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FOREWORD

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 2017

**Gerry Arathoon
Chief Executive & Secretary**

The Council 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 Council's website www.cisce.org.

The document includes a detailed qualitative analysis of the performance of students in different subjects which comprises of examiners' comments on common errors made by candidates, topics found difficult or confusing, marking scheme for each answer and suggestions for teachers/ candidates.

In addition to a detailed qualitative analysis, the Analysis of Pupil Performance documents for the Examination Year 2017 have a new component of a detailed quantitative analysis. For each subject dealt with in the document, both at the ICSE and the ISC levels, a detailed statistical analysis has been done, which has been presented in a simple user-friendly manner.

It is hoped that this document will not only enable teachers to understand how their students have performed with respect to other students who appeared for the ICSE/ISC Year 2017 Examinations, how they have performed within the Region or State, their performance as compared to other Regions or States, etc., it will also help develop a better understanding of the assessment/ evaluation process. This will help them in guiding 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.

The Analysis of Pupil Performance document for ICSE for the Examination Year 2017 covers the following subjects: English (English Language, Literature in English), Hindi, History, Civics and Geography (History & Civics, Geography), Mathematics, Science (Physics, Chemistry, Biology), Commercial Studies, Economics, Computer Applications, Economics Applications, Commercial Applications.

Subjects covered in the ISC Analysis of Pupil Performance document for the Year 2017 include English (English Language and Literature in English), Hindi, Elective English, Physics (Theory and Practical), Chemistry (Theory and Practical), Biology (Theory and Practical), Mathematics, Computer Science, History, Political Science, Geography, Sociology, Psychology, Economics, Commerce, Accounts and Business Studies.

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. Manika Sharma, Dr. M.K. Gandhi, Ms. Mansi Guleria and Mrs. Roshni George, who have done a commendable job in preparing this document. The statistical data pertaining to the ICSE and the ISC Year 2017 Examinations has been provided by the IT section of the Council for which I would like to thank Col. R. Sreejeth (Deputy Secretary - IT), Mr. M.R. Felix, Education Officer (IT) – ICSE and Mr. Samir Kumar, Education Officer (IT) - ISC.

November 2017

Shilpi Gupta
Deputy Head - RDCD

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INTRODUCTION

This document aims to provide a comprehensive picture of the performance of candidates in the subject. It comprises of two sections, which provide Quantitative and Qualitative analysis results in terms of performance of candidates in the subject for the ISC Year 2017 Examination. The details of the Quantitative and the Qualitative analysis are given below.

Quantitative Analysis

This section provides a detailed statistical analysis of the following:

- Overall Performance of candidates in the subject (Statistics at a Glance)
- State wise Performance of Candidates
- Gender wise comparison of Overall Performance
- Region wise comparison of Performance
- Comparison of Region wise performance on the basis of Gender
- Comparison of performance in different Mark Ranges and comparison on the basis of Gender for the top and bottom ranges
- Comparison of performance in different Grade categories and comparison on the basis of Gender for the top and bottom grades

The data has been presented in the form of means, frequencies and bar graphs.

Understanding the tables

Each of the comparison tables shows N (Number of candidates), Mean Marks obtained, Standard Errors and t-values with the level of significance. For t-test, mean values compared with their standard errors indicate whether an observed difference is likely to be a true difference or whether it has occurred by chance. The t-test has been applied using a confidence level of 95%, which means that if a difference is marked as 'statistically significant' (with * mark, refer to t-value column of the table), the probability of the difference occurring by chance is less than 5%. In other words, we are 95% confident that the difference between the two values is true.

t-test has been used to observe significant differences in the performance of boys and girls, gender wise differences within regions (North, East, South and West), gender wise differences within marks ranges (Top and bottom ranges) and gender wise differences within grades awarded (Grade 1 and Grade 9) at the ISC Year 2017 Examination.

The analysed data has been depicted in a simple and user-friendly manner.

Given below is an example showing the comparison tables used in this section and the manner in which they should be interpreted.

Comparison on the basis of Gender

Gender	N	Mean	SE	t-value
Girls	2,538	66.1	0.29	11.91*
Boys	1,051	60.1	0.42	

*Significant at 0.05 level

Girls performed significantly better than boys.



The results have also been depicted pictographically. In this case, the girls performed significantly better than the boys. This is depicted by the girl with a medal.

The table shows comparison between the performances of boys and girls in a particular subject. The t-value of 11.91 is significant at 0.05 level (mentioned below the table) with a mean of girls as 66.1 and that of boys as 60.1. It means that there is significant difference between the performance of boys and girls in the subject. The probability of this difference occurring by chance is less than 5%. The mean value of girls is higher than that of boys. It can be interpreted that girls are performing significantly better than boys.

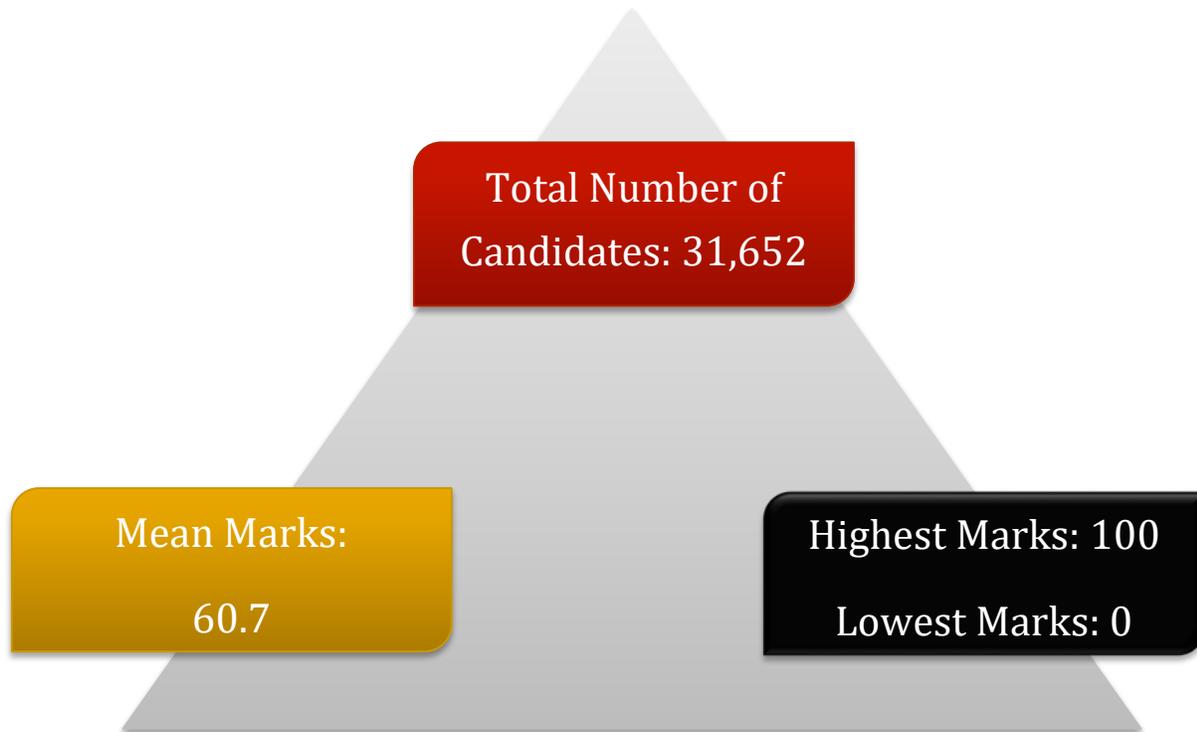
Qualitative Analysis

The purpose of the qualitative 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 centres 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.

QUANTITATIVE ANALYSIS

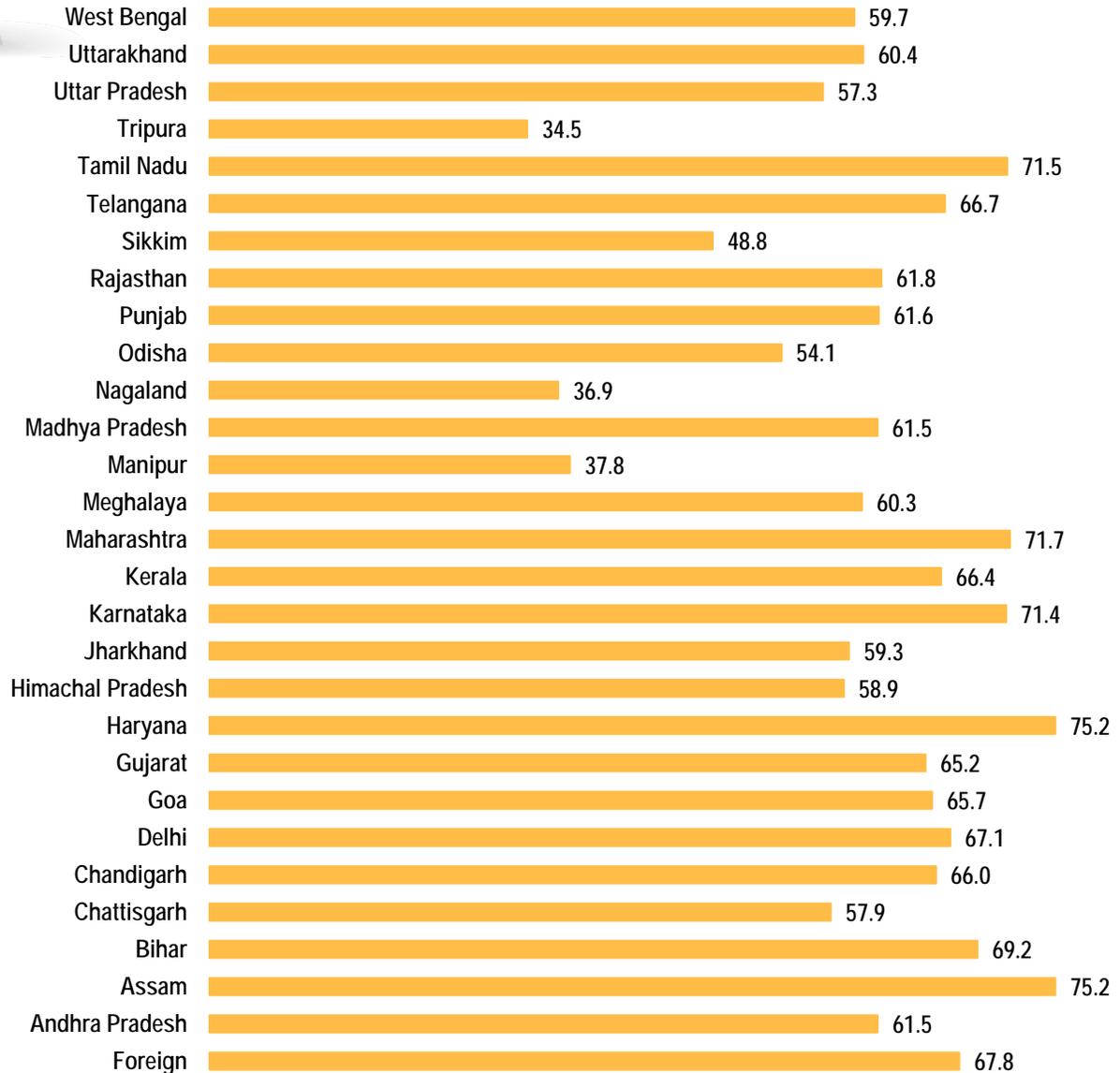


STATISTICS AT A GLANCE





PERFORMANCE (STATE-WISE & FOREIGN)



The States of Assam, Haryana, Maharashtra and Karnataka secured highest mean marks. Mean marks secured by candidates studying in schools abroad were 67.8.



GENDER-WISE COMPARISON



GIRLS

Mean Marks: 63.8
 Number of
 Candidates: 16,494



BOYS

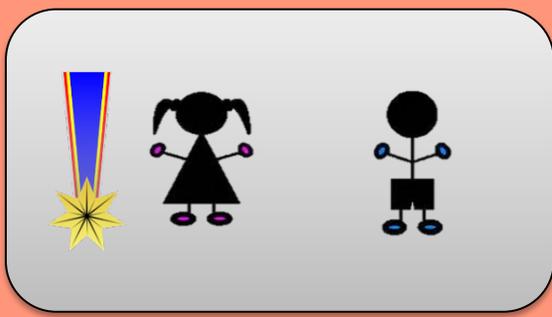
Mean Marks: 57.3
 Number of
 Candidates: 15,158

Comparison on the basis of Gender

Gender	N	Mean	SE	t-value
Girls	16,494	63.8	0.16	27.97*
Boys	15,158	57.3	0.17	

*Significant at 0.05 level

Girls performed significantly better than boys.

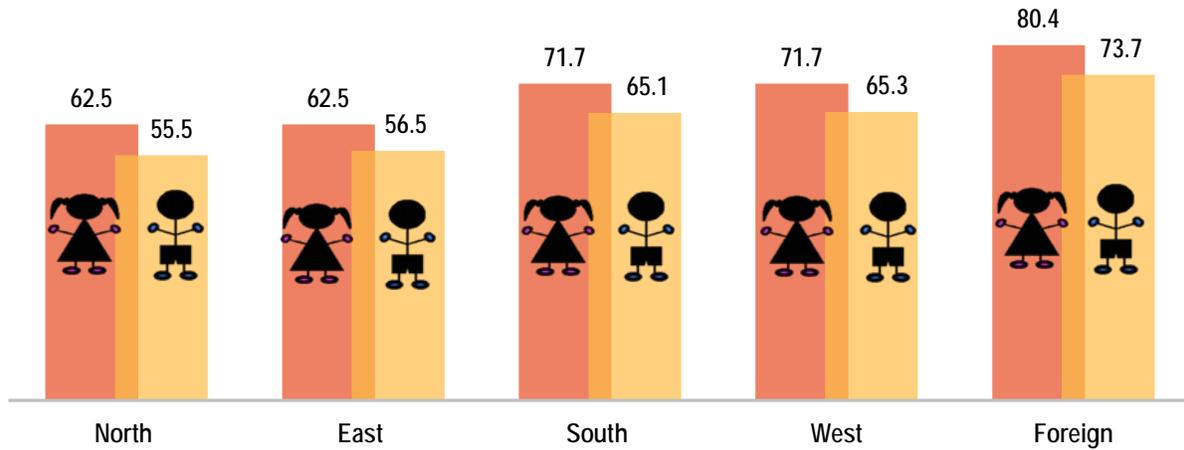




REGION-WISE COMPARISON



Mean Marks obtained by Boys and Girls-Region wise

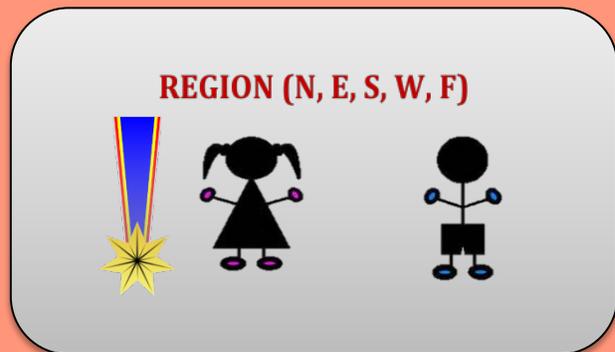


Comparison on the basis of Gender within Region

Region	Gender	N	Mean	SE	t-value
North (N)	Girls	6,856	62.5	0.24	19.75*
	Boys	5,962	55.5	0.26	
East (E)	Girls	7,456	62.5	0.25	17.00*
	Boys	7,321	56.5	0.25	
South (S)	Girls	956	71.7	0.60	7.10*
	Boys	780	65.1	0.70	
West (W)	Girls	1,152	71.7	0.57	7.49*
	Boys	1,024	65.3	0.64	
Foreign (F)	Girls	74	80.4	1.80	2.23*
	Boys	71	73.7	2.43	

*Significant at 0.05 level

The performance of girls was significantly better than that of boys in all the regions.



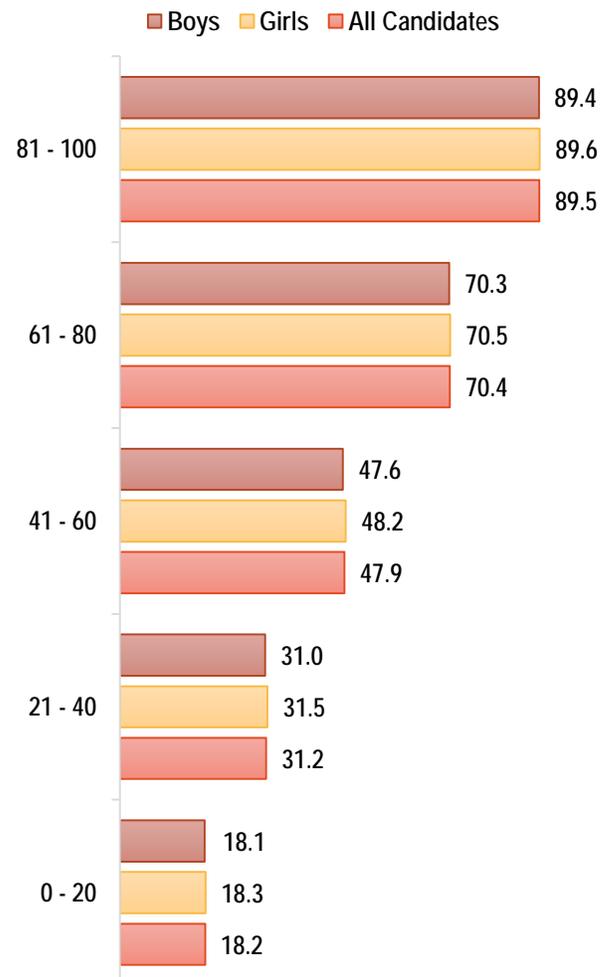


MARK RANGES : COMPARISON GENDER-WISE

Comparison on the basis of gender in top and bottom mark ranges

Marks Range	Gender	N	Mean	SE	t-value
Top Range (81-100)	Girls	4,535	89.6	0.08	1.95
	Boys	2,758	89.4	0.10	
Bottom Range (0-20)	Girls	232	18.3	0.20	1.13
	Boys	449	18.1	0.13	

No significant difference was found in the performance of girls and boys in the top and bottom marks range.



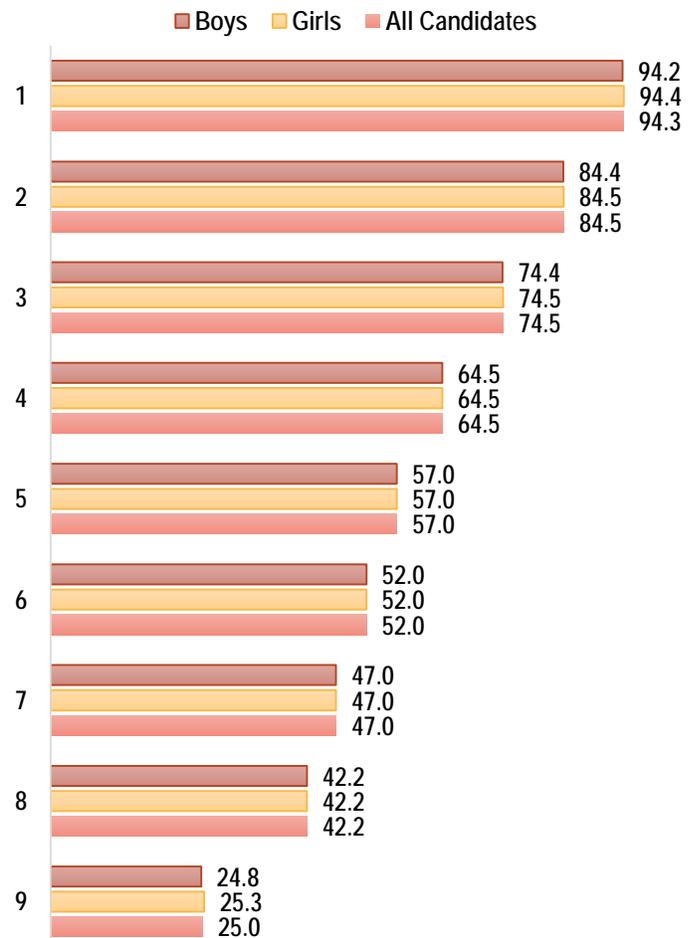


GRADES AWARDED : COMPARISON GENDER-WISE

Comparison on the basis of gender in Grade 1 and Grade 9

Grades	Gender	N	Mean	SE	t-value
Grade 1	Girls	2,244	94.4	1.99	0.06
	Boys	1,326	94.2	2.59	
Grade 9	Girls	1,201	25.3	0.75	0.57
	Boys	1,913	24.8	0.58	

In Grade 1 and Grade 9 no significant difference was observed between the average performance of girls and boys.



QUALITATIVE ANALYSIS

PART I (20 Marks)

Answer all questions.

Question 1

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

[10×2]

- (i) What is meant by *ex-ante demand* and *ex-post demand*?
- (ii) What is short run production function? Explain how is short run production function different from long run production function.
- (iii) Explain *one* main feature of each:
 - (a) Monopsony market.
 - (b) Monopoly market.
- (iv) How is *elasticity of supply* different from *supply of a commodity*?
- (v) What is *direct tax*?
- (vi) Give *two* differences between *time deposit* and *demand deposit*.
- (vii) Explain with the help of an example, the problem of double counting while calculating national income.
- (viii) Give a reason for each of the following:
 - (a) The demand for a good increases when the income of the consumer increases.
 - (b) X and Y are substitute goods. A rise in the price of X results in a rightward shift of the demand curve of Y.
- (ix) Write *any two* differences between *balance of trade* and *balance of payment*.
- (x) Explain the shape of MC curve.

Comments of Examiners

- (i) Some of the candidates did not write the key words like 'desire' and 'actually' purchased. A number of candidates did not mention 'particular period of time'.
- (ii) Most of the candidates answered this part correctly. A few candidates did not write the difference with respect to fixed and variable factors.
- (iii) Some of the candidates wrote a feature of 'monopoly' in place of 'monopsony' and vice-versa. Several candidates also wrote features of monopoly.
- (iv) In many scripts 'degree of responsiveness' was not stated, rather, many candidates wrote proportional method instead of difference between 'elasticity of supply' and 'supply of a commodity'. For supply, the terms 'time period' and 'offer for sale' were missing.
- (v) While answering this part, most of the candidates did not write about 'burden', 'impact' and 'incidence of tax'. A large number of candidates gave examples instead of the explanation.
- (vi) In 'time deposits', most of the candidates wrote about fixed deposits but in 'demand deposits' they only wrote about current a/c and not saving a/c.
- (vii) In many answers, inclusion of second-hand goods and pure exchange transactions were considered as double counting, which was incorrect.
- (viii) Several candidates did not mention 'real income' or 'normal goods' when income of the consumer increases. The phrase 'relatively cheaper' was not mentioned by many candidates for 'substitute goods'.
- (ix) In the case of 'balance of trade', some candidates did not mention 'visible items'. In balance of payment, many candidates did not write 'economic transactions between normal residents of a country'.
- (x) Several candidates did not write that the U shape of MC curve is because of the law of variable proportions. A few candidates did not explain the relation between the law and the shape of the MC curve.

Suggestion for teachers

- Teach key words like 'planned' or 'desire' and 'goods' actually bought in a particular period of time.
- Explain the role of inputs in different time periods. Students should also be told that short run refers to the law of variable proportions.
- Ask students to bring out the complete meaning of monopsony and monopoly.
- Emphasise on the term 'degree of responsiveness' in the definition of any type of elasticity. Clearly state the difference between definition and formula.
- Tell students the meaning of 'direct tax' with the help of 'impact' and 'incidence'.
- Explain the concept shifting of a tax.
- Clearly explain significance of savings and current deposit as components of demand deposits.
- Make it clear to the students that double counting problem refers to the output method.
- Teach determinants of demand clearly. The difference between normal goods and inferior goods must be made clear.
- Explain the relevance of every term and the concept of accounting balance while teaching different components of BOP.
- Explain the shape of the MC curve with the law of variable proportions.

MARKING SCHEME

Question 1

- | | |
|-----|---|
| (i) | Ex ante demand refers to the amount of goods that consumers want to or willing to buy during a particular period of time. It is planned or desired amount of demand. Ex post demand refers to the amount of goods that the consumers actually purchase during a specific period. It is the amount of the goods actually bought. |
|-----|---|

(ii)	<p>Production function expresses the relation between physical input and physical output of a firm given the state of technology. It is a purely technical relationship that connects factor- inputs and outputs.</p> <p>$Q_x = f(F_1 , F_2, F_3, \dots F_x)$</p> <p>$Q_x$ = quantity of commodity x</p> <p>$F_1, F_2, F_3 \dots F_x$ = different factor inputs</p> <p>Differences:</p> <p>Short-run production function: It refers to a situation when only one input is variable and all other inputs are assumed to be constant. The behaviour of output when only one input is changed and other inputs are fixed are termed as <i>returns to a factor</i>. It is studied as <i>law of variable proportions or laws of returns</i>.</p> <p>Long –run production function: It refers to a situation when all the inputs are variable. The way in which output varies when all inputs in production of a commodity are changed simultaneously in the same proportion are studied. It is studied as <i>returns to scale</i>.</p>
(iii)	<p>If there is one purchaser of the product in the market, it is called Monopsony. Here the price of the product is determined by the buyer and thus he dominates the market. Eg: Central government is the only buyer of defence related goods, Maruti is the sole buyer of its specialised components and spare parts.</p> <p>Monopoly refers to that form of market organisation wherein there is a single firm or producer producing a commodity for which there are no close substitutes. Eg: Indian railways, state electricity board.</p>
(iv)	<p>Elasticity is the degree of responsiveness of change of quantity supply to the change in its price.</p> <p>Supply – quantity the seller is willing to sell corresponding to the given price /It refers to the quantity of a commodity which producers are willing to produce and offer for sale at a particular price during a particular period of time.</p>
(v)	<p>Direct tax – imposed on a person who bears the burden of tax and pays it to the government.</p>
(vi)	<p>Time Period – Time deposits are deposited in bank for a fixed period of time (Usually 1 year to 5 years) whereas there is no fix time period involved in case of demand deposit.</p> <p>Example – Fixed or term deposit is an example of time deposits whereas saving account and current account are examples of demand deposits.</p> <p>Penalty – If one withdraws his or her time deposit early before the maturity then he or she has to pay penalty which is not the case with demand deposits as one can withdraw funds as and when required by him or her in case of current account and limited number of times in case of saving account.</p> <p>Rate of Interest – The rate of interest offered by the banks on time deposit is higher around 7 to 9 percent whereas in case of saving and current account it is lower (which is around 4 to 6 percent).</p>
(vii)	<p>The problem of double counting is the problem of estimating the value of goods and services more than once. While estimating national income by using the output method, only the value</p>

	of final goods and services is taken into consideration. This leads to overestimation of the value of goods and services produced.																
(viii)	(a)	The demand for normal good increases with the increase in income as the consumer has more income to buy the good.															
	(b)	A rise in the price of x will result in the fall in the demand of x and rise in the demand of y. The demand curve of y will shift to the right.															
(ix)	Differences between balance of trade and balance of payment:																
	<table border="1"> <thead> <tr> <th>Basis</th> <th>Balance of Trade</th> <th>Balance of Payments</th> </tr> </thead> <tbody> <tr> <td>Meaning</td> <td>Its refers to differences between amounts of exports and imports of visible items</td> <td>It is an accounting statement that provides a systematic record of all economic transactions, between residents of a country and rest of the world in a given period of time.</td> </tr> <tr> <td>Components</td> <td>It includes only visible items</td> <td>It includes visible items, invisible items, unilateral transfers and capital transfers.</td> </tr> <tr> <td>Capital transactions</td> <td>It does not record any transaction of capital nature.</td> <td>It records all transactions of capital nature</td> </tr> <tr> <td>Scope</td> <td>It is a narrow concept as it only a part of BOP account</td> <td>It is a wider concept and it includes BOT</td> </tr> </tbody> </table>		Basis	Balance of Trade	Balance of Payments	Meaning	Its refers to differences between amounts of exports and imports of visible items	It is an accounting statement that provides a systematic record of all economic transactions, between residents of a country and rest of the world in a given period of time.	Components	It includes only visible items	It includes visible items, invisible items, unilateral transfers and capital transfers.	Capital transactions	It does not record any transaction of capital nature.	It records all transactions of capital nature	Scope	It is a narrow concept as it only a part of BOP account	It is a wider concept and it includes BOT
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(x)	It is a U shaped curve. It is due to law of variable proportions. Cost fall due to increasing returns to factor and then rises due to diminishing returns to factor.																

PART II (60 Marks)

Answer any five questions.

Question 2

- (a) Explain with the help of a diagram the relationship between *total utility* and *marginal utility*. [3]
- (b) Find the elasticity of demand of x and y on the basis of the demand schedule given below and specify which one is more elastic: [3]

Good x		Good y	
Px (Rs.)	Dx (units)	Py (Rs.)	Dy (units)
8	10	8	10
4	12	6	25

- (c) Explain *any four* reasons for the demand curve to be downward sloping. [6]

Comments of Examiners

- (a) Most of the candidates did not show the relation between the maximum point of TU curve and the point of intersection of MU curve. Some candidates wrongly drew TU curve as TP curve.
- (b) In some cases, candidates reached conclusion without calculation of elasticity of demand. Some of the candidates tried to solve it by expenditure method. Several candidates even drew the demand curve using the schedule, which was not correct.
- (c) Under the law of diminishing marginal utility, a number of candidates related the law but did not establish the relation between price and demand. Several candidates did not explain substitution effect correctly. In some cases, determinants of demand were explained which was not required.

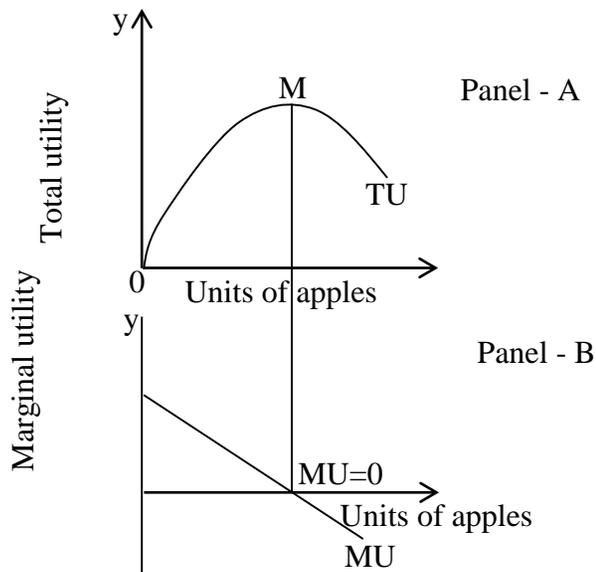
Suggestions for teachers

- Teach relationship with the help of diagrams and ask students to practice diagrams.
- Give more practice to students on calculation of elasticity of demand.
- Tell students that without price and demand the law of diminishing marginal utility will be incomplete.

MARKING SCHEME

Question 2

- (a) The relationship between *total utility* and *marginal utility*:



- (i) The total utility curve is concave from above indicating declining slope of the curve, which indicates a declining marginal utility. Thus up to point M, TU curve has a positive slope, but its slope goes on decreasing steadily as quantity consumed is increased. This shows that marginal utility decreases but is positive as long as total utility increases.
- (ii) When total utility is maximum marginal utility is zero.
- (iii) After M, the slope of TU curve becomes negative showing that MU is negative. Thus when total utility declines marginal utility is negative.

(b)	<p>Elasticity of demand for x good:</p> <p>Here, $\Delta q = 2$; $\Delta p = 4$; $q = 10$; $p = 8$</p> <p>Hence, $e_D = \frac{2}{4} \times \frac{8}{10} = \frac{2}{5} = 0.4$</p> <p>(inelastic demand or elasticity is less than one)</p> <p>Elasticity of demand for y good:</p> <p>Here, $\Delta q = 15$, $\Delta p = 2$; $q = 10$; $p = 8$</p> <p>Hence, $e_D = \frac{15}{2} \times \frac{8}{10} = 6$ (elastic demand or elasticity is more than one)</p> <p>Thus, the demand for y good is more elastic than the demand for x good. Demand schedule of x good is an example of inelastic demand schedule while the demand schedule of y good is an example of elastic demand schedule.</p> <p>The demand for good Y is more elastic than the demand for good X .</p>
(c)	<p>Reasons for the downward slope of demand curve.</p> <p>(1) The law of <u>diminishing marginal utility</u>: This law suggests that as more of a product is consumed the marginal (additional) benefit to the consumer falls; hence consumers are prepared to pay less. This can be explained as follows: Most benefit is generated by the first unit of a good consumed because it satisfies all or a large part of the immediate need or desire. A second unit consumed would generate less utility – perhaps even zero, given that the consumer now has less need or less desire. With less benefit derived, the rational consumer is prepared to pay rather less for the second, and subsequent, units, because the marginal utility falls. (Should be explained with reference to MU=P)</p> <p>(2) Income effect If we assume that money income is fixed, the income effect suggests that, as the price of a good falls, <i>real income</i> - that is, what consumers can buy with their <i>money income</i> - rises and consumers increase their demand. Therefore, at a lower price, consumers can buy more from the same money income, and, <i>ceteris paribus</i>, demand will rise. Conversely, a rise in price will reduce real income and force consumers to cut back on their demand.</p> <p>(3) Substitution effect As the price of one good falls, it becomes <i>relatively less expensive</i>. Therefore, assuming other alternative products stay at the same price, at lower prices the good appears cheaper, and consumers will switch from the expensive alternative to the relatively cheaper one.</p> <p>(4) Many uses of a commodity – At low price commodity can be put to different uses but at higher price commodity is restricted to few important uses only. Number of consumers – At lower price more consumers can afford to buy and vice versa.</p>

Question 3

- (a) The difference between AC curve and AVC curve decreases with increase in output but the two curves never touch each other. Justify the statement with the help of a diagram. [3]
- (b) Explain *any two* characteristics of an indifference curve. [3]
- (c) Discuss producer's equilibrium in perfect competition, using MR and MC approach. [6]

Comments of Examiners

- (a) Most of the candidates did not answer this part correctly.
- (b) Many candidates did not explain the various characteristics of indifference curve. A number of candidates wrote the captions without any explanation.
- (c) A large number of candidates did not state the definition and conditions of equilibrium. Several candidates did not explain $MC=MR$, $MC>MR$ and $MC<MR$.

Suggestions for teachers

- Encourage students to practice diagrams.
- Explain characteristics of indifference curve with logical reasoning
- Teach conditions of equilibrium and explain the concept of Profit and Loss with the MR and MC approach.

MARKING SCHEME

Question 3

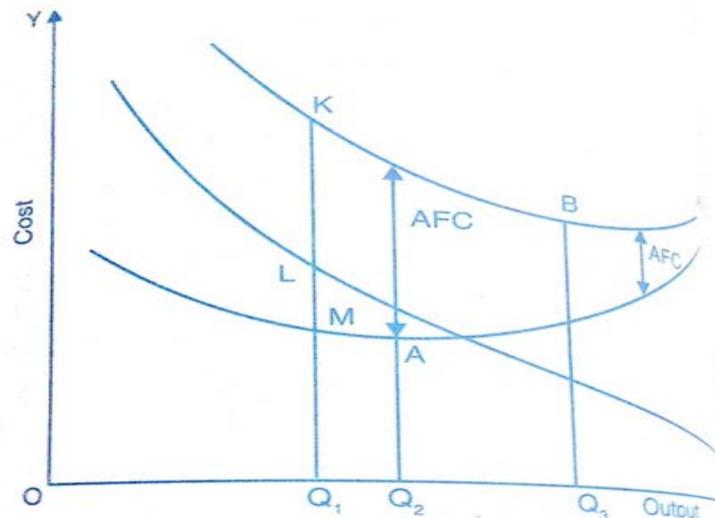
- (a) Difference between AC and AVC:

We know that, $ATC - AVC = AFC$

And $AFC = TFC / \text{Output}$.

Therefore, as output increases, AFC falls. So, the difference between ATC and AVC decreases with increase in output.

ATC and AVC can never be equal at any level of output because AFC can never be zero as TFC is positive.



Behaviour of Short-run Average Cost

- (b) Characteristics of an indifference curve:
- An indifference curve slopes downwards from left to right.
 - An indifference curve is convex to the origin.
 - Every IC curve to the right represent a higher level of satisfaction.
 - Two indifference curves never intersect each other.

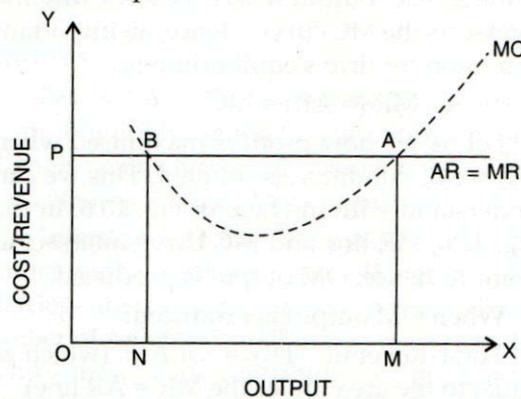
- (c) Producers equilibrium MR and MC approach:

A firm's equilibrium means the level of output where the firm is maximising its profits and therefore has no tendency to change its output.

The two conditions of a firm's equilibrium are:

Condition 1 (necessary): $MC = MR$

Condition 2 (sufficient) : MC should be rising at the point of equilibrium or MC curve should cut the MR curve below.



In the diagram, the condition $MC = MR$ is satisfied at two points, B and A. The firm cannot be in equilibrium at point B (or output ON) at which $MC = MR$, because MC curve is cutting MR curve from above at point B corresponding to ON level of output. The firm will expand its output till level OM because it can increase its profits. The OM level of output indicates equilibrium point where both the conditions are satisfied. $MC = MR$ and MC curve cuts MR from below.

Question 4

- (a) Fill the blanks in the table given below: [3]

No. of workers	T.P.	A.P.	M.P.
1	--	150	--
2	230	--	--
3	--	--	120

- (b) What is meant by *floor price*? Explain its impact on producers. [3]
- (c) Explain *any four* features of oligopoly market. [6]

Comments of Examiners

- (a) By and large this question was answered well by candidates. Only a few candidates committed mistakes by writing zero for M.P. in the first row.
- (b) A number of candidates answered this part correctly. Some common errors observed in this part were:
- incorrect definition,
 - legal price or price fixed by government was missing, and
 - the floor price was not shown, surplus of product as an impact of floor price was not written.
- (c) In most of the answers, the two important features of Oligopoly, i.e. 'intense competition' and 'interdependence' were missing.

Suggestions for teachers

- Practice a number of similar problems with the students.
- Teach the concept of floor price through a well labelled diagram.
- Explain the impact of floor price.
- Explain distinguishing features of each market form.

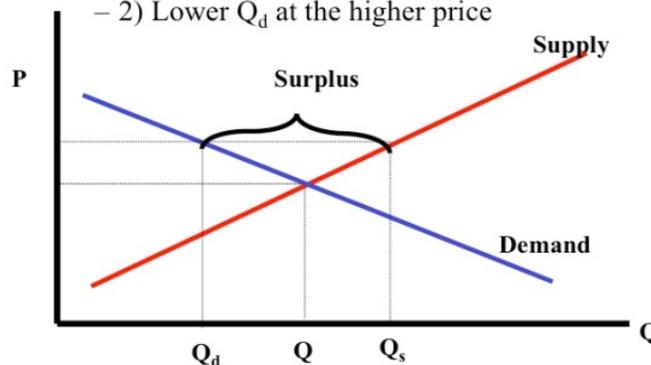
MARKING SCHEME

Question 4

(a)	No. of workers	T.P.	A.P.	M.P.
	1	150	150	---
	2	230	115	80
	3	350	116.66	120

- (b) A price floor is the lowest legal price a commodity can be sold at. Price floors are used by the Government to prevent prices from being too low. The most common price floor is the minimum wage--the minimum price that can be paid for labour. Price floors are also used often in agriculture to try to protect farmers.
- For a price floor to be effective, it must be set above the equilibrium price. If it's not above equilibrium, then the market won't sell below equilibrium and the price floor will be irrelevant.

- Price Floor (a minimum price or wage)
- Creates a surplus if above equilibrium
 - 1) Greater Q_s at the higher price
 - 2) Lower Q_d at the higher price



	<p>Impact on Producers: Since the price is higher than what it would be at equilibrium, the suppliers (producers) are willing to supply more than the equilibrium quantity. They will supply where their marginal cost is equal to the price floor, or where the supply curve intersects the price floor line. The decrease in demand and Increase in supply due to the new imposed higher price creates a surplus of the product.</p>
(c)	<p>Features of Oligopoly Market:</p> <ul style="list-style-type: none"> • Few sellers • Intense competition • Interdependence • Nature of the product • Group behaviour • Importance of selling cost • Nature of the product • Barrier to entry • Indeterminate demand curve.

Question 5

- (a) Explain *two* causes of increasing returns to a factor. [3]
- (b) Differentiate between *real cost* and *money cost* with the help of examples. [3]
- (c) Discuss *four* determinants of supply of a commodity. [6]

Comments of Examiners

- (a) Most of the candidates did not answer this part correctly. Several candidates did not explain the main causes of increasing returns to a factor.
- (b) While explaining ‘real cost’, several candidates did not mention ‘efforts and sacrifices’. A large number of candidates explained ‘money cost’ correctly.
- (c) A number of candidates wrote this answer correctly. However, in many cases determinants were not explained. In some answers, only captions were mentioned as determinants of supply. A number of candidates wrote the ‘determinants of demand’ instead of the ‘determinants of supply’.

Suggestions for teachers

- Explain to students that the law of variable proportions and the causes of different stages are not same.
- Explain the concepts of different costs with the help of examples.
- Make students understand the role of profit as the guiding force behind any type of supply decisions.
- Ask students to explain all the captions properly.
- Explain the determinants of demand and supply in a tabular form.

MARKING SCHEME

Question 5

- (a)
- 1. Better Utilization of the Fixed Factor:**
In the first phase, the supply of the fixed factor (say, land) is too large, whereas variable factors are too few. So, the fixed factor is not fully utilised. When variable factors are increased and combined with fixed factor, then fixed factor is better utilised and output increases at an increasing rate.
 - 2. Increased Efficiency of Variable Factor:**
When variable factors are increased and combined with the fixed factor, then former is utilised in a more efficient manner. At the same time, there is greater cooperation and high degree of specialization between different units of the variable factor.
 - 3. Indivisibility of Fixed Factor:**
Generally, the fixed factors which are combined with variable factors are indivisible. Such factors cannot be divided into smaller units. Once an investment is made in an indivisible fixed factor, then addition of more and more units of variable factor, improves the utilisation of fixed factor. The increasing returns apply as long as optimum level of combination between variable and fixed factor is achieved.
- (b)
- Money cost refers to money expenses which the firm has to incur in purchasing or hiring the factor services.
Real Cost refers to the efforts and sacrifices made by the owners of factors of production used in the production of a commodity.
- (c)
- 1. Price of the given Commodity:**
The most important factor determining the supply of a commodity is its price. As a general rule, Price of a commodity and its supply are directly related. It means, as price increases, the quantity supplied of the given commodity also rises and vice-versa. It happens because at higher prices, there are greater chances of making profit. It induces the firm to offer more for sale in the market.
Supply (S) is a function of price (P) and can be expressed as: $S = f(P)$. The direct relationship between price and supply, known as 'Law of Supply'. The following determinants are termed as 'other factors' or factors other than price'.
 - 2. Prices of Other Goods:**
As resources have alternative uses, the quantity supplied of a commodity depends not only on its price, but also on the prices of other commodities. Increase in the prices of other goods makes them more profitable in comparison to the given commodity. As a result, the firm shifts its limited resources from production of the given commodity to production of other goods. For example, increase in the price of other good (say, wheat) will induce the farmer to use land for cultivation of wheat in place of the given commodity (say, rice).
 - 3. Prices of Factors of Production (inputs):**
When the amount payable to factors of production and cost of inputs increases, the cost of production also increases. This decreases the profitability. As a result, seller reduces the supply of the commodity. On the other hand, decrease in prices of factors of production or inputs, increases the supply due to fall in cost of production and subsequent rise in profit margin. To make ice-cream, firms need various inputs like cream, sugar, machine, labour, etc. When price of one or more of these inputs rises, producing ice-creams will become less profitable and firms supply fewer ice-creams.
 - 4. State of Technology:**
Technological changes influence the supply of a commodity. Advanced and improved technology reduces the cost of production, which raises the profit margin. It induces the seller to increase the

supply. However, technological degradation or complex and out-dated technology will increase the cost of production and it will lead to decrease in supply.

5. Government Policy (Taxation Policy):

Increase in taxes raises the cost of production and, thus, reduces the supply, due to lower profit margin. On the other hand, tax concessions and subsidies increase the supply as they make it more profitable for the firms to supply goods.

6. Goals / Objectives of the firm:

Generally, supply of a commodity increases only at higher prices as it fulfills the objective of profit maximization. However, with change in trend, some firms are willing to supply more even at those prices, which do not maximize their profits. The objective of such firms is to capture extensive markets and to enhance their status and prestige.

Question 6

- (a) Explain how fiscal policy measures can be used to reduce excess demand in an economy. [3]
- (b) Define marginal propensity to consume. How is it different from marginal propensity to save? [3]
- (c) Explain how equilibrium level of income can be determined with the help of aggregate demand curve and aggregate supply curve. [6]

Comments of Examiners

- (a) Many candidates answered this part correctly. However, under fiscal policy, several candidates wrote monetary policy. A few candidates mentioned the role of public debt and deficit financing.
- (b) A number of candidates did not write that MPC is a ratio of 'change in consumption' to 'change in income'. The word 'change' was missing in many answers; same was the case with the MPS.
- (c) Many candidates could not draw the diagram correctly; Y1 less than equilibrium and Y2 more than equilibrium were not shown and explained. $AD > AS$ and $AD < AS$ with inventories were not explained. Some of the candidates drew diagrams for inflationary gap and deflationary gap which was not correct.

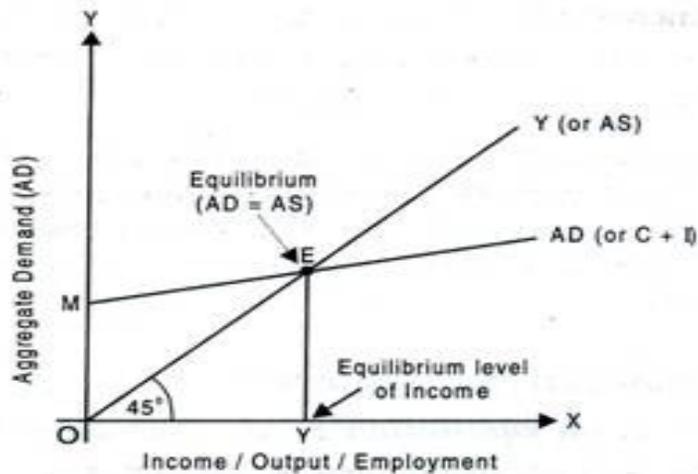
Suggestions for teachers

- Explain to students how increase in taxes, reduction in public expenditure, increase in public borrowing and reduction in deficit financing would reduce excess demand.
- Tell students to write the word 'change' in both MPC and MPS. The expressions $MPC = \Delta C / \Delta Y$
 $MPS = \Delta S / \Delta Y$ should be written (Δ for delta).
- Teach the derivation of $AD = AS$. A well labelled diagram showing equilibrium, $AD < AS$ and $AD > AS$ should be shown. Explain the significance of Y0, Y1 and Y2 points in the diagram

MARKING SCHEME

Question 6

(a)	Fiscal policy measures to reduce excess demand in an economy: <ul style="list-style-type: none">• Increase in taxes• Reduction in public expenditure• Increase in public borrowing• Reducing deficit financing
(b)	Marginal propensity to consume is the ratio of the change in consumption to the change in income. To calculate it, we divide change in consumption by a change in income. $MPC = \Delta C / \Delta Y$ Here MPC = Marginal propensity to consume ΔC = change in consumption ΔY = change in income MPS is the ratio of the change in saving to the change in income. $Mps = \frac{\Delta S}{\Delta y}$
(c)	According to the Keynesian Theory, equilibrium condition is generally stated in terms of aggregate demand (AD) and aggregate supply (AS). An economy is in equilibrium when aggregate demand for goods and services is equal to aggregate supply during a period of time. So, equilibrium is achieved when: $AD = AS \dots (1)$ We know, AD is the sum total of Consumption (C) and Investment (I): $AD = C + I \dots (2)$ Also, AS is the sum total of consumption (C) and saving (S): $AS = C + S \dots (3)$ Substituting (2) and (3) in (1), we get: $C + S = C + I$ Or, $S = I$ It means, according to Keynes, there are Two Approaches for determining the equilibrium level of income and employment in the economy: Aggregate Demand-Aggregate Supply Approach (AD-AS Approach): According to the Keynesian theory, the equilibrium level of income in an economy is determined when aggregate demand, represented by C + I curve is equal to the total output (Aggregate Supply or AS). Components of Aggregate Supply: Aggregate supply is the total output of goods and services of the national income. It is depicted by a 45° line. Since the income received is either consumed or saved, the AS curve is represented by the (C + S) curve.



In Fig. 1, the AD or $(C + I)$ curve shows the desired level of expenditure by consumers and firms corresponding to each level of output. The economy is in equilibrium at point 'E' where $(C + I)$ curve intersects the 45° line.

1. 'E' is the equilibrium point because at this point, the level of desired spending on consumption and investment exactly equals the level of total output.
2. OY is the equilibrium level of output corresponding to point E.
3. It is a situation of 'Effective Demand'. Effective demand refers to that level of AD which becomes 'effective' because it is equal to AS.

At y_1 , aggregate demand is greater than aggregate supply so inventory will be used up, income will increase to y .

At y_2 , aggregate supply will be greater than aggregate demand and income will decrease as inventory will increase.

Question 7

- (a) What is meant by budget of the government? Give *two* differences between *revenue expenditure* and *capital expenditure*. [3]
- (b) Discuss the following methods of debt redemption: [3]
 - (i) Refunding
 - (ii) Debt conversion
- (c) Explain *four* measures to correct disequilibrium in the balance of payment. [6]

Comments of Examiners

- (a) While writing the definition of budget, a number of candidates did not write 'expected' or 'estimated' receipt and expenditure of the government. Several candidates got confused with revenue a/c and capital a/c for revenue expenditure and capital expenditure.
- (b) (i) Some of the candidates confused 'refunding' with 'repudiation' of debt.
 (ii) Debt conversion was confused with refunding.
 (ii) A large number of candidates did not write this answer well. Some of the candidates did not explain properly the way to discourage import and encourage export.

Suggestions for teachers

- Explain the relevance of the terms 'expected' and 'estimated' in defining budget.
- Tell students that refunding is when the government raises a fresh loan to pay off the maturing bond.
- Tell students that debt is not actually repaid but the form of debt is changed.
- Explain clearly the measures to correct disequilibrium in the balance of payment.
- The difference between devaluation and depreciation should be explained.

MARKING SCHEME

Question 7

(a)	<p>Budget of the government: It is a statement of expected receipt and expected expenditure of the government during a financial year. The following are the main differences between capital and revenue expenditures:</p> <p>Nature Capital expenditure is of non-recurring nature. Revenue expenditure is of recurring nature.</p> <p>Purpose Capital expenditure is incurred in acquiring permanent assets or improving their existing capacity. Revenue expenditure is incurred in managing day-to-day activities of the organization and maintaining its fixed assets.</p> <p>Benefit Capital expenditure gives benefit over a number of years. Revenue expenditure gives benefit not for more than one year.</p> <p>Earning Capital expenditure helps in increasing earning capacity of the business. Revenue expenditure helps in earning capacity of the business.</p> <p>Treatment Capital expenditure is shown on asset side of the balance sheet. Revenue expenditure is shown on the debit side of the trading and profit and loss account.</p>
(b)	<p>(i) Refunding is a process by which government raises new bonds to pay off the maturing bonds. Government takes a fresh loan to repay an old loan.</p>

	(ii) Debt conversion is the exchange of a new debt for an old debt. In this case, the debt is not actually repaid but the form of debt is changed.
(c)	<ul style="list-style-type: none"> • Depreciation • Devaluation • Import control • Export promotion • Exchange control • Production of import substitutes • Monetary policy • Fiscal policy

Question 8

- (a) What is meant by *repo-rate* and reverse *repo-rate*? [3]
- (b) Explain the following contingent functions of money: [3]
- (i) Employment of factor inputs.
- (ii) Basis of credit system.
- (c) Discuss *four* qualitative measures of the Central Bank to control credit in the economy. [6]

Comments of Examiners

- (a) While explaining the meaning of repo-rate and reverse repo-rate -‘short period’ and ‘government bonds’ respectively, were not mentioned by a number of candidates. Some candidates wrote ‘repo’ rate’ in place of ‘reverse repo rate’ and vice versa.
- (b) (i) Many candidates did not relate remuneration paid to various factors of production with marginal productivity of the factor.
- (ii) A number of candidates did not explain the working of credit system. Several candidates did not mention instruments like cheques, drafts, etc.
- (c) A number of candidates did not explain the working of qualitative measures of the Central Bank to control credit. Some candidates confused qualitative measures with the quantitative measures.

Suggestions for teachers

- Stress upon key words such as short period and government bonds while teaching repo-rate and reverse repo-rate. The difference between ‘bank rate’ and repo rate must be explained.
- Tell students that credit plays an important role in commercial banks activities and also the role of money in this system.
- Teach the basic differences between qualitative measures and quantitative measures. Effects of both methods must be taught i.e. how these two methods help in controlling credit.

MARKING SCHEME

Question 8

(a)	<p><u>Repo rate</u>: or repurchase rate is the rate of interest at which RBI lends to banks for short-periods against government bonds. This is done by RBI by buying governments bonds from banks with an agreement to sell them back at a fixed rate. If RBI wants to make it more expensive to borrow money, it increases the repo rate. Similarly, if it wants to make it cheaper for banks to borrow money, it reduces the repo rate.</p> <p><u>Reverse repo rate</u>: is the rate of interest at which the RBI borrows from different banks for short period. This is done by selling government bonds to banks. The banks utilises the reverse repo rate facilities to deposit their short –term excess funds with the RBI to earn interest on it.</p>
(b)	<p>Contingent functions are those functions of money which help the producer, consumer etc. to take economic decisions.</p> <p>(i) Employment of Factor Inputs: A producer while employing the factors of production will aim at maximising profits. An entrepreneur will equate marginal productivity of a factor with its price. Wages are expressed in terms of money. Thus it will help the producers to take a decision with regard to the units of factors of production to be employed</p> <p>(ii) Basis of Credit System: In the modern credit system credit plays a very important role. All the commercial activities are highly dependent upon the credit system. Credit instruments like cheques drafts etc. cannot be used without the existence of money.</p>
(c)	<p>Qualitative measures of the Central Bank to control credit in the economy:</p> <ul style="list-style-type: none">• Margin requirement• Credit rationing• Moral suasion• Publicity

Question 9

- (a) Distinguish between *real GDP* and *nominal GDP*. Which of these is a better indicator of economic welfare and why? [3]
- (b) Draw a diagram to show the circular flow of income in a two sector model with leakage and injection. [3]
- (c) Calculate GNP at FC from the following data by using income method and expenditure method: [6]

	<u>Item</u>	<u>₹ in crores</u>
(i)	Operating surplus	600
(ii)	Exports	30
(iii)	Imports	60
(iv)	Private final consumption expenditure	1000

(v)	Net indirect tax	60
(vi)	Compensation of employees	900
(vii)	Mixed income of self employed	160
(viii)	Gross domestic capital formations	330
(ix)	Depreciation	30
(x)	Net factor income from abroad	(-20)
(xi)	Govt. final consumption expenditure	450

Comments of Examiners

- (a) Majority of candidates answered this part correctly. However, the second part of the question, i.e. ‘*which of these is a better indicator and why*’, was not answered well. A number of candidates did not relate Real GDP with base price level and nominal GDP with current price level.
- (b) In this part, several candidates did not depict capital market, savings and investment in the circular flow of income. Leakages and injections were neither shown in the diagram nor explained by a large number of candidates.
- (c) Many candidates committed mistakes in the numerical on National Income. A number of candidates calculated NDP_{fc} using income method by adding operating surplus, compensation of employees and mixed income but wrote GNP_{fc}.

Suggestions for teachers

- Teach definitions of Real GDP and Nominal GDP, with stress on the words Real and Nominal.
- Students need to practice drawing circular flow of income with correct directions.
- Teach relevance of Leakages and Injections for savings and investment respectively.
- Solve questions on national income step wise with method to convert – national to domestic, market price to factor price, gross to net, etc.
- Clearly explain with examples the distinction between NDP, NNP, GDP, GNP, NNP_{mp} and NNP_{fc}.

MARKING SCHEME

Question 9

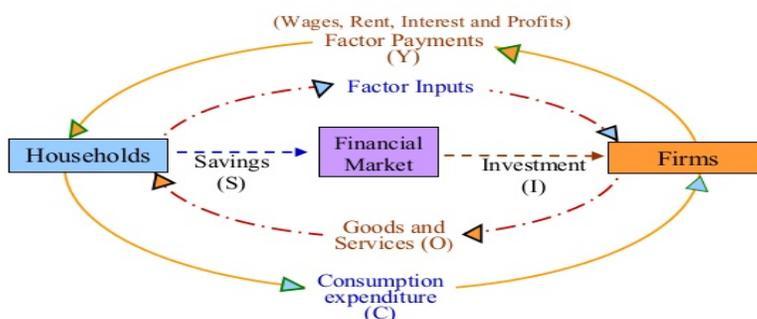
- | | |
|-----|---|
| (a) | Real GDP is the total value of goods and services calculated at ‘constant’ or base price level. Nominal GDP is the total value of goods and services calculated at ‘current’ price level. Real GDP is a better index of welfare of people. When real GDP rises, flow of goods and service tends to rise., other factors remaining constant. This means, greater availability of goods per person, implying higher level of welfare. Also real GDP facilitates periodic comparison of physical output. |
| (b) | The circular flow of income is a way of representing the flows of money between the two main groups in society - producers (firms) and consumers (households). These flows are part of the fundamental process of satisfying human wants.

As we have already seen, a free market economy consists of two components, or sectors , as they are called. These are firms and households . People in households work for firms (selling their factor services) and receive wages in exchange. On the scale of the whole economy, this |

is known as **national income** - the total amount of income earned over a given time period. This money is spent on food, clothing, transport, entertainment etc, and so it returns to the firms. This is the circular flow.

Diagram of 2 sector model:

**Circular Flow of Income
(Two Sector Economy)**



In the equilibrium $Y=C+S=C+I=E=O$

Leakage and injection in two sector model:

Households sell their factor services to firms (in the factor markets) and in exchange receive wages (the left hand side of the flow). In the meantime, households spend this income on goods and services (in the goods market) and in exchange receive the goods and services themselves (the right hand side of the flow). Domestic consumption spent, however Some is saved. Savings are coded as 'S'.

S is called **leakage** from the circular flow. The effect of these leakages can be seen in the figure.

Leakage

A leakage reduces the flow of income.

On the other hand, some firms borrow money and invest it in their firms in the form of capital goods. This is **I** for **investment** called **injections** as the money returns into the circular flows.

(c) By Income Method

$NDP_{FC} = [(vii) + (i) + (viii)] = 900+600+160=1660$ Crores

$GNP_{FC} = NDP_{FC} + Depreciation + Net factor income from abroad = 1660+30+ (-20) = 1670$ Crores

By Expenditure Method:

$GDP_{MP} = [(v) + (iv) + (ix) + (ii)-(iii)] = 450+1000+330+30-60 = 1750$ Crores

$GNP_{FC} = GDP_{MP} + Net factor Income from abroad - Net Indirect tax = 1750 + (-20) - 60 = 1670$ Crores

GENERAL COMMENTS

Topics found difficult by candidates

- Question 1 (ii): Short run and long run production function.
- Question 1 (vii): Problem of double counting.
- Question 1 (ix): Definition of balance of trade.
- Question 2 (c): Reasons for the downward movement of the demand curve.
- Question 3(a): AC and AVC curves and differences between these two.
- Question 3(c): Producer's equilibrium in perfect competition using MR and MC approach.
- Question 4 (b): Impact of floor price.
- Question 6 (c): Determination of equilibrium level of income using aggregate and aggregate supply approach.
- Question 7(c): How to correct disequilibrium in the balance of payment
- Question 9(c): Numerical on national income.

Concepts in which candidates got confused

- Monopoly and monopsony.
- Problem of double counting.
- Time and demand deposits.
- Reasons for demand curve to be downward sloping.
- Real cost and money cost.
- Real GDP and nominal GDP.
- Qualitative and Quantitative measures to control credit.

Suggestions for candidates

- Revise basic terms and concepts.
- Practice drawing diagrams regularly. Proper labelling of the diagram is important.
- Ask a lot questions from your teacher to make your concepts clear.
- Practice questions on National income regularly. Also practice numerical questions on elasticity, cost price, revenue, national income, etc.
- Do not resort to selective study.
- Read the question paper in the allotted reading time and allocate time to each question.
- Do not write incomplete definitions. Use key words and phrases. Answers should be to the point.