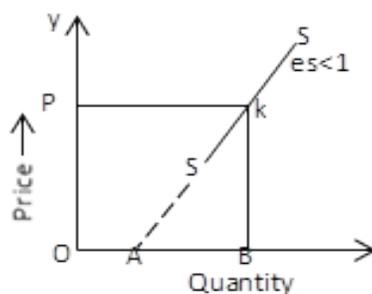
students. Students should be told that effect of DMRS can be shown with the help of both, a schedule and a curve. They should be told that DMRS is responsible for the convexity of the indifference curve. For questions like this it is advisable that students are taught to draw a table and then write the explanation. They should be trained to, first derive the DMRS with the help of a table and then show the ratio of substitution.

- Tell students to write the statement of the consumer's equilibrium, condition of the equilibrium, and then draw the graph and the schedule. They need to be told that if the schedule is given then the graph should be based on it and three points to be explained like: What happens when $MU > P$, $MU < P$ and $MU = P$.

MARKING SCHEME

Question 2

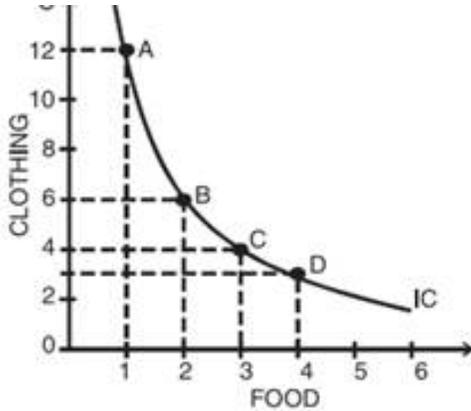
- (a) To measure price elasticity of supply at point k on SS curve, extend the SS curve, downward to meet the x-axis and apply the formulae $\frac{AB}{OB}$.
- (i) At pt k on the SS curve, $\frac{AB}{OB} < 1$, therefore $es < 1$
- (ii) At pt k on S_1 , S_1 curve, $\frac{AB}{OB} = 1$ therefore, $es = 1$
- (iii) At point k on S_2 , S_2 curve $\frac{AB}{OB} > 1$, therefore, $es > 1$



3 diagrams for 3 cases

(b) Diminishing Marginal Rate of Substitution:

- DMRS (X for Y) shows as consumer consumes more of X for Y, he will be willing to sacrifice lesser quantity of Y with every unit increase in consumption of X.
- IC curve is convex due to DMRS.



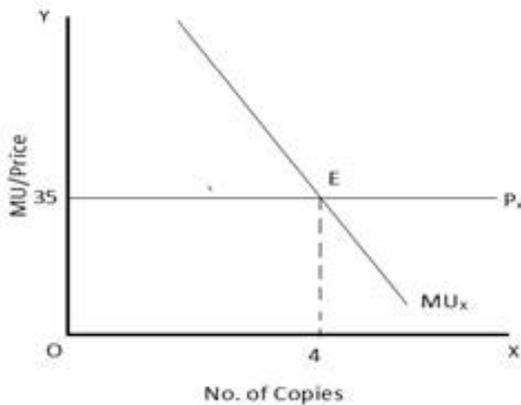
Units of Food	Units of Clothing	DMRS
1	12	--
2	6	6:1
3	4	2:1
4	3	1:1

As consumer moves from points A to D for every 1 unit increase in consumption of X lesser and lesser amount of Y is sacrificed.

(Concept of DMRS may also be given with the help of a schedule)

(Concept, Schedule and Relevance to be given)

(c) A utility maximizing consumer will be in equilibrium when he purchases that much quantity of the commodity where the MU of the commodity equals its price.



At E, equilibrium condition is satisfied i.e., $MU_X = P_X$.

Diagram should be as per the given schedule.

- If $MU_X > P_X$, i.e., before E, consumer gains more utility than price he pays. So, he continues consumption.
- If $MU_X < P_X$, i.e., beyond E, he has to pay more than his gain in utility, therefore he reduces his consumption.

So, equilibrium is attained at E where $MU_X = P_X$

Question 3

- (a) Explain *any two* reasons for the supply curve to be positively sloped. [3]
- (b) Briefly explain how equilibrium price is determined with the help of demand and supply curves. [3]
- (c) Discuss the *three* stages of the Law of Variable Proportions with the help of diagrams. [6]
In which stage will a rational producer like to operate?

Comments of Examiners	Suggestions for Teachers
<p>(a) Most of the candidates could not relate profit with supply. Many candidates wrote the positive relation between price and supply but did not write the reason behind this positive relation. A large number of candidates wrote points such as, change in input prices, use of advanced technology, etc., which actually are the reasons for shift in supply.</p> <p>(b) Most of the candidates did not write the definition of equilibrium. In many answer scripts the diagrams were: incorrect / not properly labelled/ direction of arrows not shown/ excess demand and excess supply not shown/ demand and supply curves wrongly drawn. Some candidates, who drew the correct diagram to show equilibrium price, did not discuss the manner in which the equilibrium was achieved.</p> <p>(c) The common errors made by the candidates were:</p> <ul style="list-style-type: none"> – Not having written the statement of the law. – Either not indicating the stages in the diagram or wrongly indicating them, particularly the first stage which ended at the <i>point of inflection</i> (where MP is maximum). – Not showing the proper point of intersection of MP and AP curves. – Not having written about AP while identifying the zones of production (It is not possible to identify the zones without AP) – Writing the explanation based on an incorrect diagram. – Drawing the correct diagram, but not explaining the behaviour of TP, AP and MP for all three stages. 	<ul style="list-style-type: none"> ▪ <i>Explain to students that the reasons for positive slope of supply curve is actually the explanation of law of supply. Therefore, except price, no other factors affecting supply can change.</i> ▪ <i>Teach students how to write 'Equilibrium'. Teach with the help of a schedule and a graph, separately showing the excess demand and excess supply. Use the demand curve and supply curve to attain the equilibrium price. On the demand side price is shown because of marginal utility and on supply side price is shown because of marginal cost. The area of excess supply and excess demand should be shown in the diagram and the manner in which equilibrium is achieved.</i> ▪ <i>Tell students that explanation of any theory without its statement, is incomplete. The Law must be stated for any question relating to it. Zones of production must be taught showing where it starts and where it ends, especially with the AP curve. For adequate practice, students should be made to draw the diagram repeatedly. Relationship between TP, AP and MP must be taught with the help of a table which can be explained in writing. Teachers should teach the statement and the diagram for Law of Variable Proportions. The correct area on the</i>

- Discussing the relation between TP - MP and AP -MP.
- Labelling TP, AP and MP curves as TC, AC and MC or TR, AR and MR. and then basing the explanation on the incorrect curves.

diagram where the three stages start and end should also be taught. Ensure that students understand the behaviour of TP, AP and MP under increasing returns, diminishing returns and negative returns stages. They should be taught that law deals with the behaviour of TP, AP and MP. Explain to students that a rational producer will operate in stage II.

MARKING SCHEME

Question 3

(a) Reasons for the positive slope of the supply curve:

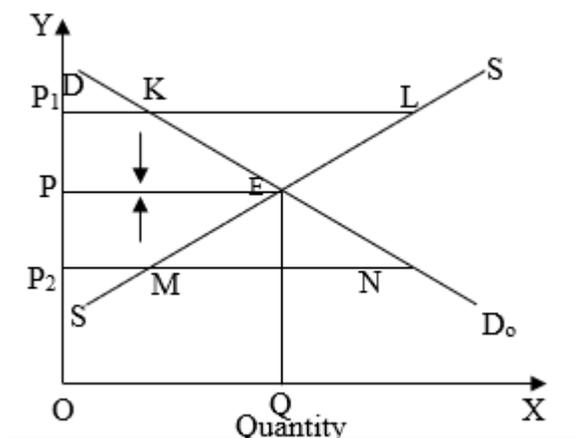
- Higher the price higher the profits
- Increase in the marginal cost - higher price covers higher cost
- Higher price motivates other producers leads to increase in supply.

(any two to be explained)

(b) Equilibrium price is the price at which quantity demanded of a commodity equals quantity supplied.

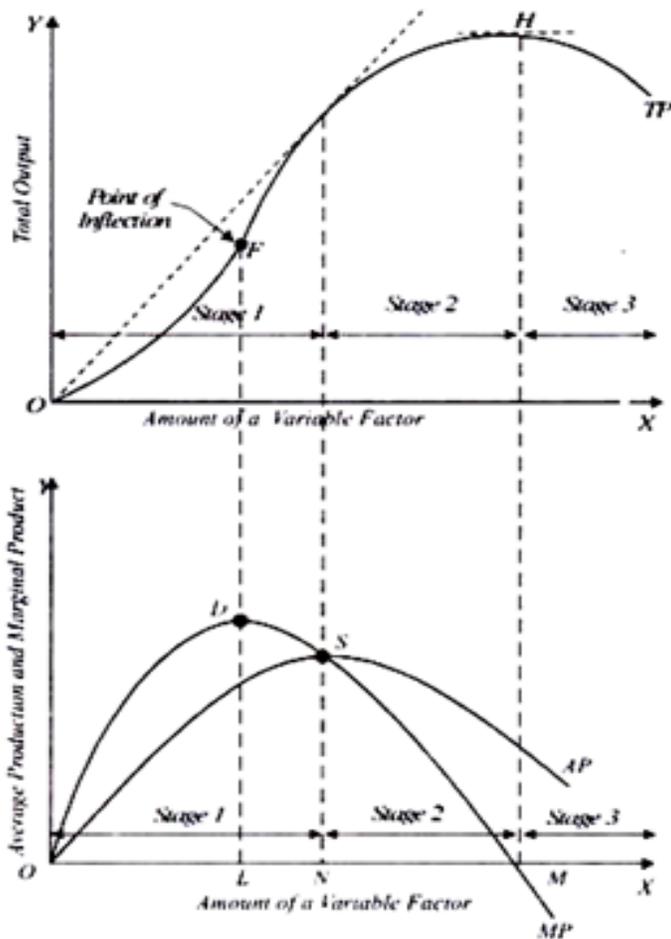
Demand side - a consumer pays a price for the commodity where it equals his marginal utility.

Supply side - the supplier charges a price which covers his marginal cost.



Excess demand and
Excess supply.

(c) The Law of Variable Proportion states that as more and more units of a variable factor are applied to the given quantity of fixed factor total product may increase at an increasing rate initially but eventually it will increase at a diminishing rate.



(Diagram, explanation)

Stage	TP	MP	AP
I (increasing return to variable factor)	Initially increase at an increasing rate and then after F at a decreasing rate.	First increases, reaches maximum at point of inflection then starts decreasing.	Increases and reaches maximum. $AP < MP$
II (diminishing return to a variable factor)	Continues to increase at a diminishing rate and eventually reaches maximum.	Continues to decrease and eventually becomes zero (when TP reaches maximum).	From maximum it begins to decrease. $AP > MP$
III (negative returns)	Diminishes	Is negative.	Continues to decrease but is always positive.

(Table format not mandatory)

A rational producer will produce in stage II.

Question 4

- (a) When price of commodity X changes from ₹ 40 per unit to ₹ 20 per unit, its demand increases by 20 units. If price elasticity of demand is 0.5, calculate the initial and the final quantity demand of commodity X. [3]
- (b) Explain with the help of a diagram, the relationship between MR and TR under imperfect competition. [3]
- (c) Using diagrams, explain the concepts of: [6]
- (i) Shut-down point
- (ii) Break-even point of a firm in perfect competition under short run.

Comments of Examiners	Suggestions for Teachers
<p>(a) Most candidates calculated the initial quantity but did not calculate the final quantity demanded. A common error made by many candidates was that they calculated the final quantity as 60 instead of 100. This error probably occurred because they did not notice that price had fallen in the question and followed the method of subtraction instead of addition of 20 to initial quantity 80.</p> <p>(b) The common errors made by the candidates were:</p> <ul style="list-style-type: none">– Having drawn the incorrect diagram for MR and TR with no correspondence being established between maximum point of TR curve and point of intersection of MR curve with the horizontal or quantity axis, i.e. zero MR.– Drawing diagrams with TR curve and MR curve side by side and hence no correspondence.– Giving an incomplete presentation of one of the relations between TR and MR by only writing that <i>when TR increases (at diminishing rate), MR decreases</i>. They should have completed the sentence with incorporation of '<i>MR remains positive</i>'.– Having written MR in place of TR and vice-versa.	<ul style="list-style-type: none">▪ <i>In order to solve the numericals on elasticity of demand, tell students to first write the formula and then substitute the values in the formula. Teach them to first calculate the initial quantity and then the final quantity. Emphasize that according to the law of demand, if price falls then demand will increase and so change in quantity demanded has to be added to the initial quantity.</i>▪ <i>Explain to students that since a diagram is the basis of most of the answers in microeconomics, it is imperative for it to be meaningful. Also explain that even when MR is falling throughout, its sign (positive/zero/negative) varies with the behaviour of TR. Adequate practice should be given to the students in drawing the diagrams.</i>▪ <i>Explain through diagrams that Shut-down point and Break-even point are different equilibrium situations of a firm and the diagrams should be completed by establishing equilibrium. Draw separate diagrams</i>

- (c) (i) The common errors made by the candidates while explaining the concept of Shut-down point were:
- Using the TR-TC approach which is incorrect for this concept.
 - Not showing the shut-down point at the minimum point of AVC curve.
 - Drawing the AR=MR curve as a tangent of AVC curve at its minimum point but not drawing the MC curve and so no equilibrium being established.
 - Not defining shut down point. as *an equilibrium point which covers only variable cost / where AR=AVC* but only mentioning, where *firm ceases to operate*, which made the answer incomplete.
- (ii) Common errors made by the candidates while explaining the concept of Break-even point were:
1. Using the TR-TC approach which was non-acceptable in this question.
 2. Not showing the break-even point at the minimum point of AC curve.
 3. Having drawn the AR=MR curve as a tangent of AC curve at its minimum point but no MC curve being drawn and so no equilibrium being established.
 4. Simply defining the break-even point as a situation where either TR=TC or a situation of no profit, no loss without mentioning its position in the diagram. This made the description incomplete

for losses and shutdown point and insist that the students always write the conditions of equilibrium.

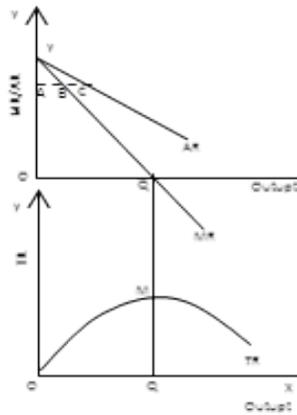
MARKING SCHEME

Question 4

(a)	$P_1 = 40 \quad P_2 = 20 \quad \Delta P = 20 - 40 = -20$ $Q_1 = x \quad Q_2 = x + 20 \quad \Delta Q = 20 \quad e_d = 0.5$ $e_d = (-) \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$ $0.5 = (-) \frac{20}{-20} \times \frac{40}{x}$
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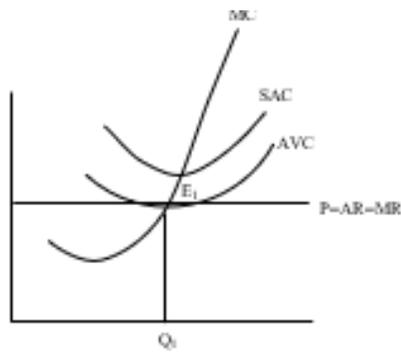
$0.5x = 40$
 $x = 80 = Q_1$ (initial quantity)
 $Q_2 = 80 + 20 = 100$ (final quantity)

- (b) The relationship between marginal revenue and total revenue can be explained as follows:
- When MR is positive, TR increases with an increase in output.
 - When MR is zero, TR is maximum
 - When MR becomes negative; TR falls with an increase in output.



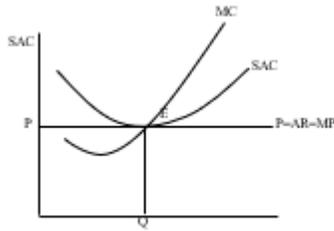
(Diagram and explanation.)

- (c) (i)



Shut down point, $P/AR = AVC$

(ii)



Break-even point, $AR/P = SAC$

(Meaning, diagram, explanation can be explained using one diagram.)

Question 5

- (a) Give reasons for the following: [3]
- (i) TC and TVC curves do not start from the same point.
- (ii) ATC and AVC curves do not touch each other.
- (b) Explain *any two* factors affecting the demand of a commodity, other than its price. [3]
- (c) Differentiate between *perfectly competitive market* and *monopolistically competitive market* on the basis of the following: [6]
- (i) Nature of the product
- (ii) Price influence
- (iii) Relationship of AR and MR
- (iv) Demand curve

Comments of Examiners

- (a) (i) Many candidates wrote, $TC = TFC + TVC$ as the reason. They did not write the reason of TC and TVC curves starting from different points. A few candidates wrote that *TC starts from the point where TFC starts* but hardly any candidate mentioned the starting point of TVC, thereby making the answer incomplete.
- (ii) Majority of the candidates did not write *AFC is not equal to Zero* which is the main logic behind the statement.
- (b) Common errors made by most of the candidates in attempting this part were:

Suggestions for Teachers

- Teach students that *TC starts from the point where TFC starts because at zero output TVC is zero and $TC = TFC$* . Tell them that *AFC can never be zero because TFC is always positive and $AFC = TFC/Q$* . The relationship with cost curves has to be explained with relevant examples of types of cost in the production process. Relationship between *TC, TFC, TVC and AC, AFC and AVC* should be given in the form of a table. The gap between *AC and AVC* should

- Writing about *own price* of the commodity as a determinant which was irrelevant as per the question.
- Not mentioning all the sub-cases, i.e. effect of change in income on demand for inferior and inexpensive necessary goods while writing about *income* and the *prices of the related goods* as determinants. Effect of prices of both substitute goods and complementary goods on the demand for a particular commodity was not explained (in case of *prices of related goods* as determinant).

(c) Majority of the candidates did not explain the differences on the basis of the given parameters. Most candidates wrote the differences between the market forms in one or two words.

Many candidates did not write the implications of each point. Key words were missing in a large number of answer scripts. Candidates wrote, *in perfect competition market a seller cannot influence price and in monopolistic competition market he can influence price* but the reason for this was not explained by them. Very few candidates could differentiate on the basis of the *demand curve*.

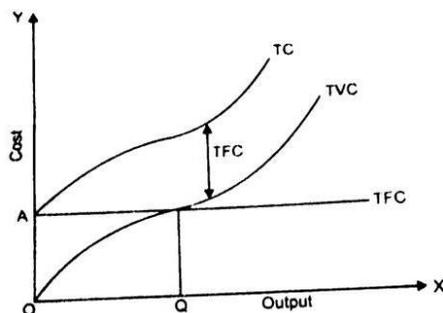
be shown to be decreasing and the reason for the same should be explained.

- *Income of the consumer as a factor affecting demand should be explained in terms of normal goods, inferior goods and inexpensive commodities. The price of related goods should be explained in terms of substitute and complementary goods.*
- *Explain the nature of the product with reference to physical and environmental factors. In case of product differentiation under monopolistic competition relevant examples could be cited. While explaining price influence, stress on the key words. AR and MR curves under both the market forms should be explained with the help of diagrams. The behaviour of the demand curve should be explained through diagrams.*
- *Sufficient practice should be given to the students to draw diagrams. They should be discouraged from writing one-word answers, especially the ones where differences have to be written. Ask students to read the question carefully and answer accordingly.*

MARKING SCHEME

Question 5

(a) (i)



(diagram not needed)

		<p>TVC starts from origin as at zero level of output, there is no variable cost incurred. But $TC = TVC + TFC$.</p> <p>At output = 0, TC will still have the total fixed cost, so TC starts from A (where TFC also starts).</p>																									
	(ii)	$ATC - AVC = AFC$ and $AFC = \frac{TFC}{output}$ AFC reduces, but $AFC \neq 0$																									
(b)	<p>Factors affecting the demand of a commodity, other than its price:</p> <p>(1) Price of related goods.</p> <ul style="list-style-type: none"> • Substitute goods • Complementary goods <p>(2) Income of the consumer.</p> <ul style="list-style-type: none"> • Normal good • Inferior good • Inexpensive <p>(3) Tastes and Preferences.</p> <p>(4) Composition of population <i>(Any two to be explained)</i></p>																										
(c)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 20%; text-align: center;">Basis</th> <th style="width: 40%; text-align: center;">Perfectly competitive market</th> <th style="width: 30%; text-align: center;">Monopolistically competitive market</th> </tr> </thead> <tbody> <tr> <td>(i)</td> <td>Nature of the product</td> <td>Homogeneous</td> <td>Differentiated</td> </tr> <tr> <td>(ii)</td> <td>Price influence</td> <td>Price taker. As large no. of sellers in the market, a single seller cannot influence the price.</td> <td>Price maker. Many sellers, but as goods are differentiated some amount of control over the price.</td> </tr> <tr> <td>(iii)</td> <td>Relationship of AR and MR</td> <td>$AR = MR$ (as price remains same).</td> <td>$AR > MR$ (as seller reduces price in order to sell more units in the market.)</td> </tr> <tr> <td>(iv)</td> <td>Demand curve</td> <td>Perfectly elastic demand. Demand curve is parallel to x axis. (large no. of buyers and sellers selling homogeneous goods)</td> <td>Relatively inelastic/elastic demand. Demand curve is downward sloping. (many sellers selling differentiated goods)</td> </tr> <tr> <td colspan="4" style="text-align: right;"><i>(Points to be explained)</i></td> </tr> </tbody> </table>				Basis	Perfectly competitive market	Monopolistically competitive market	(i)	Nature of the product	Homogeneous	Differentiated	(ii)	Price influence	Price taker. As large no. of sellers in the market, a single seller cannot influence the price.	Price maker. Many sellers, but as goods are differentiated some amount of control over the price.	(iii)	Relationship of AR and MR	$AR = MR$ (as price remains same).	$AR > MR$ (as seller reduces price in order to sell more units in the market.)	(iv)	Demand curve	Perfectly elastic demand. Demand curve is parallel to x axis. (large no. of buyers and sellers selling homogeneous goods)	Relatively inelastic/elastic demand. Demand curve is downward sloping. (many sellers selling differentiated goods)	<i>(Points to be explained)</i>			
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Question 6

- (a) Discuss *two* methods of Redemption of *public debt* in an economy. [3]
- (b) How is *fiscal deficit* different from *primary deficit*? Explain *one* implication of fiscal deficit. [3]
- (c) Discuss *any four* causes of adverse Balance of Payments of a country. [6]

Comments of Examiners	Suggestions for Teachers
<p>(a) For <i>debt conversion</i>, most of the candidates only mentioned that the old debt was converted into a new debt. The explanation of <i>sinking fund</i> was not up to the mark in a large number of answer scripts. In case of <i>terminal annuities</i>, candidates did not mention the regular instalment basis.</p> <p>Many candidates still wrote <i>repudiation</i> as a valid point for redemption of public debt which is now redundant. Some candidates were confused while answering <i>debt conversion</i> and <i>statutory reduction rate of interest</i>.</p> <p>(b) While explaining fiscal deficit, most candidates did not mention <i>excluding borrowing</i>. Instead of <i>total budgetary expenditure</i>, many candidates wrote <i>total expenditure</i>. Although the answers for <i>primary deficit</i> were largely correct, the explanation for the implications of primary deficit was incorrect in many answer scripts.</p> <p>(c) While explaining different points or causes of adverse balance of payment, most candidates did not explain the effect of that factor on export or import. They merely stated <i>fall in export</i> and <i>rise in import</i> as a reason of adverse BOP which is a vague point. Many candidates got confused with the remedies of adverse BOP.</p> <p>Some candidates only wrote the captions, while a few others wrote vague implications of the captions.</p>	<ul style="list-style-type: none"> ▪ Teach all the relevant methods of redemption of public debt. All the captions with implications should be properly and clearly explained to students. Make it very clear to the students that repudiation is simply refusing to repay the debt and not a method of debt repayment. ▪ Explain fiscal deficit and primary deficit to the students by giving examples. Explain the logic behind excluding borrowing from the fiscal deficit. The relevant differences between primary deficit and fiscal deficit which should be discussed with the students are: (i) A government creates a fiscal deficit by spending more money than it takes in from taxes and other revenues excluding debt. (ii) The gap between income and spending is closed by government borrowing. (iii) Primary deficit is defined as fiscal deficit of current year minus interest payments on previous borrowings. In other words, whereas fiscal deficit indicates borrowing requirement inclusive of interest payment, primary deficit indicates borrowing requirement exclusive of interest payment (i.e., amount of loan). ▪ Ask students to explain the effect of a particular situation on the imports and exports and how it creates an

adverse situation in the balance of payment. Stress upon the fact that the captions need to be accompanied with explanations.

MARKING SCHEME

Question 6

(a)	<p>Methods of Redemption of public debt in an economy:</p> <ul style="list-style-type: none"> • Refunding • Debt conversion • Budgetary surplus • Terminal annuities • Sinking fund • Statutory reduction in the rate of interest • Capital levy • Export surplus <p style="text-align: right;"><i>(Any two)</i></p>
(b)	<p>Difference between <i>fiscal deficit</i> and <i>primary deficit</i>:</p> <p>Fiscal deficit = Total budgetary expenditure – Revenue receipts – Capital receipts (excluding borrowing)</p> <p>Primary deficit = Fiscal deficit – Interest payments.</p> <p>Implications of fiscal deficit:</p> <ul style="list-style-type: none"> • Key indicator of budgetary deficit. It is a comprehensive measure of fiscal imbalance. • Shows how much government has to borrow. • High fiscal deficit may lead to wasteful and unnecessary expenditure. • Large fiscal deficit may lead to inflationary pressure. <p style="text-align: right;"><i>(Any one)</i></p>
(c)	<p>Causes of adverse Balance of Payments of a country:</p> <ul style="list-style-type: none"> • Fall in foreign demand. • Inflationary pressure in the economy. • Developmental expenditure. • Increase in cost structure of export industries. • Decrease in supply. • Appreciation of exchange rate. • Increased debt burden.

- Demonstration effect.
- Population pressure.
- Political factors.

(Any four to be explained)

Question 7

- (a) Mention the components of M_1 , M_2 and M_3 measures of money supply by RBI. [3]
- (b) Explain the following functions of the Central Bank: [3]
- (i) Custodian of foreign exchange reserves.
- (ii) Lender of the last resort.
- (c) Discuss the different ways in which commercial banks extend loans to their customers. [6]

Comments of Examiners	Suggestions for Teachers
<p>(a) Most candidates did not mention all the components of M_1, M_2 and M_3 measures of money supply by RBI. Many candidates stated $M_2 = M_1 + \text{savings deposit}$ whereas the correct answer is <i>savings deposit with post office savings bank</i>. Similarly, $M_3 = M_1 + \text{time deposit}$ was stated instead of <i>time deposit with banking system</i>. For M_1, some candidates wrote abbreviated answers such as, $M_1 = C + DD + OD$.</p> <p>(b) Common errors observed in a large number of answer scripts were:</p> <p>(i) Merely writing that <i>the central bank maintains the foreign exchange reserve</i> and not mentioning the other responsibilities of the central bank related to foreign exchange.</p> <p>(ii) Not mentioning how the central bank as a lender of the last resort provides money by discounting first class bills, etc.</p> <p>(c) Common errors made by the candidates were:</p> <ul style="list-style-type: none"> – Explaining types of deposits held by the banks which was not asked for. – Describing the entire process of credit creation while explaining how loans are given out. – Writing about car loans, home loans, personal loans, etc. – Not being able to explain how interest is calculated on different types of loans due to 	<ul style="list-style-type: none"> ▪ <i>Train students to write complete answers. They should be advised against writing abbreviations. Ensure that the students are well versed with the formulae. Teach the components of M_1, M_2 and M_3 through a table.</i> ▪ <i>Explain every function of the Central Bank through a flow chart so that the students understand the manner in which the central bank assists in the export and import of the country and converts the currency for the creation of reserves and also how it controls the exchange rate. Emphasis should be laid on the function of the central bank being a lender of the last resort. The students must have clarity about the impact of each function performed by the central bank.</i> ▪ <i>Distinguish between granting of loans and creation of loans/credit. The features of the types of loans granted can be taught by means of a flow chart with stress laid on key words, for example, overdraft having the key word 'overdrawn'. It should be stressed that the procedure of discounting of bills is a part of the</i>

lack of clarity as to whether interest is charged on the whole amount or only on the amount withdrawn on a particular type of loan.

- Definition of overdraft not being clearly written.

explanation on discounting of bills. Explain in detail, the manner in which interest is calculated on different types of loans, whether it is charged on the entire amount of the loan or on the amount actually withdrawn.

MARKING SCHEME

Question 7

(a)	<p>M₁, M₂ and M₃ measures of money supply by RBI:</p> <p>M₁ = currency with public + demand deposits with banks (current saving) + other deposits with RBI.</p> <p>M₂ = M₁ + Saving deposits with post office saving banks.</p> <p>M₃ = M₁ + time deposits with banking system</p>
(b)	<p>Functions of the Central Bank:</p>
	<p>(i) Custodian of foreign exchange reserve of all foreign exchange transactions are through central bank – controls receipts and payments – maintained stability in exchange rate – enforces exchange control transactions.</p>
	<p>(ii) Lenders of the last resort – when commercial banks have exhausted resources – approach central bank to help in financial crisis – provide financial assistance to commercial banks – discount houses, bill brokers, discounting of approved securities and collateral loans.</p>
(c)	<p>Ways in which commercial banks can extend loans to their customers:</p> <ul style="list-style-type: none"> • Cash credit • Outright loans (term loans) • Overdraft facilities • Discounting of bills of exchange <p style="text-align: right;"><i>(Each point to be explained)</i></p>

Question 8

- (a) Briefly explain the mechanism of the investment multiplier with the help of a schedule. [3]
Take initial increase in autonomous investment as ₹ 1000 crores and MPC as 0.8.
- (b) Briefly discuss components of Aggregate Demand in an economy. [3]
- (c) Explain the concept of *deflationary gap* with the help of a diagram. Discuss *any two* monetary measures to reduce the gap. [6]

Comments of Examiners

- (a) Most candidates concentrated only on the formula while ignoring the definition of the multiplier. Many candidates calculated the total increase in the income by only using the formula. They did not write the mechanism and did not mention the maximum amount of income that can be created in the process.
- (b) Many candidates did not write the definition of aggregate demand. Some candidates only wrote the two-sector model although they were supposed to write all the components.
- (c) The common errors made by the candidates were:
1. The key phrase, *full employment level of income*, was missing from the definition of deflationary gap.
 2. Showing deflationary gap at the *underemployment equilibrium level*, instead of at *full employment level of income* in the diagram.
 3. Improper/ incorrect/ no labelling of the diagram making it meaningless.
 4. Unnecessarily explaining fiscal measures to reduce the gap when only monetary measures were asked for.

Suggestions for Teachers

- *Ensure that students write the definition of the multiplier along with its formula. They should be told to arrive at the change in income and consumption with the help of a table. Students should be told to write the process of investment multiplier along with the formula. Train students to attempt the question on mechanism of the investment multiplier with a schedule and if values are given then only those values should be used.*
- *Teach students to start their answers with a definition, to write the formula with all the components as no marks are awarded if only a specific sector is written about. Ensure that the students explain the components properly.*
- *Explain the concept of deflationary gap with the help of a graph emphasizing the importance of the key word 'full employment'. Discuss the differences between inflationary and deflationary gap, preferably drawing two diagrams side by side, along with a columnar table with differences between the two written in point form. Students should be given adequate practice to draw and label graphs correctly.*
- *Monetary measures and fiscal measures should be explained distinctively so that students do not get confused between the two.*
- *Students should be taught the amount of content they ought to write for a 6-mark and a 3-mark question.*

MARKING SCHEME

Question 8

- (a) Investment multiplier is the multiple amounts by which income increases as a result of increase in investment expenditure.

$$k = \frac{\Delta Y}{\Delta I} = \frac{1}{1-mpc} = \frac{1}{mps}$$

Rounds of spending	Increase in autonomous investment (ΔI)	Increase in consumption (ΔC)	Increase in income (ΔY)
1	1000	-	1000
2	-	$0.8 \times 1000 = 800$	800
3	-	$0.8 \times 800 = 640$	640
4	-	$0.8 \times 640 = 512$	512
.	.	.	.
.	.	.	.
.	.	.	.
		$(\Delta C) = 4000$	$(\Delta Y) 5000$

Given: autonomous investment increases by ₹ 1000 crores and $mpc = 0.8$

- As investment doesn't affect consumption in the first round there is no change in C, but Y increases by 1000 (as $Y = C+I$).
- From round 2, C starts increasing by $mpc \times \Delta Y$.
- The process continues till ΔC and ΔY are too small to continue.
- Therefore, due to increase in autonomous investment by ₹ 1000 income increases by ₹ 5000.

(This final amount of ΔY could also be summarized by appropriate mathematical formula.)

- (b) Aggregate demand is the total amount of goods and services demanded in the economy.

Components of aggregate demand:

- C = desired consumption expenditure of households
- I = desired investment expenditure
- G = desired government spending
- $(X - M)$ = net exports

(The components to be explained briefly)

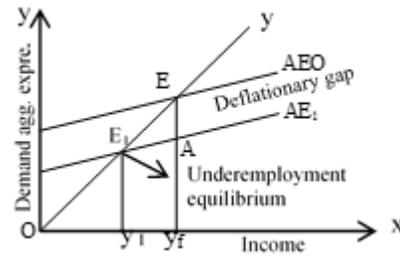
- (c) Deflationary gap represents the difference between the actual aggregate demand and the level of aggregate demand required to establish the equilibrium at full employment level of income.

At the employment level of Income:

Aggregate supply is OY_f or EY_f

Aggregate demand is AY_f

∴ Deficient demand is EA .



Monetary measures to reduce the gap are:

- (i) Bank rate policy: The Central bank should reduce the bank rate.
- (ii) Open Market Operations: The Central bank should pursue the policy of buying government bonds and securities from the commercial banks.
- (iii) Cash Reserve Ratio: CRR needs to be reduced. (Any two measures)

Question 9

- (a) How can you obtain: [3]
 - (i) National income from GDP_{MP} .
 - (ii) Personal disposable income from personal income.
- (b) With the help of relevant examples, explain the meaning of *leakages* and *injections* in the circular flow of income. [3]
- (c) From the following data, calculate GNP_{FC} , NDP_{FC} and national income: [6]

<u>Item</u>	<u>₹ in crores</u>
(i) Private final consumption expenditure	950
(ii) Gross domestic fixed capital formation	370
(iii) Consumption of fixed capital	20
(iv) Government final consumption expenditure	410
(v) Closing stock	300
(vi) Subsidy	80
(vii) Net exports	(-)50
(viii) Wages and salaries	780
(ix) Net factor income from abroad	(-)40
(x) Indirect tax	180
(xi) Opening stock	150
(xii) Profit before tax	200

Comments of Examiners

- (a) Most of the candidates got confused with the items to be deleted and added for calculating National Income from GDP_{MP} . To derive Personal Disposable Income from Personal Income, many candidates did not subtract miscellaneous receipts of Government administrative departments. Some candidates wrote only *miscellaneous receipts*. A few candidates obtained the required concepts in the reverse order.
- (b) Many candidates were not able to state the meaning of *leakages* and *injections* properly. Some candidates drew the diagram of circular flow of income for two-sector, three-sector and four sector models, but did not indicate saving, tax and imports as leakages and investment, public expenditure and exports as injections.
- (c) Majority of the candidates calculated GNP_{FC} , NDP_{FC} and NNP_{FC} or NI on the basis of GDP_{MP} . While calculating GDP_{MP} , many candidates did not consider *Change in stock, i.e., the difference between closing stock and opening stock* (Item no. v - item no. xi), thereby getting an incorrect GDP_{MP} . This had a cascading effect as due to the substitution of incorrect value of GDP_{MP} , all other variables were also incorrect.

Suggestions for Teachers

- Explain the meaning of the phrase, 'other miscellaneous receipts of the government', with the help of examples such that students understand its relevance and are thus able to avoid making mistakes.
- Teach diagrams of two and three sector models of circular flow separately, mentioning the leakages and injections in each. Ensure that students understand why a particular term is a leakage or injection and how each one of them affects the circular flow of income.
- Emphasize that all the formulae and their derivations have to be learnt.
- Give sufficient practice in solving numericals on National Income, preferably with various components, as any typical component if treated incorrectly can result in the entire numerical being incorrect. Train students to solve numericals step by step and stress upon writing units.

MARKING SCHEME

Question 9

(a)	(i)	National Income from GDP_{MP} : $NNP_{FC} = GDP_{MP} - \text{depreciation} - NIT + NFIA$
	(ii)	Personal disposable income from personal income: Personal disposable income = Personal income – personal tax paid by household – other miscellaneous receipts of the government administrative departments
(b)		Leakages: It is amount of money which is withdrawn from the flow of income. Examples: Saving, tax, imports. Injections: It is the amount of money which is added to the flow of income. Examples: Investment, public expenditure, exports
(c)		$GNP_{FC} = GDP_{MP} + NFIA - NIT$

$$\begin{aligned}
 &= 1830 + ix - (x-vi) \\
 &= 1830 + (-40) - (180-80) \\
 &= ₹ 1690 \text{ Crores}
 \end{aligned}$$

$$\begin{aligned}
 \text{NDP}_{\text{FC}} &= \text{GDP}_{\text{MP}} - \text{depreciation} - \text{NIT} \\
 &= 1830 - iii - (x-vi) \\
 &= 1830 - 20 - (180-80) \\
 &= ₹ 1710 \text{ Crores}
 \end{aligned}$$

$$\begin{aligned}
 \text{NNP}_{\text{FC}} &= \text{NDP}_{\text{FC}} + \text{NFIA} \\
 &= 1710 + ix \\
 &= 1710 + (-40) \\
 &= ₹ 1670 \text{ Crores}
 \end{aligned}$$

GENERAL COMMENTS

Topics found
difficult by
candidates

- Question 1 (ii) Income effect.
- Question 1 (v) Autonomous and Accommodating Capital flow.
- Question 1 (x) Operating surplus.
- Question 2(b) Concept of DMRS and its effect on IC.
- Question 3(c) Law of Variable Proportions.
- Question 4(c) (i.) Shut-down point and (ii) Break-even point.
- Question 5(a) Reasons behind (i) TC and TVC curves not starting from the same point and (ii) AC and AVC curves not touching each other.
- Question 7(c) Different ways of extending loans by commercial banks.
- Question 8(a) Explanation of investment multiplier mechanism using schedule. (c) Definition of *deflationary gap* and showing it in a diagram.
- Question 9(c) Inclusion of *Closing stock* in the calculation of different variables related to NI.

Concepts in which candidates got confused

- Autonomous and accommodating capital flow.
- Reasons for IC sloping negatively and IC convex to the origin.
- Reasons for positive slope of supply curve and reasons for shift in supply.
- Identification of the three stages of the law of variable proportion.
- Conditions for break-even and shut-down points.
- Different ways in which commercial banks extend loans and the credit creation process of commercial banks.
- Components of aggregate demand.
- Components of money supply.
- National income numerical- items to be added or subtracted and the reason for doing so.

Suggestions for Students

- Avoid selective study.
- Read the question paper in the allotted reading time and allocate time to each question.
- If captions are written in the answer, then each should be explained properly.
- Each explanation must have its logic.
- If the question is on the difference of two items, then both items need to be explained.
- For writing differences between any two terms, the definitions, if any, must be stated as one of the points.
- Draw diagrams which are clear and properly labelled. Practice diagrams regularly keeping in mind the theory.
- Diagrams and the explanation of the theory should be prepared alongside, rather, practice to explain the diagrams in one's own words. This will help in a better understanding of the topic.
- All probable objective questions with answers should be written for each chapter and learnt.