

*List of Members
Who Prepared Support Material For
Class - XI, Economics*

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Economics (Code No. 30)

Rationale

Economics is one of the social sciences, which has great influence on every human being. As economic life and the economy go through changes, the need to ground education in children's own experience becomes essential. While doing so, it is imperative to provide them opportunities to acquire analytical skills to observe and understand the economic realities.

At senior secondary stage, the learners are in a position to understand abstract ideas, exercise the power of thinking and to develop their own perception. It is at this stage, the learners are exposed to the rigour of the discipline of economics in a systematic way.

The economics courses are introduced in such a way that in the initial stage, the learners are introduced to the economic realities that the nation is facing today along with some basic statistical tools to understand these broader economic realities. In the later stage, the learners are introduced to economics as a theory of abstraction.

The economics courses also contain many projects and activities. These will provide opportunities for the learners to explore various economic issues both from their day-to-day life and also from issues, which are broader and invisible in nature. The academic skills that they learn in these courses would help to develop the projects and activities. The syllabus is also expected to provide opportunities to use information and communication technologies to facilitate their learning process.

OBJECTIVES

1. Understanding of some basic economic concepts and development of economic reasoning which the learners can apply in their day-by-day life as citizens, workers and consumers.
2. Realisation of learners' role in nation building and sensitivity to the economic issues that the nation is facing today.
3. Equipment with basic tools of economics and statistics to analyse economic issues. This is pertinent for even those who may not pursue this course beyond senior secondary stage.
4. Development of understanding that there can be more than one views on any economic issue and necessary skills of argue logically with reasoning.

Class XI

Paper 1	3 Hours	100 Marks
Units	Periods	Marks
Part A : Statistics of Economics		
1. Introduction	5	3
2. Collection, Organisation and Presentation of Data	25	12
3. Statistical Tools and Interpretation	64	30
4. Developing Projects in Economics	10	5
	<u>104</u>	<u>50</u>
Part B : Indian Economic Development		
5. Development Policies and Experience (1947-90)	18	10
6. Economic Reforms since 1991	14	8
7. Current Challenges facing Indian Economy	60	25
8. Development experience of India - A comparison with neighbours	12	7
	<u>104</u>	<u>50</u>

Part A : Statistics for Economics

In this course, the learners are expected to acquire skills in collection, organisation and presentation of quantitative and qualitative information pertaining to various simple economic aspects systematically. It also intends to provide some basic statistical tools to analyse, and interpret any economic information and draw appropriate inferences. In this process, learners are also expected to understand the behaviour of various economic data.

Unit 1 : Introduction

5 Periods

What is Economics?

Meaning, scope and importance of statistics in Economics.

Unit 2 : Collection, Organisation and Presentation of data 25 Periods.

Collection of data - sources of data- primary and secondary; how basic data is

collected; methods of collecting data: Some important sources of secondary data: Census of India and National Sample Survey Organisation.

Organisation of Data: Meaning and types of variables; Frequency Distribution.

Presentation of data: Tabular Presentation and Diagrammatic Presentation of Data: (1) Geometric forms (bar diagrams and pie diagrams), (ii) Frequency diagrams (Histogram, polygon and ogive) and (iii) Arithmetic line graphs (time series graph).

Unit 3 : Statistical Tools and Interpretation

64 Periods

(For all the numerical problems and solutions, the appropriate economic interpretation may be attempted. This means, the students need to solve the problems and provide interpretation for the results derived)

Measures of Central Tendency-mean (simple and weighted), median and mode.

Measures of Dispersion- absolute dispersion (range, quartile deviation, mean deviation and standard deviation); relative dispersion (co-efficient of quartile-deviation, co-efficient of mean deviation, co-efficient of variation); Lorenz Curve: Meaning and its application.

Correlation- meaning, scatter diagram; Measures of correlation- Karl Pearson's method (two variable ungrouped data) Spearman's rank correlation.

Introduction to Index Numbers-meaning, types- wholesale price index, consumer price index and index of industrial production, uses of index numbers; Inflation and index numbers.

Unit 4 : Developing Projects in Economics

10 Periods

The students may be encouraged to develop projects, which have primary data, secondary data or both. Case studies of a few organisations / outlets may also be encouraged. Some of the examples of the projects are as follows (they are not mandatory but suggestive):

- (i) A report of demographics structure of your neighborhood;
- (ii) Consumer awareness amongst households.
- (iii) Changing prices of a few vegetables in your market.

(iv) Study of a cooperative institution: milk cooperatives.

The idea behind introducing this unit is to enable the students to develop the ways and means by which a project can be developed using the skills learned in the course. This includes all the steps involved in designing a project starting from choosing a title, exploring the information relating to the title, collection of primary and secondary data, analysing the data, presentation of the project and using various statistical tools and their interpretation and conclusion.

Part B: Indian Economic Development

Unit 5 : Development Policies and Experience (1947-90) : 18 Periods

A brief introduction of the state of Indian economy on the eve of independence. Common goals of Five year Plans.

Main features, problems and policies of agriculture (institutional aspects and new agricultural strategy, etc.) Industry (industrial licensing, etc.) and foreign trade.

Unit 6: Economic Reforms since 1991 : 14 Periods

Need and main features - liberalisation, globalisation and privatisation;
An appraisal of LPG policies.

Unit 7: Current challenges facing Indian Economy: 60 Periods

Poverty-absolute and relative; Main programmes for poverty alleviation: A critical assessment; Rural development: Key issues - credit and marketing- role of cooperatives: agricultural diversification; alternative farming - organic farming.

Human Capital Formation: How people become resource; Role of human capital in economic development; Growth of Education Sector in India.

Employment: Formal and informal, growth and other issues: Problems and policies.

Inflation : Problems and Policies.

Infrastructure: Meaning- and Types: Case Studies: Energy and Health:

Problems and Policies- A critical assessment.

Sustainable Economic Development: Meaning, Effects of Economic Development on Resources and Environment, including global warming.

Unit 8: Development Experience of India :

12 Periods

A Comparison with neighbours

India and Pakistan

India and China

Issues: growth, population, sectoral development and other developmental indicators.

Economics

Class - XI

Design of sample question paper for March - 2012 Examination

Time - 3 Hours

Max. Marks 95

The weightage to marks over different dimensions of the questions paper shall be as under

A. Weightage to subject unit :

S.No.	Content Unit	Marks
Part - A :		
Statistics for Economics		
1.	Introduction	03
2.	Collection, organisation and presentation of data	12
3.	Statistical tools and interpretation	30
	Total	45
4.	Developing project in economics	05
Part - B		
Indian Economic Development		
5.	Development policies and experience (1947-90)	10
6.	Economic reforms since - 1991	08
7.	Current challenges facing indian economy	25
8.	Development experience of India	
	A comparison with neighbours	07
	Total	50
	Grand Total	95

Weightage to Forms of Questions:

S.No.	Forms of Questions	Marks for Each Ques.	No. of Ques.	Total Marks
1.	Very short answer type (VSA)	1	10	10
2.	Short answer type (SA-I)	3	9	27
3.	Short answer type (SA-II)	4	7	28
4.	Long answer type (L A)	6	5	30
		Total	31	95

C. No. of Sections :

The question paper will have two Section A and B.

D. Scheme of Option

There will be no overall choice. However there is internal choice in one question of 3 marks, one question of 4 marks and one question of 6 marks in each section

E. Weightage to form of questions :

S. No.	Estimated Difficulty Level of Questions	Percentage
1.	Easy	30
2.	Average	50
3.	Above average	20

F. Typology of Questions :

In order to assess different abilities to the subject, the question paper is likely to include openended questions and numerical questions.

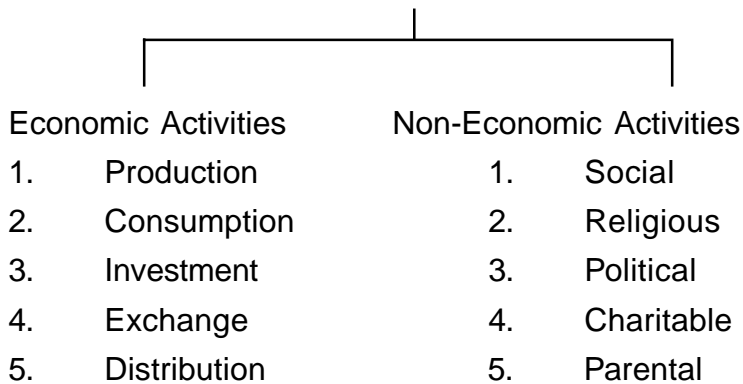
Unit-I

Introduction

Points to Remember

- * Economics :
- * Economics is a science that studies human behaviour as a relationship between ends scarce means which have alternative uses.
- * Scarcity means shortage of goods and resources in relation to their demand
- * Resources are
 - (A) Scarce / limited and
 - (B) have alternative uses

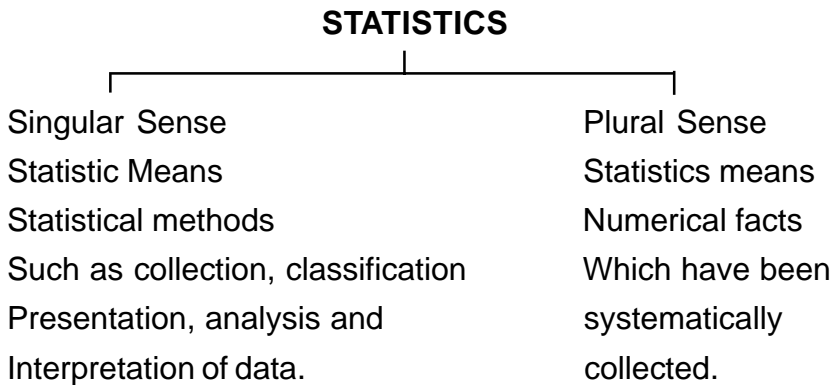
ACTIVITIES



- * Economic activities are those activities which are associated to earn money and wealth for life. These activities generate new income and increase the flow of goods and services.
- * Non economic activities are those activities which are not related to earn money and wealth. These activities neither generate income nor increase the flow of goods & services.
- * Consumer : Consumer is an economic agent who buys the goods

and services to satisfy his wants.

- * Producer : is one who produces goods and services for the generation of income.
- * Serviceholder : A person who is in job and gives his services as a factor of production to earn wage or salary. i.g. Govt. teacher.
- * Service Provider : A person who provides services to final consumer to earn money e.g. transporter, auto driver.
- * Statistics : Statistics is a method of taking decisions on the basis of numerical data.
- * Statistics can be defined in two ways



Scope of Statistics

In the olden days the use of statistics was restricted to deal with the affairs of the state. But now-a-days the scope of statistics has spread to all those areas where numerical facts are used such as economics, business, industry, medicine, physics, chemistry and numerous other fields of knowledge.

Importance of Statistics in Economics

1. It enables an economist to present economic facts in a precise and definite form.

2. Helps in condensing mass data into a few numerical measures.
3. Statistics is used in finding relationship between different economic factors.
4. Economic forecasting through statistical studies.
5. Helpful to formulate appropriate economic polices that solve economic problems.
6. Help to analyse the performance of policies applied before.

Function of Statistics

1. Statistics simplified complexities.
2. Statistics expresses facts in numbers.
3. Statistics presents data in condensed form.
4. Statistics compares different phenomena and reasures relationship between them.
5. Statistics is helpful in formation of policies.
6. Statistics is helpful in economic forecastings.

Limitations of Statistics

1. Statistics does not study individuals.
2. Statistics results might lead to fallacious conclusions.
3. Statistics deals with quantitative facts only.
4. Statistics laws are true only on averages.
5. Only experts can make the best possible use of statistics.
6. Uniformity and homogeneity of data is essential.

Unit-I

One- Mark-Questions

1. Define economics.
2. State the meaning of scarcity.
3. Write the meaning of statistics in plural sense.
4. Give meaning of statistics in singular sense.
5. State one limitation of statistics.
6. What do you mean by economic activity?
7. What are non-economic activities?.
8. Write one function of statistics.
9. Define consumer.
10. Who is a producer?.

3 Marks Questions

1. Briefly explain the term service holder and service provider with an example each.
2. What is the scope of statistics now a days?
3. Explain the importance of statistics in economics.
4. Distinguish between 'quantitative' and 'qualitative' data with example.
5. Production, consumption and distribution are economic activities. Explain.
6. Why do you want to study economics? Give reasons.
7. Which one of the following is economic activity? Give reason.
 - (i) Transporting sand from river bank to a town.
 - (ii) Attending marriage party.
 - (iii) Parental love and affection towards their children.
8. Which one of the following is non-economic activity? Give reason.

- (i) Production of printing press machines to print news papers.
- (ii) Service of doctor in a hospital.
- (iii) Organisation of free medical check up camp.

Unit-I

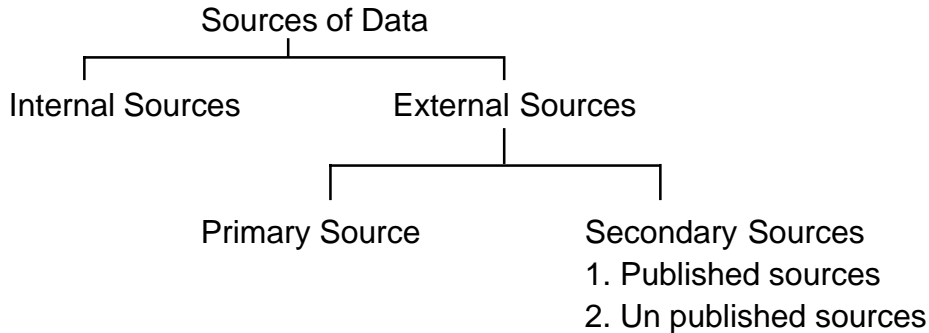
Answers of One mark questions

1. Economics is the study of how people and society choose the scarce resources that could have alternative uses to satisfy their unlimited wants.
2. Scarcity means shortage of goods and resources in relation to their demand.
3. In plural sense statistics means numerical facts which have been systematically collected.
4. In singular sense statistics means statistical methods such as collection, classification, presentation, analysis and interpretation of data.
5. Statistics deals with quantitative facts only.
6. An economic activity means that activity which is based on use of scarce resources for satisfaction of human wants.
7. The activities which have no economic aspect or are not related to earn money.
8. Statistics presents data in condensed form.
9. Consumer is an economic agent who buys the goods and services to satisfy his wants.
10. Producer is one who produces / sell goods and services for the generation of income.

Unit-2

Collection of Data

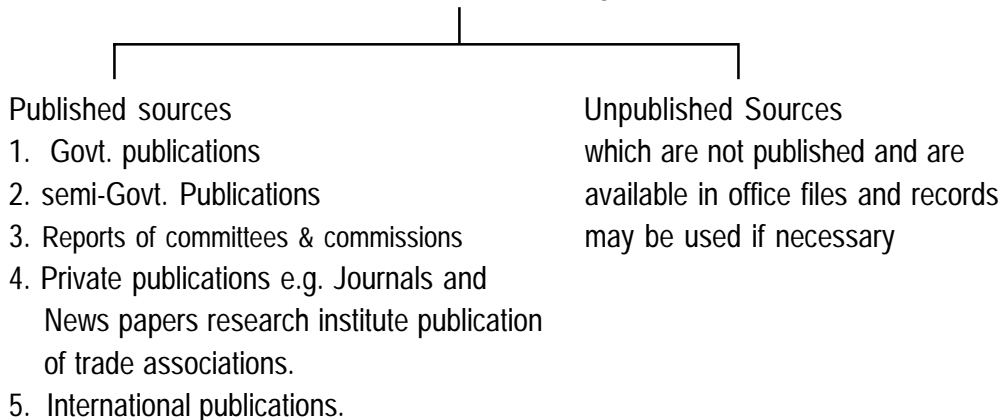
- * For statistical investigation, collection of data is the first and foremost



Methods of collecting primary data

1. Direct personal Interview
2. Indirect personal interview
3. Telephone interview
4. Mailed questionnaires
5. Questionnaires filled by enumerators.
6. Information by local correspondents.

Sources of secondary data



Important points to be kept in mind While drafting the questionnaire

- A. Introduction and purpose of investigation.
- B. Reasonable number of questions.
- C. Questions should be small & clear.
- D. Questions should be arranged logically.
- E. Instructions should be clear.
- F. Proper space for answer.
- G. Questions should be relevant to the investigation.
- H. Personal questions should be avoided.
- I. Avoid questions of calculations.

Methods of Sampling

Random Sampling

- a. Simple or unrestricted random sampling
- b. Restricted random sampling
 - i) Stratified
 - ii) systematic
 - iii) multistage or cluster sampling.

Non-Random Sampling

- a. Judgement sampling
- b. Quota sampling
- c- convenience sampling

* Census survey : In this method every element of population is included in the investigation.

* Sample Survey : In this method a group of units representing all the units of the population is investigated.

* Population or universe :

In statistics population or universe simply refers to an aggregate

of items to be studied for an investigation.

Sample : A group of items taken from the population for investigation and representative of all the items.

- * Sampling Errors : Sampling error is the difference between the result of studying a sample and the result of the census of the whole population.
- * Non - Sampling Error : Can occur in any type of survey whether it be a census or sample survey.

Sampling errors

1. Biased errors
2. unbiased errors

Non sampling errors

1. Error in data acquisition
2. Non. response error
3. Measurement error

- * Pilot survey : Before sending the questionnaire to the informants, it should be pre-tested. As a result of its shortcomings if any, can be removed. Such pre-testing named as "Pilot survey".
- * Primary data : Data originally collected in the process of investigation are known as primary data.
- * Secondary data : Which have been collected for some other purpose by some other agency are called secondary data.

Census of India and National Sample survey Organisation

- * The census of India provides the most complete and continuous

demographic records of population.

- * The NSSO was established by the Govt. of India to conduct nation wide survey on socio-economic issues like employment literacy, maternity, child care utilisation of public distribution system etc.
- * The data collected by NSSO survey are released through reports and its quarterly journal “Sarvekshana”.

Unit-2

One mark questions

1. What do you mean by primary data.
2. Give the meaning of secondary data.
3. Write the meaning of population in statistics.
4. Define sample.
5. What is sampling error?
6. What are non-sampling errors?
7. Write the name of statistical method which is less expensive and time saving.
8. Suppose there are 10 students in a class. Only three students to be selected out of them. How many samples are possible.
9. Expand NSSO.

3/4 marks questions.

1. Differentiate between primary and secondary data.
2. Write four merits of census method of collecting the data.
3. Mention three demerits of sample method of collecting the data.
4. Distinguish between sampling and non-sampling errors.
5. What is meant by census method?
6. What do you mean by random sampling?.
7. Discuss the term 'universe' and 'sample' with example.
8. Census of India is the main source of secondary data. explain.
9. What is pilot survey? explain its importance.

6 Marks questions

1. What do you understand by 'questionnaire? Write the essential characteristics of a good questionnaire.
2. Distinguish between census and sample method of collecting primary data.
3. What is NSSO? Write its functions.

4. Compare the census and sample method of collecting data with reference to reliability, time involved and cost.
5. What are the advantages and disadvantages of collecting primary data by personal interview and mailed questionnaire.

Unit-2

Answer of one mark questions

1. Primary data are original data which are collected by investigator himself or by enumerators deployed by the investigator for specified purpose.
2. The data which are obtained by the investigator/ enumerators from some one else records and were collected for some other purpose.
3. In statistics population or universe simply refers to an aggregate of items to be studied for an investigation.
4. Sample is a group of items taken from the population for investigation and representative of all the items or universe.
5. sampling error is the difference between the result of studying a sample and the result of the census of the whole population.
6. Non sampling errors can occur in any type of survey whether it be a census or sample survey such as measurement errors.
7. Sampling survey.
8. To select the sample of 3 students out of 10 students we can use random sampling either by using random number table or lottery method. No. of possible sample is 120.
9. National sample survey organisation.

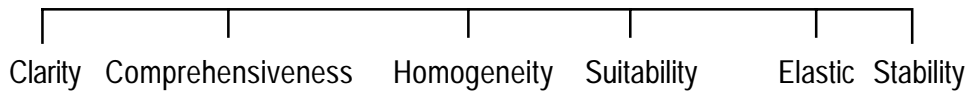
Organisation & Presentation of Data

* **Key points :**

organisation of data refers to the systematic arrangement of figures in such a form that comparison of masses of similar data may be facilitated and further analysis may be possible.

* Classification is the grouping of related facts into different classes.

Characterstics of Classification



* Variable is a characteristic or a phenomenon which is capable of being measured and changes its value overtime.

* Frequency is number of times on item repeats itself in the series.

* Continuous variables are those variables that increase continuously or in fraction.

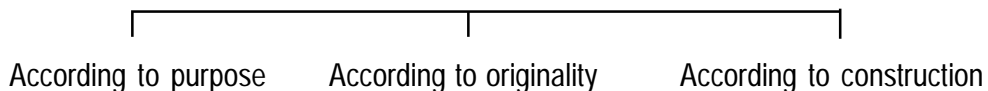
* A mass of data collected by investigator in its crude form called raw data. It is an unorganised mass of the various items.

* Both the lower limit and the upper limit of a class - interval are included in that class itself called inclusive series.

* When the class intervals are so fixed that the upper limit of one class - interval is the lower limit of the next class interval, it is called an exclusive series.

* The method of arranging data orderly in form of rows and columns is known as tabulation.

Kinds of tables



Features of a good table

- * Compatible title
- * Helpful in comparison.
- * Ideal size
- * Stubs
- * Clarification of units.
- * Percentage and ratio.
- * Source simple.

* Bar diagrams are those diagrams in which data are presented in the form of bars and rectangles.

* Utility / Merits of Diagrammatic Presentation.

1. Make simple to compare data
2. Attractive and eye catchers.
3. Longterm memorising effect.
4. Useful in comparative / relative study.

* Sub divided bar diagrams are those diagrams Which present simultaneously, total values and parts there in a set of a data.

* Pie or circular diagram is a circle divided into various segment showing the percent value of a series.

* Histogram is graphical presentation of a frequency distribution of a continuous series.

* Frequency polygon is drawn by joining the mid points of the tops of rectangles in a histogram.

* Frequency curve is obtained by joining the points of a frequency polygon through free hand smoothed curves not by straight lines.

* Cumulative frequency curves or ogive curve is the curve which is constructed by plotting cumulative frequency data on the graph paper in the form of a smooth curve.

1 Marks Questions

1. What is meant by organisation of data?
2. State the meaning of classification.
3. What is meant by homogeneity of data?
4. State the meaning of qualitative classification.
5. Define raw data.
6. Define discrete series or frequency array.
7. What is meant by exclusive series?
8. Write the name of the series which include all items up to its upper limit.
9. What is meant by frequency?
10. State the meaning of class intervals.
11. What is meant by tabulation?
12. Define caption as a part of table.
13. What is meant by manifold table?
14. Define bar diagrams.
15. State the meaning of sub-divided bar diagrams.
16. Define pie-diagram.
17. What is meant by histogram?
18. State the meaning of frequency curve.
19. Write the name of the curve which is formed by joining mid point of the top of all rectangles in a histogram.
20. Define the ogive curve.
21. What is meant by false base line.

3/4 Marks questions

1. State the objectives of classification.
2. Write the characteristics of a good classification.
3. Define the discrete and continuous variables with the help of example.

4. Write three importances of classification.
5. State the features of a good table.
6. State the merits of tabular presentation.
7. Define pie diagram. Write the steps of making pie diagram.
8. Write any three differences between tabular and diagrammatic presentation.
9. Make a frequency distribution from following data.

Use exclusive method and first class interval is 100-110

125 108 112 126 110 113 136 130 149 155
 120 130 126 138 125 132 119 125 140 148
 145 137 144 150 142 150 137 132 166 154

10. Present the following data by multiple bar diagram

Year	Ist class	IInd Class	Passed
2007	40	80	130
2008	80	100	120
2009	100	120	180

11. Present the following data of final consumption expenditure of a family with the help of a pie diagram.

Items	Expenditure (in Rupees)
Cloths	1600
Food	2400
Education	1000
Electricity	1500
Others	2500

12. Make a frequency distribution by using the class interval of 4. use exclusive method.

10 17 15 22 16 11 19 24 29 18
25 26 32 14 20 17 23 27 30 19
15 18 24 35 15 18 21 28 33 18
34 13 10 16 22 20 29 19 23 31

13. Make a Histogram from following data.

Marks	No. of students.
30-35	10
35-40	24
40-45	30
45-50	44
50-55	28
55-60	22
60-65	14
65-70	8

14. Present the following data of the construction of building of a school. with the help of pie diagram.

Items	Percentage expenditure.
Wages	15
Bricks	20
Wooden work	5
Paint	10
Steel	25
Cement	12
Supervision	7
Others	6

5/6 marks questions

1. Explain the parts of a good table.
2. Explain the precautions to be observed while constructing a good table.
3. Make “Less than” and “More than” ogive curves from following datas.

Marks	No. of Students
0-10	20
10-20	14
20-30	24
30-40	26
40-50	28
50-60	38
60-70	40
70-80	10

4. Make Histogram and frequency polygon from following data.

Marks	No. of students
30-35	10
35-40	12
40-45	20
45-50	26
50-55	38
55-60	28
60-50	18
65-70	12

Answer of 1 mark questions.

1. Organisation of data refers to the systematic arrangement of figures in such a form that comparison of masses of similar data may be facilitated and further analysis may be possible.
2. Classification is the grouping of related facts into different classes.
3. The similarity of features of all the units of a class called homogeneity.
4. The classification according to qualities or attributes of the data called qualitative classification.
5. A mass of data in its crude form is called raw data. It is an unorganised mass of the various items.
6. A discrete series of frequency array is that series in which data are presented in a way that exact measurement of items are clearly shown.
7. When the class intervals are so fixed that the upper limit of one class interval is the lower limit of the next class interval it is called an exclusive series.
8. Inclusive series.
9. Frequency is number of times an item repeats itself in the series.
10. The class intervals are the lowest and highest values that can be included in the class.
11. The method of arranging data orderly in form of rows and columns is known as tabulation.
12. Caption is the title given to the columns of a table. It indicates information contained in the columns.
13. Manifold table shows more than three characteristics of the data.
14. Bar diagrams are those diagrams in which data are presented in the form of bars and rectangles.
15. Sub divided bar diagrams are those diagrams in which more than

one data are presented simultaneously, total values and parts there in a set of data.

16. Pie diagram is a circle divided into various segments showing the percent value of a series.
17. Histogram is a graphical presentation of a frequency distribution of a continuous series.
18. Frequency curve is obtained by joining the points of a frequency polygon through freehand smoothed curves not by straight lines.
19. Frequency polygon.
20. It is the curve which is constructed by plotting cumulative frequency data on the graph paper in a form of a smooth curve.
21. When there is a large gap between zero and minimum value of a variable than to minimise this gap we use false base line.

Chapter-5
MEASURES OF CENTRAL TENDENCY

Points to Remember :-

- * A central tendency is a single figure that represents the whole mass of data.
- * Arithmetic mean or mean is the number which is obtained by adding the values of all the items of a series and dividing the total by the number of items.
- * When all items of a series are given equal importance than it is called simple arithmetical mean and when different items of a series are given different weights according with their relative importance is known weighted arithmetic mean.
- * Median is the middle value of the series when arranged in ascending order.
- * When a series is divided into more than two parts, the dividing values are called partition values.
- * If a statistical series is divided into four equal parts, the end value of each part is called a quartile and denoted by 'Q'.
- * The first quartile or lower quartile (Q1) is that value which divides the first half of an orderly arranged series into two equal parts.
- * Third quartile or upper quartile (Q3) is that value which divides the latter half of an ascending orderly arranged series into two equal parts.
- * Mode is the value which occurs most frequently in the series, that is modal value has the highest frequency in the series.

- * Main purposes and functions of averages.
 - (i) To represent a brief picture of data.
 - (ii) Comparison.

- (iii) Formulation of policies.
- (iv) Basis of statistical analysis.
- (v) One value for all the group or series.

* Essentials of a good average.

- (i) Easy to understand.
- (ii) Easy to compute
- (iii) Rigidly defined.
- (iv) Based on all the items of series.
- (v) Certain in character
- (vi) Least effect of a change in the sample.
- (vii) Capable of algebraic treatment.

* Merits of Arithmetic mean

- (i) Simplicity
- (ii) Certainty
- (iii) Based on all values.
- (iv) Algebraic treatment possible.
- (v) Basis of comparison.
- (vi) Accuracy test possible.

* Demerits of Arithmetic mean.

- (i) Effect of extreme values.
- (ii) Mean value may not figure in the series
- (iii) unsuitability.
- (iv) Misleading conclusions.
- (v) Can not be used in case of qualitative phenomenon.

* Merits of Median

- (i) Simple measure of central tendency.

- (ii) It is not affected by extreme observations.
- (iii) Possible even when data is incomplete.
- (iv) Median can be determined by graphic presentation of data.
- (v) It has a definite value.

* Demerits of median.

- (i) Not based on all the items in the series.
- (ii) Not suitable for algebraic treatment.
- (iii) Arranging the data in ascending order takes much time.
- (iv) Affected by fluctuations of items.

* Merits of mode

- (i) Simple and popular measure of central tendency.
- (ii) It can be located graphically with the help of histogram.
- (iii) Less effect of marginal values.
- (iv) No need of knowing all the items of series.
- (v) It is the most representative value in the given series.

* Demerits of mode

- (i) It is an uncertain measure
- (ii) It is not capable of algebraic treatment.
- (iii) Procedure of grouping is complex.
- (iv) It is not based on all observations.

* Relation among mean, median and mode

$$\text{Mode} = 3 \text{ median} - 2 \text{ mean}$$

* Location of median by graph -

- (i) By 'Less than' or 'More than' ogives method a frequency distribution series is first converted into a less than or more than cumulative series as in the case of ogives, data are presented graphically to make a 'less than' or 'more than' ogive $N/2$ item of the series is determined and from this point (on the y-axis of the

graph) a perpendicular is drawn to the right to cut the cumulative frequency curve. The median value is the one where cumulative frequency curve cuts corresponding to x-axis.

(ii) Less than and more than ogive curve method present the data graphically in the form of 'less than' and 'more than' ogives simultaneously. The two ogives are superimposed upon each other to determine the median value. Mark the point where the ogive curve cut each other, draw a perpendicular from that point on x-axis, the corresponding value on the x-axis would be the median value.

* Graphic representation of mode -

Prepare a histogram from the given data find out the rectangle whose height is the highest. This will be the modal class. Draw two lines - one joining the top right point of the rectangle preceding the modal class with top right point of the modal class. The other joining the top left point of the modal class with the top left point of the post modal class. From the point of intersection of these two diagonal lines, draw a perpendicular on horizontal axis i.e. x-axis the point where this perpendicular line meets x-axis, gives us the value of mode.

* Formulae of calculating arithmetic mean -

Types of series	Direct Method	Shortcut Method	Step deviation method
Individual Series	$\bar{X} = \frac{\sum X}{N}$	$\bar{X} = A + \frac{\sum d}{N}$	$\bar{X} = A + \frac{\sum d' \times C}{N}$
Discrete Series	$\bar{X} = \frac{\sum fx}{N}$	$\bar{X} = A + \frac{\sum fd}{N}$	$\bar{X} = A + \frac{\sum fd' \times C}{N}$
Continuous Series	$\bar{X} = \frac{\sum fm}{N}$	$\bar{X} = A + \frac{\sum fd}{N}$	$\bar{X} = A + \frac{\sum fd' \times C}{N}$

* Weighted mean - $\bar{X} = \frac{\sum W X}{\sum W}$

* Formulae of calculating median and partition values -

Measure	Individual Series	Discrete Series	Continuous Series	
	Size of item	Size of item	Size of item	Formula
Median	$\frac{N+1}{2}^{\text{th}} = \text{item}$	$\frac{N+1}{2}^{\text{th}} = \text{item}$	$\frac{N}{2}$	$L_1 + \left(\frac{\frac{N}{2} - cf}{f} \right) \times c$
First Quartile Q_1	$\frac{N+1}{4}^{\text{th}} = \text{item}$	$\frac{N+1}{4}^{\text{th}} = \text{item}$	$\frac{N}{4}$	$L_1 + \left(\frac{\frac{N}{4} - cf}{f} \right) \times c$
Third Quartile Q_3	$3 \frac{(N+1)}{4}^{\text{th}} = \text{item}$	$3 \frac{(N+1)}{4}^{\text{th}} = \text{item}$	$3 \frac{(N)}{4}$	$L_1 + \left(\frac{3 \frac{N}{4} - cf}{f} \right) \times c$
Decile D_6	$6 \frac{(N+1)}{10}^{\text{th}} = \text{item}$	$6 \frac{(N+1)}{10}^{\text{th}} = \text{item}$	$6 \frac{(N)}{10}$	$L_1 + \left(\frac{\frac{6N}{10} - cf}{f} \right) \times c$
Percentile P_{65}	$65 \frac{(N+1)}{100}^{\text{th}} = \text{item}$	$65 \frac{(N+1)}{100}^{\text{th}} = \text{item}$	$65 \frac{(N)}{100}$	$L_1 + \left(\frac{\frac{65N}{100} - cf}{f} \right) \times c$

* Formula of calculating mode in continuous series -

Mode or Z - $L_1 + \frac{f_1 - f_0}{2f_1 - f_0 - f_2} \times c$

- Where,
- L_1 = Lower limit of modal class
 - f_0 = Frequency of the group preceding the modal class
 - f_1 = Frequency of the modal class.
 - f_2 = Frequency of the group succeeding the modal class
 - c = Magnitude or class interval of the modal class

ONE MARK QUESTIONS

1. What is meant by central tendency?.
2. What are the types of mean?.
3. Name any two partition values.
4. Give the meaning of arithmetic average.
5. Define mode.
6. Pocket money of 8 students is Rs. 6,12,18, 24, 30, 36, 42 and 48, calculate mean.
7. Write the formula for weighted mean.
8. What is the relation among the mean, median and mode?
9. Which partition value divide the total set of values into four equal parts.
10. Give the meaning of combined mean.
11. A shoes manufacturing company only manufactures shoes for adults. Company wants to know the most popular size. Which type of central tendency will be the most appropriate?
12. Which diagram is used for finding the value of mode graphically?
13. Mention one demerit of mode.
14. If the values of mean and median are 40 and 48. Find out the most probable value of mode.
15. Calculate mode from the following data 10, 8, 10, 6, 4, 12, 10, 8, 10, 18, 16, 10, 18, 10, 10.
16. How is the value of median computed with the help of ogive curves?.
17. What is positional average?
18. What is the sum of deviations taken from mean in a series.

3/4 MARKS QUESTIONS

1. Give four objectives of statistical average.
2. Show that the sum of deviations of the values of the variable from their arithmetic mean is equal to zero.
3. Write the merits of median.
4. Calculate median from the following data

X	10	20	30	80	90	100
f	3	7	6	2	8	4

(Ans. 30)

5. State three advantages of mode.
6. What are four demerits of mean.
7. Average income of 50 families is Rs. 3000.
Average income of 12 families is Rs. 18000.
Find the average income of rest of the families (Ans. 3378.95)
8. What are the essentials of a good average.
9. Mean marks obtained by a student in his five subjects are 15 in english he secures 8 marks, in economics 12, in mathematics 18 and in commerce 9, Find out the marks he secured in statistics.
10. What is meant by weighted arithmetic mean? How is it calculated?.
11. Name and define three statistical averages.
12. State any two reasons of difference between median and mode.
13. Explain the characteristics, merits and demerits of mean.

6 MARKS QUESTIONS

1. Explain the step deviation method of calculating arithmetic mean, taking an imaginary set of data.
2. Describe the objects and functions of measures of central tendency.
3. Why is the Arithmetic mean the most commonly used measure of central tendency?
4. What do you mean by mode? Discuss the methods of calculating it.
5. Explain the characteristics, merits and demerits of median
6. Rahul made the following runs in different matches.

Runs	5-15	15-25	25-35	35-45	45-55
Frequency	10	12	17	19	22

Calculate the average mean of the runs by step deviation method.
(Ans 33.87)

7. Find the missing frequency if the mean of following data is 44.8.

X	20	30	40	50	60	70
F	5	?	15	10	8	5

8. Find the median of the following data.

Marks	46-50	41-45	36-40	31-35	26-30	21-25	16-20	11-15
No. of Students.	3	11	22	35	26	13	10	7

(Ans. 31.7)

9. From the following table find mode with the help of graphical representation and check your result with mathematical formula.

Expenditure	0-10	10-20	20-30	30-40	40-50
No. of Families	14	23	27	21	25

(Ans. 24)

10. From the following data find out the value of median graphically.

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No. of Student	6	11	20	12	6	5

(Ans. 26.5)

ANSWER OF ONE MARK QUESTIONS

1. A Single figure that represents the whole series is known as central tendency.
2. There are two types of mean - simple and weighted.
3. (i) Quartile (ii) Decile (iii) Percentile
4. When the sum of all items is divided by their number is known as arithmetic average.
5. The value which occurs most frequently in series is known as mode.

$$\begin{aligned} 6. \quad \bar{X} &= \frac{X_1 + X_2 + X_3 + \dots + X_N}{N} \\ &= \frac{6+12+18+24+30+36+42+48}{8} \\ &= \frac{216}{8} = 27 \end{aligned}$$

$$7. \quad \bar{X}_W = \frac{\sum W X}{\sum W}$$

8. Mode = 3 median - 2 mean
9. Quartile
10. When the mean of two or more than two series is computed collectively, it is known as combined mean.
11. Mode
12. Histogram
13. One demerit of mode is that it is not capable of algebraic treatment.
14. Mode = 3 median - 2 mean
 $= (3 \times 48) - (2 \times 40) = 144 - 80$
 $= 64$

15. Mode = 10
16. The point of intersection where 'less than' ogive curve and 'more than' ogive curve intersect each other gives us the value of median.
17. Those averages whose value is worked out on the basis of their position in the statistical series.
18. Zero.

*UNIT - 3 : STATISTICAL TOOLS AND
INTERPRETATION*

Ch-6 MEASURES OF DISPERSION

Points to remember

- * Dispersion is a measure of the variation of the items from central value.
- * The measures of dispersion are important to compare uniformity, consistency and reliability amongst variables/ series
- * Absolute measures of dispersion are expressed in terms of original unit of series.
- * Relative measures are expressed in ratios or percentage, also known as coefficients of dispersion.

MEASURES OF DISPERSION

(i) Range	(ii) Inter quartile range	(iii) Quartile deviation or Semi Inter- quartile range
(iv) Mean deviation	(v) Standard Deviation	(vi) Lorenz curve

- * **Range :** Range is defined as the difference between two extreme observations i.e. the largest and the smallest value.

Symbolically

$$R = L - S$$

Where

R = Range

L = Largest Value

S = Smallest value

- * Coefficient of range = $\frac{L - S}{L + S}$

- * **Inter Quartile Range :**

Inter quartile range is the difference between upper quartile and lower quartile.

Inter-quartile range = Q3 - Q1

Where Q3 = Third quartile or upper quartile.

Q1 = First quartile or lower quartile

* Quartile Deviation :

Quartile deviation is known as half of difference of third quartile (Q3) and first quartile (Q1). It is also known as semi inter quartile range.

$$Q. D = \frac{Q3 - Q1}{2}$$

Where Q.D = Quartile deviation

Q3 = Third quartile or upper quartile.

Q1 = First quartile of lower quartile.

Coefficient of quartile deviation

$$\text{Coefficient of Q.D} = \frac{Q3 - Q1}{Q3 + Q1}$$

Mean Deviation

Mean deviation / average deviation is the arithmetic mean of the deviations of various items from their average (mean, median or mode) generally from the median.

Calculation of mean deviation

Individual Series

Discrete Series

Continuous Series

$$M.D = \frac{\sum |D|}{N}$$

$$M.D = \frac{\sum f |D|}{N}$$

$$\frac{\sum f |D|}{N}$$

Where,

MD = Mean deviation

|D| = Deviations from mean or median ignoring \pm Signs

N = Number of item (Individual Series)

N = Total number of Frequencies (Discrete and continuous series)

F = Number of frequencies.

Coefficient of mean deviation

$$\frac{\text{M.D.}}{\bar{X}} \quad \text{or} \quad \frac{\text{M.D.}}{M} \quad \text{or} \quad \frac{\text{M.D.}}{Z}$$

Standard Deviation :

Standard deviation is the best and widely used measure of dispersion. Standard deviation is the square root of the arithmetic mean of the squares of deviation of its items from their arithmetic mean.

Calculation of standard deviation in individual series.

Actual mean method.

$$\sigma = \frac{\sum X^2}{N}$$

Where σ = Standard Deviation
 X^2 = Square of deviation taken from mean
N = Number of items

Shortcut method or assumed mean method

$$\sigma = \sqrt{\frac{\sum dx^2}{N} - \left[\frac{\sum dx}{N} \right]^2}$$

Where dx^2 = Square of deviation taken from assumed mean.

Calculation of standard deviation in discrete series :

Actual mean method or direct method

$$\sigma = \sqrt{\frac{\sum fX^2}{N}}$$

Where σ = S. D.
 $\sum fX^2$ = Sum total of the squared deviations
Multiplied by frequency

N = Number of pair of observation.

Short cut method or assumed mean method

$$\sigma = \sqrt{\frac{\sum fd^2}{N} - \left[\frac{\sum fd}{N}\right]^2}$$

Where σ = S. D.

$\sum fd^2$ = Sum total of the squared deviations

Multiplied by frequency

$\sum fd$ = Sum total of deviations multiplied by frequency.

N = Number of pair of observations.

Step deviation method
$$\sigma = \sqrt{\frac{\sum fd^2}{N} - \left[\frac{\sum fd^1}{N}\right]^2} \times c$$

σ = Standard Deviation

$\sum fd^2$ = Sum total of the squared step deviations multiplied by frequency.

$\sum fd^1$ = Sum total of step deviations multiplied by frequency

C = Common factor

N = Number of pair of observation

Calculation of standard deviation in continuous series.

Actual mean method

$$\sigma = \sqrt{\frac{\sum fX^2}{N}}$$

σ = S.D.

$\sum fX^2$ = Sum total of the squared deviation multiplied by frequency.

N = Number of pair of observations.

Shortcut method or assumed mean method

$$\sigma = \sqrt{\frac{\sum fd^2}{N} - \left[\frac{\sum fd}{N}\right]^2}$$

Step deviation method.

$$\sigma = \sqrt{\frac{\sum fd^{12}}{N} - \left[\frac{\sum fd^1}{N}\right]^2} \times c$$

Coefficient of variation

When two or more groups of similar data are to be compared with respect to stability (or uniformity or consistency or homogeneity), Coefficient of variation is the most appropriate measures.

$$C V = \frac{\sigma}{\bar{X}} \times 100$$

Where C. V = Coefficient of variation

σ = Standard deviation

\bar{X} = Arithmetic mean

LORENZ CURVE :

- * The Lorenz curve devised by Dr. Max O. Lorenz, is a graphic method of studying dispersion.
- * The Lorenz curve always lies- below the line of equal distribution, unless the distribution is uniform.
- * The Area between the line of equal distribution and the plotted curve gives the extent of inequality in the items. The larger the area, more is the inequality.

ONE MARK QUESTIONS

1. What is inter quartile range?.
2. Give the formula of calculating coefficient of variation.
3. What is Lorenz Curve?
4. Calculate range
22, 35, 32, 45, 42, 48, 39
5. Which graphical method is used to measure dispersion?
6. Give the meaning of dispersion.
7. How is coefficient of mean deviation computed?
8. Which measure of dispersion covers middle 50% of the items?
9. Write one major demerit of mean deviation.
10. What do you mean by relative measure of dispersion?
11. What is a line of equal distribution.
12. Write two demerits of range.
13. Which is most widely used and best measurement of dispersion.
14. Give the formula of calculating quartile deviation.
15. Write two uses of range.

SHORT ANSWER TYPE QUESTIONS (3/4 MARKS)

1. Mention important measures of dispersion.
2. Mention any two merits and two demerits of mean deviation.
3. Distinguish between mean deviation and standard deviation.
4. What do you understand by dispersion?
Describe the various methods of computing dispersion.
5. Discuss the relative merits of range, mean deviation and standard deviation as measures of dispersion.
6. Find the range and coefficient of range of the following :

Marks :	10	20	30	40	50	60	70
No. of Students :	8	12	7	30	10	5	2

(Range = 60 marks : Coefficient of range = 0.75)

7. Find out the value of quartile deviation and its coefficient from the following data.

Roll No. :	1	2	3	4	5	6	7
Marks :	20	28	40	12	30	15	50

(Quartile deviation - 12.5 marks)

(Coefficient of quartile deviation = 0.45)

8. Calculate mean deviation from median and its coefficient from the following data :

100, 150, 80, 90, 160, 200, 140

(Mean deviation from median = 34.28)

(Coefficient of mean deviation = 0.74)

9. Calculate semi-interquartile range and its coefficient of the following data.

Marks :	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Std.	4	8	11	15	12	6	3

(Q. D = 11.55 Coefficient of Q.D = 0.337)

10. Calculate the standard deviation for the following data

5, 8, 7, 11, 14

(S. D = 3.16)

11. Coefficient of variation of two series are 58% and 69% and their standard deviation are 21.2 and 15.6 what are their means?

(Means \bar{X} = 36.55 and 22.60)

12. From the following data of two workers, identify who is more consistent worker?

	A	B
Average time in completing a job	40	42
Standard Eeviation	8	6

(Worker B is more consistent as his C.V.

(14.29%) is less than that of worker A (20%)

LONG ANSWER TYPE QUESTIONS (6 MARKS)

1. Discuss the merits, demerits and uses of range.
2. What is the meaning of Lorenz curve? State the steps involved in drawing a Lorenz curve.
3. What do you mean by mean deviation? In what way is mean deviation a better measure of dispersion than range and quartile deviation?
4. What do understand by dispersion? Describe the various methods of computing dispersion?.
5. Find the range and coefficient of range of the following:

Age in years :	5-10	10-15	15-20	20-25
Frequency :	10	15	20	5

(Range = 20 Coefficient of range = 0.67)

6. Find out quartile deviation, Interquartile range and coefficient of quartile deviation of the following series :

Height in inches:	58	59	60	61	62	63	64	65	66
No. of Plants:	2	3	6	15	10	15	4	3	1

(Q.D. = 1, Inter quartile range = 2 Coeff 4QD = 0.016)

7. Calculate mean deviation from median.

No. of fruits per plant :	0	1	2	3	4	5	6	7	8	9	10
No. of Plants :	2	5	7	11	18	24	12	8	6	4	3

(Me = 5, M.D = 1.68)

8. Find mean deviation from median of the marks secured by 100 students in a class test as given below :

Marks :	60-63	63-66	66-69	69-72	72-75
No. of Std.	5	18	42	27	8

(M. D. = 2.26)

9. Calculate coefficient of quartile deviation from the following data:

X (lessthan)	200	300	400	500	600
F	8	20	40	46	50

(Coefficient of quartile deviation 0.24)

10. Calculate standard deviation of the given data :

Size :	3	4	5	6	7	8	9
Frequency :	3	7	22	60	85	32	8

(S.D = 1.149)

11. Calculate standard deviation from the following series :

Class :	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency :	2	4	6	6	6	4	2

(S.D = 15.81)

12. The given table shows the daily income of workers of two factories. Draw the Lorenz curves for both the factories.

Daily Income (Rs.) 0-100 100-200 200-300 300-400 400-500

Factory	A	8	7	5	3	2
Factory	B	15	5	2	1	1

13. The prices of share of company x and company y are given below. State, which company is more stable?

Company X	25	50	45	30	70	42	36	48	34	60
Company Y	10	70	50	20	95	55	42	60	48	80

(C.V. of prices of share of x co. = 29.72%

C.V. of prices of share of Y co = 45.94%

Prices of share of x co. is more stable.

14. Calculate coefficient of variation from the data given below :

X :	10	11	12	13	14	15	16
F :	10	25	15	5	15	20	10

($\bar{X} = 12.9$, S.D = 1.997, C.V. 15.5%)

15. Compare range, quartile deviation, mean deviation and standard deviation on the basis of calculations.
16. What is meant by mean deviation? Give the steps for calculating mean deviation in case of individual series.
17. Calculate the standard deviation from following data by step deviation method.

X :	0-10	10-20	20-30	30-40
F :	2	3	4	1

($\sigma = 9.165$)

ANSWERS OF VERY SHORT TYPE QUESTIONS (01 MARKS)

1. The difference in the two values of quartile is called inter quartile range (Q3 - Q1)
2. Coefficient of variation = $\frac{\sigma}{\bar{X}} \times 100$
3. Lorenz curve is the graphic presentation of studying dispersion.
4. Range = Largest value - Smallest value
= 48 - 22
= 26
5. Lorenz curve method is used to measure dispersion.
6. Dispersion is a measure of the variation of the item from a central value.
7. Mean deviation = $\frac{\sum f |D|}{N}$
8. Inter quartile range
9. The major demerit of mean deviation is that it ignores \pm signs.
10. Relative measures are expressed in ratios or percentage, also known as coefficients of dispersion.
11. While drawing Lorenz curve zero of X-axis and 100 on y-axis are joined by a line. This line is known as line of equal distributions.
12. Demerits of range
 - (i) It is not based on all the observation of series.
 - (ii) It is very much affected by extreme items.
13. The most widely used and best measurement of dispersion is standard deviation.
14. Quartile deviation = $\frac{Q3 - Q1}{2}$
15. Two uses of range -
 - (i) Quality control
 - (ii) Measure of fluctuations.

UNIT - 3 : STATISTICAL TOOLS AND INTERPRETATION

Correlation

Points to Remember

- * Meaning of correlation :
Correlation is a statistical tool which studies the relationship between two variables. For e.g. change in price leads to change in quantity demanded.
- * Correlation studies and measures the direction and intensity of relationship among variables. It measures covariation not causation.
- * Types of Correlation
Correlation is classified into positive and negative correlation.

The correlation is said to be positive when the variables move together in the same direction. For e.g. sale of Ice cream and temperature move in same direction.

The correlation is said to be negative when the variables move in opposite direction. For e.g. When you spend more time in studying chances of your failing decline.

- * Examples of positive correlation are :
 1. Price of commodity and amount of supply
 2. Increase in height and weight.
 3. Age of husband and age of wife.
 4. The family income and expenditure on luxury items.

* Examples of negative correlation are :

1. Sale of woollen garments and day temperature.
2. Demand of a commodity may go down as a result of rise in prices.
3. Yield of crops and price.

* Degree of Correlation :

Degree	Positive	Negative
Perfect	+ 1	- 1
High	Between + 0.75 and + 1	Between -0.75 and -1
Moderate	Between + 0.25 and + 0.75	Between -0.25 & -0.75
Low	Between 0 and + 0.25	Between 0 and - 0.25
Zero	0	0

* Methods of estimating correlation.

- (a) Scatter diagram
- (b) Karl pearson's coefficient of correlation.
- (c) Spearman's rank correlation.

-- Scatter diagram offers a graphic expression of the direction and degree of correlation.

-- Karl pearson's coefficient of correlation is a quantitative method of calculating correlation. It gives a precise numerical value of the degree of linear relationship between two variables.

-- Karl pearson's coefficient of correlation is also known as product moment correlation.

Formula :

$$r = \frac{\sum x y}{N\sigma x\sigma y}$$

Here,

r = Coefficient of correlation

$$x = (X - \bar{X})$$

$$y = (Y - \bar{Y})$$

σ_x = Standard deviation of
X - series

σ_y = Standard deviation of
Y- Series

N = Number of observations

Karl pearson's coefficient of correlation is calculated by following methods :

(a) Actual mean method :
$$r = \frac{\sum x y}{\sqrt{\sum x^2 \cdot \sum y^2}}$$

Here, r = Coeff. of correlation

$$x = (X - \bar{X})$$

$$y = (Y - \bar{Y})$$

(b) Assumed mean method :

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

(or)

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

Here,

dx = Deviations of x- series from assumed mean = $(X-A)$

dy = Deviation of Y- series from assumed mean = $(Y-A)$

$\sum dx \cdot dy$ = Sum of the multiple of dx and dy

$\sum dx^2$ = Sum of the square of dx

$\sum dy^2$ = Sum of the square of dy

$\sum dx$ = Sum of the deviation of x- series

$\sum dy$ = Sum of the deviation of Y-series

N = Number of pairs of observations

(c) Step deviation method :

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

Here, $dx' = \frac{dx}{C_1}$

$$dy' = \frac{dy}{C_2}$$

C_1 is common factor for series - x

C_2 is common factor for series - y

* Properties of correction coefficient (r)

(i) Correlation coefficient (r) has no unit

(ii) A negative value of r indicates an inverse relation.

(iii) If r is positive then two variables move in the same direction.

(iv) The value of r lies between minus one (1) and plus one,

$$-1 \leq r \leq 1$$

(v) If r is zero, the two variables are uncorrelated.

(vi) If $r = +1$ or $r = -1$, the correlation is perfect.

(viii) A high value of r indicates strong linear relationship and a low

value or r indicates a weak linear relationship.

- (viii) The value of r is unaffected by the change of origin and change of scale.

Given two variables x and y let us define two new variables

$$U = \frac{X - A}{B}; \quad V = \frac{Y - C}{D}$$

Here A and C are assumed means of X and Y respectively. B and D are common factors. They $r_{xy} = r_{uv}$

- Spearman's rank correlation method is used to calculate coefficient of correlation of qualitative variables such as beauty, bravery, wisdom, ability, virtue etc.

Formula $r_s = 1 - \frac{6\sum D^2}{N^3 - N}$

Here, r_s = Coefficient of rank correlation

D = Rank differences

N = Numbers of pairs

When ranks are repeated the formula is

$$r_s = \frac{6[\sum d^2 + \frac{(m_1^3 - m_1)}{12} + \frac{(m_2^3 - m_2)}{12} + \dots]}{N^3 - N}$$

Where m_1, m_2, \dots are number of repetitions of ranks.

VERY SHORT ANSWER TYPE QUESTIONS (ONE MARK QUESTIONS)

1. What is meant by correlation?
2. List some variables where accurate measurement is difficult.
3. What is negative correlation?
4. Give the meaning of positive correlation.
5. What is the range of simple correlation coefficient?
6. State the type of correlation when two variables change in the same ratio.
7. Give two examples of positive correlation?
8. Mention the principal short coming of scatter diagram as a method of estimating correlation.
9. Give two examples of negative correlation.
10. When is rank correlation method used?
11. Mention the names of different methods for measuring correlation.
12. What is the main demerit of spearman's rank method?
13. Mention the principal short coming of Karl Pearson's coefficient of correlation.
14. If $r_{xy} = 0$, then the variables x and y are
 - (i) Linearly related
 - (ii) not linearly related
 - (iii) Independent
15. The unit of correlation coefficient between height in feet and weight in kilograms is
 - (i) kg / feet
 - (ii) percentage
 - (iii) non- existent
16. Which method of measuring correlation measures any type of relationship?

SHORT ANSWER TYPE QUESTIONS
(3/4 MARK QUESTIONS)

1. What is meant by correlation? What are the properties of coefficient of correlations?
2. Interpret the values of r as 1, - 1 and 0.
3. Calculate the correlation coefficient between x and y and comment on their relationship :

X	-3	-2	-1	1	2	3
Y	9	4	1	1	4	9

(Ans. $r = 0$)

4. Calculate the correlation coefficient between x and y and comment on their relationship :

X	1	3	4	5	7	8
Y	2	6	8	10	14	16

(Ans. $r = +1$)

5. Plot the following data as a scatter diagram and comment over the result :

X	11	10	15	13	10	16	13	8	17	14
Y	6	7	9	9	7	11	9	6	12	11

6. Calculate Karl Pearson's coefficient of correlation on the following data :

X	15	18	21	24	27	30	36	39	42	48
Y	25	25	27	27	31	33	35	41	41	45

(Ans. $r = 0.98$)

7. From the following data, compute the product movement correlation between x and y :

- | | <u>X series</u> | <u>Y series</u> |
|---|-----------------|-----------------|
| (i) No. of itmes | 15 | 15 |
| (ii) Arithmetic mean | 25 | 18 |
| (iii) Square of deviations
from arithmetic mean | 136 | 138 |
| (iv) Summation of products of deviations of X and Y series from their
respective means = 122 | | |
- (Ans. $r = 0.89$)

8. Number of pairs of observations of x and y series = 10

X series : Arithmetic average = 65
Standard deviation = 23.33

Y series : Arithmetic average = 66
Standard deviation = 14.9

Summation of products of corresponding deviation of X and Y series = + 2704

calculate product moment correlation of x and y series.

(Ans. $r = +0.78$)

9. Calculate spearman's rank correlation from the following data :

X	10	12	8	15	20	25	40
Y	15	10	6	25	16	12	8

(Ans. $r = +0.14$)

10. Two judges in a beauty competition rank the twelve entries as follows:

X	1	2	3	4	5	6	7	8	9	10	11	12
Y	12	9	6	10	3	5	4	7	8	2	11	1

(Ans $r = -0.45$) Calculate rank correlation coefficient.

11. Calculate the rank coefficient of correlation of the following data:

X :	68	75	90	75	50	62	40	35
Y :	10	12	14	10	10	13	9	8

(Ans. $r = + 0.76$)

12. Does correlation imply causation?
13. Does zero correlation mean independence?
14. Why does rank correlation coefficient differ from Karl Pearson's coefficient of correlation?
15. When is rank correlation coefficient more precise than simple correlation coefficient?

(LONG ANSWER TYPE QUESTIONS)

6 MARKS QUESTIONS

1. Discuss Karl Pearson's method of calculating coefficient of correlation.
Give its merits and limitations.
2. In a beauty contest, three judges accorded following ranks to 10 participants :

Judge I	1 6 5 10 3 2 4 9 7 8
Judge II	3 5 8 4 7 10 2 1 6 9
Judge III	6 4 9 8 1 2 3 10 5 7

Find out by Spearman's rank difference method which pair of judges has a common taste in respect of beauty.

(Ans. $r_s I \& II = - 0.21$; $r_s II \& III = -0.29$; $r_s I \& III = + 0.64$)

3. What are the advantages of spearman's rank correlation coefficient over Karl pearson's correlation coefficient? Explain the method of calculating spearman's rank correlation coefficient.
4. Following are the heights and weights of 10 students in a class. Draw a scatter diagram and indicate whether the correlation is positive or negative.

Height (in inches)	72	60	63	66	70	75	58	78	72	62
Weight (in kg.)	65	54	55	61	60	54	50	63	65	50

5. Calculate the correlation coefficient of the marks obtained by 12 students in Mathematics and statistics and interpret it.

Marks (in Maths)	50	54	56	59	60	62	61	65	67	71	71	74
Marks (in statistics)	22	25	34	28	26	30	32	30	28	34	36	40

(Ans : $r = + 0.78$)

ANSWER OF ONE MARK QUESTIONS :

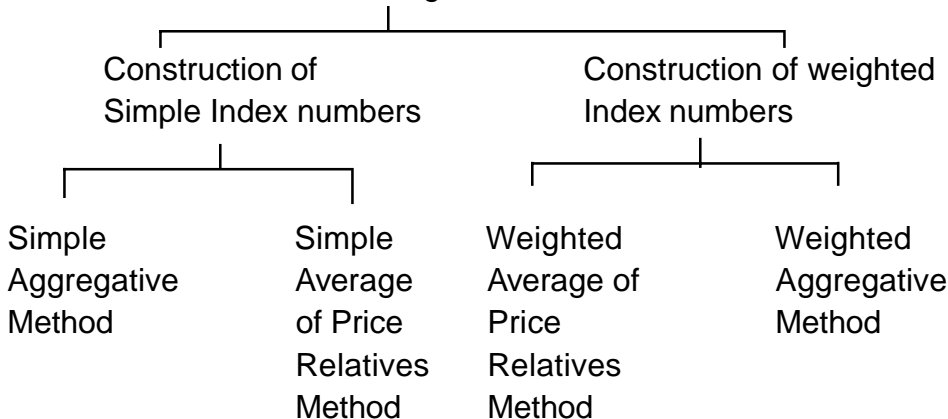
1. Correlation is a statistical tool which studies the relationship between two variables.
2. Beauty, bravery, wisdom, ability etc.
3. The correlation is said to be negative when the variables move in opposite direction.
4. The correlation is said to be positive when the variables move together in the same direction.
5. $-1 \leq r \leq 1$
6. Perfect correlation.
7. (i) Age of husband and age of wife.
(ii) Increase in height and weight.
8. Scatter diagram does not indicate the exact numerical value of correlation.
9. (i) Sale of wollen garments and day temperature.
(ii) Yield of crops and price.
10. When data are of qualitative nature like beauty, honesty etc.
11. (i) Scatter diagram
(ii) Karl pearson's coefficient of correlation.
(iii) Spearman's Rank correlation.
12. This method can not be employed for finding out correlation in a grouped frequency distribution.
13. The value of the coefficient is affected by extreme items.
14. Independent
15. Non - existent
16. Karl Pearson's coefficient of correlation.

UNIT - 3
(INTRODUCTION TO INDEX NUMBER)

Introduction to index numbers

Points to remember

- An index number is a statistical device for measuring changes in the magnitude of a group of related variables.
- * Features of Index Numbers
 - Index numbers are expressed in terms of percentages. However, percentage sign (%) is never used.
 - Index numbers are relative measurement of group of data.
 - Index numbers offer a precise measurement of the quantitative change in the concerned variables over time.
 - Index numbers shows changes in terms of averages.
- * Types of Index numbers
 - (i) Wholesale price index (WPI)
 - (ii) Consumer price index (CPI) or Cost of living index
 - (iii) Index of industrial production (IIP)
 - (iv) Index of Agricultural production (IAP)
 - (v) Sensex
- * Methods of constructing index numbers



- Simple aggregative method :

$$P_{01} = \frac{\sum P_1}{\sum P_0} \times 100$$

Here, P_{01} = Price index of the current year
 $\sum P_1$ = Sum of the prices of the commodities in the current year
 $\sum P_0$ = Sum of the prices of the commodities in the base year.

- Current year : Current year is the year for which average change is to be measured or index number is to be calculated.
- Base Year : Base year is the year of reference from which we want to measure extent of change in the current year. The index number of base year is generally assumed to be 100.

- Simple average of price Relatives method :

$$P_{01} = \frac{\sum \left(\frac{P_1}{P_0} \times 100 \right)}{N}$$

Here,
 P_{01} = Price index of the current year
 $\frac{P_1}{P_0} \times 100$ = Price relatives
 N = Number of commodities

- Weighted average of price relatives method :

$$P_{01} = \frac{\sum RW}{\sum W}$$

Here,

P_{o1} = Index number for the current year

W = Weight

R = Price relatives i.e. $\frac{P_1}{P_o} \times 100$

-- Weighted Aggregative method

(i) Laspeyre's Method :

$$P_{o1} = \frac{\sum P_1 q_o}{\sum P_o q_o} \times 100$$

(ii) Paasche's method :-

$$P_{o1} = \frac{\sum P_1 q_1}{\sum P_o q_1} \times 100$$

* Some Important Index numbers

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

* Methods of Constructing CPI

(A) Family budget method :

$$CPI = \frac{\sum WR}{\sum W}$$

Here, $R = \frac{P_1}{P_o} \times 100$

W = Weights

(B) Aggregative expenditure method :

$$CPI = \frac{\sum P_1 q_o}{\sum P_o q_o} \times 100$$

- (ii) Wholesale price index (WPI) : WPI
Indicate the change in the general price level.
- (iii) Index of industrial production (IIP) :
IIP is used to measure the relative increase or decrease in the level of industrial production.

$$IIP_{o1} = \frac{\sum \left(\frac{q_1}{q_0} \right) W}{\sum W}$$

Here, q_1 = Level of production in the current year

q_0 = Level of production in the base year

W = Weight

- (iv) Index of agricultured production (IAP) :
IAP is used to study the rise and fall of the yield of principal crops from one period to other period.
- (v) Sensex : Sensex is the short form of Bombay stock exchange sensitive index with 1978-79 as base. It is the benchmark index for the Indian stock market. It consists of 30 stocks which represent 13 sectors of the economy and the companies listed are the leaders in their respective industries.

* Problems in construction of index numbers

- (i) Purpose of index number
- (ii) Selection of base year
- (iii) Selection of items.
- (iv) Selection of the prices of items.
- (v) Selection of method of weighting
- (vi) Selection of sources of data
- (vii) Choice of an average.

(viii) Choice of method.

* Uses of index numbers :

- (i) To measure the purchasing power of money.
- (ii) Knowledge of change in standard of living.
- (iii) Adjustment in salaries and allowances.
- (iv) Help in framing suitable policies.
- (v) As economic barometers.

* Inflation and index numbers.

- Inflation is described as a situation characterised by a sustained increase in the general price level.
- Generally, inflation is measured in terms of wholesale price index.

-- Rate of inflation =
$$\frac{A_2 - A_1}{A_1} \times 100$$

Here, A_1 = WPI for week first (1)
 A_2 = WPI for week second (2)

**VERY SHORT ANSWER TYPE QUESTIONS.
ONE MARK QUESTIONS**

1. What do you mean by index numbers?
2. State two categories of price index numbers.
3. Define base year.
4. Name the consumer groups for which CPI is computed.
5. What is price relative?
6. Give Laspeyres's formula for weighted index number.
7. Where can we get some important index numbers such as CPI, WPI IIP etc.?
8. Write the formula for calculating index of industrial production.
9. How many types of CPI are constructed in India?
10. Define current year.
11. What is the difference between simple index number and weighted index numbers?
12. Give the formula to calculate the rate of inflation.
13. Which sign is used to indicate the price index number?
14. What does wholesale price index indicate?
15. Give Paasche's formula for weighted index number.
16. Which index number is known as cost of living index?
17. Mention the weight of primary articles in wholesale price index.
18. In how many groups all the commodities are classified for WPI?
19. Mention the weightage of different groups in index of industrial production.
20. Which index number is generally used to measure inflation?
21. Which change is measured in consumer price index?
22. Which item having the highest weight in CPI for industrial worker?
23. In which index number there is a relative importance of the items?

SHORT ANSWER TYPE QUESTIONS.

3/4 MARKS QUESTIONS

1. State three difficulties of constructing index numbers.
2. What are the desirable properties of the base period?
3. Why do we need an index number?
4. Write a short note on inflation and index numbers.
5. Why is it essential to have different CPI for different categories of consumers?
6. Mention the difficulties in construction of consumer price index.
7. What is the difference between a price index and a quantity index?
8. Define index number. State its utility.
9. What does an index of industrial production measure? Give formula to calculate IIP.
10. Calculate price index number for 2004 taking 1994 as the base year from the following data by simple aggregative method:

Commodities :	A	B	C	D	E
Price in 1994 (in Rs.)	100	40	10	60	90
Price in 2004 (in Rs.)	140	60	20	70	100

(Ans. 130)

11. Construct an index number for year 2005 taking 2000 as the base year from the following data by simple average of price relative method:

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

(Ans. 122.32)

12. Calculate weighted average of price relative index number of prices for 2010 on the basis of 2004 from the following data :

Goods	Weight	Price 2004 (Rs.)	Price 2010 (Rs.)
Wheat	20	20	35
Rice	12	15	18
Milk	8	10	11
Ghee	4	5	5
Sugar	6	4	5

(Ans. 139.4)

13. Calculate price index number from the following data using Laspeyre's method:

Commodity	Base year		Current year	
	Price Rs.	Quantity	Price Rs.	Quantity
A	8	100	10	120
B	4	60	5	80
C	10	20	12	25
D	12	25	15	30
E	3	5	4	6

(Ans. 124.44)

14. From the data given below, construct Paasche's price index:

Commodity	Base year		Current year	
	Price Rs.	Quantity	Price Rs.	Quantity
A	4	2	6	3
B	3	5	2	1
C	8	2	4	6

(Ans. 69.84)

15. An enquiry into the budgets of the middle class families in a certain city gave the following information :

Expenses On items	Food 35%	Fuel 10%	Clothing 20%	Rent 15%	Misc. 20%
Price (Rs.) in 2004	1500	250	750	300	400
Price (Rs.) in 1995	1400	200	500	200	250

What is the cost of living index during the year 2004 as compared with 1995?

(Ans. 134.49)

16. From the data given below construct the consumer price index number :

Commodity	Price Relatives	Weights
Food	250	45
Rent	150	15
Clothing	320	20
Fuel and lighting	190	5
Miscellaneous	300	15

(Ans. 253.5)

LONG ANSWER TYPE QUESTIONS.
6 MARKS QUESTIONS

1. Explain the problems involved in the construction of index numbers.
2. Discuss the various uses of index numbers.
3. Discuss the features of index numbers.
4. Give the meaning of whole sale price index numbers. Discuss the utility of WPI.
5. Write short notes on :
 - (a) Base year
 - (b) CPI
 - (c) WPI
 - (d) IIP
6. What do you meant by index numbers?
 Discuss the importance of index numbers.
7. Calculate the cost of living index from the following data :

Item	Qty. consumed in the given year	Price per unit (Rs.)	
		Base year	Given year
Rice	2.5 qt x 12	12	25
Pulses	3 kg. x 12	0.4	0.6
Oil	2 L x 12	1.5	2.2
Clothing	6 metres x 12	0.75	10
Housing	12 months	20 per month	30 per month
Miscellaneous	Expenditure of 12 month	10 per month	15 per month

(Ans. 252.8)

8. Define consumer price index number.
 Explain the uses of consumer price index numbers.

ANSWERS OF ONE MARK QUESTIONS

1. An index number is a statistical device for measuring changes in the magnitude of a group of related variables.
2. (a) Simple index numbers
(b) Weighted index numbers.
3. Base year is the year of reference from which we want to measure extent of change in the current year.
4. There are three consumer groups for which CPI is computed :
 - (i) CPI for industrial workers
 - (ii) CPI for urban non manual employees
 - (iii) CPI for agricultural labourers.
5. A price relative is the percentage ratio of the value of a variable in the current year to its value in the base year.

6.
$$P_{01} = \frac{\sum P_1 q_0}{\sum P_0 q_0} \times 100$$

7. Economic survey

8.
$$IIP_{01} = \frac{\sum \left(\frac{q_1}{q_0} \right) w}{\sum w} \times 100$$

9. There are three types of CPI.
 - (i) CPI (IW)
 - (ii) CPI (UNME)
 - (iii) CPI (AL)
10. Current year is the year for which average change is to be measured or index number is to be calculated.
11. In simple index number, all items of the series are accorded equal weightage or importance but in weighted index number different items of the series are accorded different weightage, depending upon their relative importance.

12. Rate of inflation = $\frac{A_2 - A_1}{A_1} \times 100$

Here, A_1 = WPI for week first (1)
 A_2 = WPI for week second (2)

13. P_{01}

14. WPI indicates the change in the general price level.

15. $P_{01} = \frac{\sum P_1 q_1}{\sum P_0 q_1} \times 100$

16. Consumer price index (CPI)

17. 22.02 % (or) 22%

18. Three

19.	Groups	Weightage
(i)	Mining	10.47
(ii)	Manufacturing	79.36
(iii)	Electricity	10.17

20. Wholesale price index number

21. Retail prices

22. Food

23. Weighted index numbers.

Unit - 5
Indian Economy on the Eve of Independence

- * The sole purpose of the British colonial rule in India was to reduce the country to being a feeder economy for Great Britain's own rapidly expanding modern industrial base.
- * Conditions in the Indian economy on the eve of independence
 - (i) Low level of economic development : the colonial govt, never made any sincere attempt to estimate India's national and percapita income.
The estimates given by Dr. Rao - growth of GDP was only 2% while the growth of percapita output was just 1/2 (0.5) percent.
 - (ii) Backward agricultural sector : Due to
 - A. Land tenure system - Zamindari system, Mahalwari system and Ryotwari system.
 - B. Forced commercialisation of Agriculture
 - C. Partition of the country.
 - (iii) Less developed Industrial sector
 - A. De-industrialisation - decline of Indian handicraft industry.
 - B. Capital good industries were lacking
 - C. Limited operation of public sector
 - D. Discriminatory tariff policy.
 - (iv) Unfavourable foreign trade :
 - (A) Net exporter of raw material and importer of finished good.
 - B. Britain had monopoly control on foreign trade.
 - C. Drain of India's wealth.
 - (v) Adverse demographic condition :
 - A. High death rate - 40 per thousand.

- B. High infant mortality rate - 18 per thousand.
- C. Mass Illiteracy - 83% illiterate.
- D. Low life expectancy - 32 years
- E. Low standard of living - people used to spend 80% to 90% of their income on basic needs.

(vi) Under developed infrastructure :

Absence of good roads, electricity generation, health, education and communication. However some efforts have been made to develop basic infrastructure like roads, railway ports, water transport post & telegraph by the British rulers. The main motive was not to provide basic amenities to the Indian people but for their colonial interest.

(vii) More dependence on primary sector

- * Largest share of work force which was 72% was engaged in agriculture.
- * 10% manufacturing while 18% workforce were engaged in service sector.
- * Some positive side-effects of the British rule in India :
 - A. Provide transport facilities, largely in terms of railway.
 - B. Development of ports.
 - C. Provision of post and telegraph service.
 - D. British Govt. left a base of a strong and efficient administrative set up.

*Indian Economy on the Eve of
INDEPENDENCE*

ONE MARK QUESTIONS

1. What was the infant mortality rate of India during British rule?
2. State the life expectancy in India during British rule.
3. What do you mean by infant mortality rate?
4. Give the name of one economist who estimated India's per capital income during colonial period.
5. What is meant by commercialisation of agriculture?
6. What was the motive behind the de-industrialisation by the colonial Govt. in India?
7. Which industries were adversely affected due to partition.
8. What does the export surplus mean?
9. What percentage of India's working population was engaged in secondary and tertiary sector during British rule?

3/4 MARKS QUESTIONS

1. Mention four features of India's agriculture on the eve of independence.
2. What were the objectives of the British Govt. in bringing about infrastructural change in the Indian economy.
3. How would you explain the drain of wealth during the British rule.
4. Discuss occupational structure of Indian economy at the time of independence.
5. State three main features of Indian economy at the time of independence.
6. Mention the state of Indian industries on the eve of independence.

6 MARKS QUESTIONS

1. Critically appraise some of the shortfalls of the industrial policy pursued by the British colonial administration.
2. What were the main causes of India's agricultural stagnation during the colonial period.
3. Give a quantitative appraisal of India's demographic profile during the colonial period.
4. Were there any positive contribution made by the British in India? Discuss.

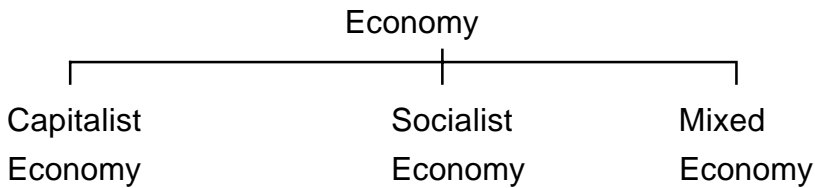
ANSWER OF ONE MARK QUESTIONS

1. Infant mortality rate was 18 per thousand.
2. Life expectancy was 32 years.
3. Infant mortality rate means number of deaths of children below the age of one year per thousand live birth.
4. Dada Bhai Nauroji, & Prof V.K.R.V. Rao.
5. Commercialisation of agriculture means production of crops for sale in the market rather than for self - consumption.
6. (i) To get raw materials from India at cheap rate.
(ii) To sell British manufactured goods in Indian market at high prices.
7. Jute and textile industries.
8. When export of a country is more than import.
9. 10% in secondary sector and 18% in tertiary sector.

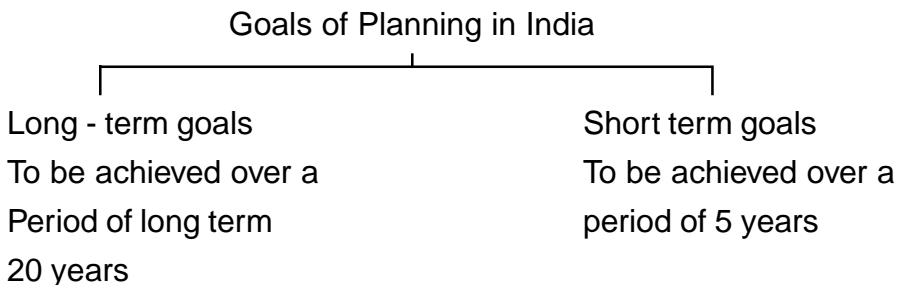
Indian Economy 1950-1990
INDEPENDENCE

ECONOMY :

An economy is an organisation of economic activities which provide people with the means to work and earn a living.



- * Capitalist economy : In which major economic decisions (what to produce, how to produce and for whom to produce) are left to the free play of the market forces.
- * Socialist economy : In which major economic decisions are taken by the Govt. keeping in view the collective interest of the society as a whole.
- * Mixed Economy : In which major economic decisions are taken by the central Govt. authority as well as are left to the free play of the market forces.
- * Economic Planning : Means utilisation of country's resources in different development activities in accordance with national priorities.



LONG TERM GOALS / OBJECTIVES OF PLANNING

- A. Modernisation - Adoption of new technology
- B. Self reliance - Reducing dependence on imports.
- C. Economic Growth - Increase in the aggregate output of Goods & services.
- D. Equity - reduction inequality of income or wealth
- E. Full employment - Refers to a situation when all the people in the working age group are actually engaged in some gainfull employment.

SHORT TERM GOELS / OBJECTIVES OR OBJECTIVES OF FIVE YEAR PLANS

Short term objectives vary from plan to plan depending on current needs of the country. For example first plan (1951-56) focused on higher agricultural production while in second plan (1956-61) shifted the focus from agriculture to Industry. In India growth and equity are the objectives of all the five year plans. The goal of current five year plan (11th, 2007-2012) is faster, broad-based and inclusive growth.

Agriculture

Main Features of Indian Agriculture

1. Low productivity
2. Disguised unemployment.
3. Dependence on rainfall
4. Subsistence farming - objective of farmer is to secure subsistence for his family not to earn profit.
5. Traditional inputs
6. Small holdings
7. Backward technology.
8. Landlord tenant conflict.

Problems of Indian Agriculture

General Problems :

1. Pressure of population on land
2. Land degradation
3. Subsistence farming
4. Social environment.
5. Crop losses- by pest, insect, flood, draught etc.

Institutional Problems.

1. Small and scattered holdings.
2. Poor implementation of land reforms.
3. Lack of credit and marketing facilities.

Technical Problems.

1. Lack of irrigation facilities.
2. Wrong cropping pattern.
3. Outdated technique of production.

Reforms in Indian Agriculture

- A. Institutional Reforms also called Land reforms.
 - (i) Abolition of intermediaries.
 - (ii) Regulation of rent.
 - (iii) Consolidation of holdings.
 - (iv) Ceiling on land holdings.

- B. General reforms.
 - (i) Expansion of irrigation facilities
 - (ii) Provision of credit
 - (iii) Regulated markets and co-operative marketing societies.
 - (iv) Price support policy.

- C. Technical Reforms or Green Revolution
 - (i) Use of HYV seeds
 - (ii) Use of dumatical fertilizers.
 - (iii) Use of insecticides and pesticides for crop protection
 - (iv) Scientific rotation of crops
 - (v) Modernised means of cultivation.

ACHIVEMENTS OF GREEN REVOLUTION

1. Rise in production and productivity.
2. Increases in income.
3. Rise in commercial farming.
4. Impact on social revolution - use of new technology HYV seeds, fertilizers etc.
5. Increase in employment.

FAILURES OF GREEN REVOLUTION

1. Restricted to limited crops and areas such as two crops wheat & rice growing states like Punjab, Haryana, U.P and Andhra Pradesh.
2. Partial removal of poverty.
3. Neglected land reforms.
4. Rise in unemployment.
5. Ecological degradation.

INDUSTRY

ROLE OF INDUSTRIAL SECTOR IN INDIA

Industrialisation is important for an overall growth of a country. following points highlight the importance of Industry in an economy.

1. Provides employment.
 2. Raising people income
 3. Promotes regional balance.
 4. Leads to modernisation.
 5. Helps to modernise agriculture.
 6. Leads to self-sustainable development
 7. High potential for growth.
 8. Key to high volume of exports.
 9. Growth of civilisation.
- * Industrialisation is a pre-condition for the final take-off of an economy.

INDUSTRIAL DEVELOPMENT SINCE INDEPENDENCE

Share of industrial sector in the GDP has increased upto 8.3% in the 10th plan. It is expected to be 10.5% in the 11th plan.

The following important changes have taken place :

- (i) Development of infrastructure like power transport, communication, banking & finance, qualified and skilled human resource.
- (ii) Much progress in the field of research and development.

- (iii) Expansion of public sector
- (iv) Building up of capital goods industry
- (v) Growth of non-essential consumer goods industries.

PROBLEMS OF INDUSTRIAL DEVELOPMENT IN INDIA

1. Sectoral imbalances - agriculture and infrastructure have failed to provide the support to the industrial sector.
2. Regional imbalance - restricted to few states.
3. Industrial sickness- which raised the problem of unemployment.
4. Higher cost of industrial product due to lack of healthy competition.
5. Dependence on the Government - for reduction in tax or duty to make import easier.
6. Poor performance of the public sector
7. Underutilisation of capacity.
8. Increasing capital - output ratio

ROLE OF PUBLIC SECTOR / GOVT. IN INDUSTRIAL DEVELOPMENT

Direct intervention of the state was considered essential in view of the following factors.

1. Lack of capital with the private entrepreneurs.
2. Lack of incentive among the Pvt. entrepreneurs - low demand due to limited size of the market.
3. Socialistic pattern of society - main aim of Govt. is to generate employment rather than profits.
4. Development of infrastructure.
5. Development of backward areas.

6. To prevent concentration of economic power.
7. To promote import substitution.

INDUSTRIAL POLICY RESOLUTION (IPR) 1956

Industrial policy is an important instrument through which the government regulates the industrial activities in an economy.

The 1956 resolution laid down the following objectives of industrial policy.

- (a) To accelerate the growth of industrialisation.
- (b) To develop heavy industries.
- (c) To expand public sector.
- (d) To reduce disparities in income and wealth.
- (e) To prevent monopolies and concentration of wealth and income in the hands of a small number of individuals.

FEATURES OF INDUSTRIAL POLICY RESOLUTION (IPR) OF 1956

Features of Industrial Policy Resolution of 1956 were.

1. New classification of Industries : Industries were classified into three schedules depending upon the role of the state.
 - (a) Schedule-A - 17 industries listed in schedule-A whose future development would be the responsibility of the state.
 - (b) Schedule-B - 12 industries were included in schedule-B, which could be established both as the private and public sector enterprises.
 - (c) Schedule-C - other residual industries were left open to the private sector.
2. Stress on the role of cottage and small scale industries.
3. Industrial licensing : Industries in the private sector could be established only through a licence from the government.
4. Industrial concessions - were offered to the private sector.

entrepreneurs for establishing industry in the backward regions of the country. Such as tax rebate and concessional rates for power supply.

SMALL SCALE INDUSTRY (SSI)

A small scale industry is presently defined as the one whose investment does not exceed Rs. 5 crore.

CHARACTERISTICS OF SSI OR ROLE OF SMALL SCALE INDUSTRIES

1. Labour intensive - employment oriented
2. Self - employment.
3. Less capital intensive.
4. Export promotion.
5. Seed beds for large scale industries.
6. Shows locational flexibility.

PROBLEMS OF SMALL SCALE INDUSTRIES

1. Difficulty of finance.
2. Shortage of raw material.
3. Difficulty of marketing.
4. Outdated machines & equipments
5. Competition from large scale industries.

FOREIGN TRADE

At the time of independence raw material was exported from India to Britain in abundance on the other hand finished goods from Britain were imported into India.

Notably our balance of trade was favourable (exports > imports)

After independence India's foreign trade recorded a noticeable change such as.

- (i) Decline in percentage share of agricultural exports.
- (ii) Increase in percentage share of manufactured goods in total exports.
- (iii) Change in direction of export trade and import trade.

TRADE POLICY

In the first seven five year plans of India, the trade was commonly called an 'inward looking' trade strategy. This strategy is technically known as 'import substitution'.

Import substitution means substituting imports with domestic production. Imports were protected by the imposition of tariff and quotas which protect the domestic firms from foreign competition.

Impact of Inward looking Trade strategy on the domestic industry.

- 1. It helped to save foreign exchange by reducing import of goods.
- 2. Created a protected market and large demand for domestically produced goods.
- 3. Helped to build a strong industrial base in our country which directly lead to economic growth.

Criticism of import substituting strategy

- 1. It did not led to growth.
- 2. Lack of competition implied lack of modernisation.
- 3. Growth of inefficient public monopolies
- 4. It did not lead to efficiency.

INDUSTRIAL LICENSING

Licensing is a tool for channelising scarce resources in predetermined priority sector of an economy.

The Industries development and resolution act (IDRA) was enacted in 1951.

MAIN OBJECTIVES OF IDRA act of 1951

1. Regulation of industrial development in accordance with planned priorities.
2. Avoidance of monopoly
3. Balanced regional development.
4. Prevention of undue competition between large-scale industries and small scale industries
5. Optimum utilisation of scarce foreign exchange resources.
Under this act the following were applicable.
 - A. All the scheduled industries should be registered with the govt.
 - B. A licence must be obtained by all the new industries.
 - C. Govt. is authorised to examine the working of any industrial undertaking.
 - D. If the undertaking continued to be mismanaged, govt can take over its management.

CRITICISM AGAINST INDUSTRIAL LICENSING

1. There was an adhoc system for accepting or rejecting an application for licence.
2. The quality of techno economic examination conducted by Director general of technical development was generally poor.
3. Licensing policy resulted in under utilisation of capacity In many industries.
4. In reality the policy helped large business houses in accumulating economic power.

PERMIT LICENCE RAJ

The licensing authorities many a times granted licence to big business houses without proper scrutiny of their applications.

INDIAN ECONOMY 1950-1990

ONE MARK QUESTION

1. Define economy.
2. Who is the chairman of the planning commission in India?
3. What was the idea behind abolition of intermediaries?
4. Write the classification of industries according to IPR-1956.
5. What do you mean by green revolution?
6. What is meant by small scale industries?
7. What is marketable surplus.
8. Who formulates five year plans in India.
9. Write the duration of current five year plan.
10. Name any two Common goals of five year plan.
11. Name the type of economy adopted in India.
12. Name three general problems of an economy.
13. What is import - substitution?

3/4 MARKS QUESTIONS

1. Explain how import substitution can protect domestic industry.
2. Why was public sector given a leading role in industrial development during the planning period?
3. How subsidies encourage farmers to use new technology? explain.
4. What were the benefits of green revolution.
5. How has India's occupational structure changed during the period from 1950 to 1990.

6. Small scale industries promote rural development. explain.
7. Write the limitation of green revolution.
8. What are the main goals of the five year plans in India?
9. Distinguish between planning objectives and plan objectives.

6 MARKS QUESTIONS

1. Explain the problems of industrial development in India.
2. Explain the role of small scale industries in the socio economic development of our country.
3. How did green revolution benefit and harm the farmers?
4. Describe the objectives and main features of industrial policy resolution 1956.
5. What is import substitution policy? why was it adopted in the initial period of development in India?
6. Describe the achievements and failures of economic planning in India.
7. Evaluate inward looking trade policy of the government during 1950-90

ANSWER OF ONE MARK QUESTIONS

1. It is organisation of economic activities which provides people with the means to work and earn a livelihood.
2. Prime minister is the chairman of planning commission in India.
3. The aim of abolition of Zamindar was to make direct link between government and real cultivators so that cultivators can get maximum profit
4. Classification of industries according to IPR 1956 was.
 - (a) Schedule 'A' includes 17 industries governed by public sector.
 - (b) Schedule 'B' includes 12 industries governed by public & pvt. sector both.
 - (c) Schedule 'C' includes other residual industries under pvt. sector.
5. Green revolution refers to the tremendous increase in agricultural production and productivity with the introduction of new technology.
6. Small scale industries are those in which the investment limit is Rs 5 crores.
7. Marketable surplus means production sold in the market after self consumption by the farmers.
8. Planning commission
9. First April 2007 to 31 March 2012.
10. Growth and equity.
11. Mixed economy
12. What to produce, how to produce and to whom to produce.
13. Import substitution means encouraging domestic production of such goods which the country is importing.

Unit (VI)
Economic Reforms Since 1991

Key points :

Economic reforms or structural adjustment is a long term multi dimensional package of various policies (Liberalisation, privatisation and globalisation) and programme for the speedy growth, efficiency in production and make a competitive environment. Economic reforms are adopted by Indian Govt. in 1991.

Factor's responsible for Economic reforms.

1. Fall in foreign exchange reserve.
 2. Adverse balance of payments
 3. Mounting fiscal deficit.
 4. Rise in prices
 5. Failure of public enterprises.
 6. Gulf crisis.
- * Stabilisation measures : - These are short run measures. Introduced by Govt to control rise in price, adverse balance of payment and fall in foreign exchange reserve.
- * Structural adjustment : These are longrun policies the goal of structural reforms is to abolish controls, eliminate bureaucratic hurdles and red tapism and make the decision making process efficient and transparent.
- * In the new economic policy 1991, Structural reforms can be seen with respect to :
1. Liberalisation.
 2. Privatisation
 3. Globalisation.

Liberalisation means removing all unnecessary control and restriction like permits licenses. protectionist duties quotas ect.

Economis reforms under liberalisation.

1. Industrial sector reforms
2. Finicial sector reforms.
3. Fiscal reforms.
4. Foreign exchange reforms.
5. Trade and investment reforms.
- * Privatisation is the general process of involving the private sector in the ownership or operation of a state owned enterprises.

Policies adopted for privatisation

1. Contraction of public sector.
2. Abolish the ownership of Govt. in the management of public enterprises.
2. Sale of shares of public enterprises.
- * Globalisation :- Globalisation may be defined as a process associated with increasing openness growing economic interdependence and deepening economic integration in the world economy.

Policy promoting globalisation.

1. Increase in equity limit of foreign investment.
2. Partial convertibility.
3. Long term trade policy.
4. Reduction in tariff.

An Appraisal of LPG Policies

Positive Impact

1. Increase in foreign investment
2. Increase in foreign exchange reserves
3. A check of inflation.
4. Increase in domestic product.
5. Increase in exports.
6. Consumer sovereignty.

Negative Impact.

1. Neglect of agriculture
2. Increase in competition for domestic industry.
3. Increase in urbanisation.
4. Diseffect of disinvestment policy.
5. Spread of consumerism.
6. Cultural erosion.

1 MARK QUESTIONS

1. State the meaning of economic reforms.
2. How does increase in fiscal deficit creates the requirement of economic reforms?
3. State the name of economic reform which makes free to economy from direct or physical controls imposed by the Govt.
4. What is meant by foreign exchange reserve?
5. Why the requirement of fiscal reforms arose under liberalisation?
6. What is meant by direct tax?
7. Define indirect tax with the help of example.
8. What is meant by devaluation?
9. State the meaning of privatisation.

10. What is meant by globalisation?
11. What benefit goes to domestic Industries of reduction in tariff?

3/4 MARKS QUESTIONS

1. What is meant by economic reforms? Write the measures adopted under economic reforms.
2. What is meant by adverse balance of payments. How does adverse balance of payments creates the requirement of economic reforms?
3. How is the insufficient production of public sector enterprises become a main cause of adoption of economic reforms?
4. what's meant by liberalisation? State the measures adopted for liberalisation under economic reforms.
5. Define privatisation. State the measures adopted for privatisation.
6. Explain the meaning of globalisation and as the main result of this policy explain the outsourcing.
7. Write any four arguments in favour of economic reforms.
8. State any four negative impact of economic reforms.

5/6 Marks questions

1. Explain the requirement of economic reforms adopted in 1991.
2. Explain the measures taken for globalisation of economy.
3. State the meaning of liberalisation and explain the measures adopted for liberalisation.
4. Explain the positive impact of economic reforms over Indian economy.
5. Explain the negative impact of economic reforms.

ANSWER OF ONE MARK QUESTIONS

1. Economic reforms refers, those measures which are adopted for the speedy growth of economy, efficiency in production and make a competitive environment.
2. Due to increasing fiscal deficit the interest paid by the Govt. for the borrowings become 36.4% of the Govt. expenditure. So economic reforms become essential for the Govt.
3. Liberalisation.
4. Stock of foreign currency held with the Govt. at given point of time called foreign exchange reserve.
5. Prior to liberalisation, tax structure was highly complicated and evasive. Fearing a heavy burden of taxation it promote evade the payment of tax, so tax reforms become essential for the Govt.
6. Direct taxes are those taxes, the burden of which can not be shifted on to other's eg. Income tax.
7. Indirect taxes are those taxes the burdon of which can be shifted on to other for example sales tax.
8. Devaluation refers to lowering in the official value of a currency with respect to gold or foreign currency.
9. Privatisation is the general process of involving the private sector in the ownership of operation of a state owned enterprises.
10. Globalisation may be defined as a process associated with increasing open ness growing economic interdependence and deepening economic integration in the world economy.
11. Due to reduction in tariff, imports becomes cheaper and profit margin increase on exports for domestic industries.

Unit (VII)
Poverty

Key points :

- * Poverty is the inability to fulfill the minimum requirement of life. Like food, clothing, housing education and health facilities etc.
- * Relative poverty refers to poverty of people in comparison to other people, region or nations.
- * Absolute poverty refers to total number of people living below the poverty line.
- * Poverty line refers to that line which express per capita average monthly expenditure incurred by the people to satisfy their minimum needs.
- * Those people who are always poor and those who are usually poor called chronic poor.
- * All those people who are churning poor moving in and out of poverty like seasonal workers and occasionally poor called transient poor.
- * Those people who live above the poverty line. They are called non poor.
- * The ratio between urban and rural area of the population live below the poverty line has declined since 2000. Still 27% of population is poor and 70% of poor population live in Utar pradesh, Bihar, Madhya Pradesh, West Bangal and Orisa.

* **Causes of Poverty :-**

1. Rapid increase in population
2. Low level of National product.
3. Rise in price
4. Unemployment
5. Low rate of growth
6. Capital deficiency.

Measures adopted by the Government to remove poverty.

1. Food for work programme.
2. Swarnjayanti Gram Swarozgar Yojana.
3. Pradhan Mantri Gramodaya Yojana.
4. Sampoorna Gramin Rozgar Yojana.
5. Swarn Jayanti Shahri Rozgar Yojana.
6. Mahatma Gandhi National Rural Employment Guarantee Scheme.

1 MAKR QUESTION

1. Define poverty.
2. How does absolute poverty measured in India?
3. What is meant by relative poverty?
4. Who are called chronic poor?
5. State the category of those people who are churning poor moving in and out of poverty.
6. How does rise in price is responsible for poverty?
7. Define poverty line?

3/4 MARKS QUESTIONS

1. What is meant by poverty. Distinguish absolute and relative poverty?
2. How does chronic unemployment increase the poverty?
3. Briefly explain the three approaches adopted by the Indian Government to combat poverty.
4. Explain the relation of poverty and inequalities.
5. Write a short note on Swarn Jayanti Gram Swarojgar Yojna.

5/6 MARKS QUESTIONS

1. Explain briefly the causes for poverty.
2. Explain briefly the measures adopted by the Government to remove poverty.
3. Give the critical assesment of poverty alleviation programmes.

ANSWERS OF ONE MARK QUESTIONS :

1. Poverty is the inability of fulfilling the minimum requirement like food, clothing, housing education and health facilities etc.
2. Absolute poverty is measured in India with the help of poverty line.
3. Relative poverty refers to poverty of people in comparison to other people, region or nations.
4. Those people who are always poor and those who are usually poor called chronic poor.
5. Transit poor.
6. Rise in price is a cause of decrease in real income or purchasing power so goods and services become costlier and poor people become unable to satisfy their minimum requirement.
7. Poverty line refers to that line which express per capita average monthly expenditure incurred by the people to satisfy their minimum need.

Chapter - 5
Human Capital Formation in India

Points to remember

- * Human capital refers to the stock of skill, ability, experties, education and knowledge in a nation at a point of time.
- * Human capital formation is the process of adding to the stock of human capital overtime.
- * Sources of human capital formation
 - (i) Expenditure on education
 - (ii) Expenditure on health
 - (iii) On the job training
 - (iv) Study programmes for adults
 - (v) Migration and expenditure on information
- * Role of human capital formation in economic growth
 - (i) Raises production
 - (ii) Change in emotional and physical envirnment of growth.
 - (iii) Improves quality of life.
 - (iv) Raises life expactancy
 - (v) Innovative skills.
 - (vi) Raises social justice and equality
- * Problems facing human capital formation
 - (i) Rising population
 - (ii) High regional and gender inequality
 - (iii) Brain drain

- (iv) Insufficient man power planning.
- (v) Insufficient on the job training in agriculture
- (vi) High poverty levels
- (vii) Low acadamic standards

* Importance and objectives of education

- (i) Education produces good citizens.
- (ii) Education facilitates use of resources in the country.
- (iii) Develops science and technology.
- (iv) Expands mental horizon of the people.
- (v) Promotes cultural standard of the citizens.
- (vi) Develops human personality.

* Problems relating to development of education in India.

- (i) Large number of illiteretes
- (ii) Inadequate vocationalisation
- (iii) Gender bios
- (iv) Low rural access level
- (v) Low government expenditure on education

* Human capital formation in India

- (i) The seventh five year plan stressed upon the importance of human capital.
- (ii) In India, ministry of education at the centre and state level NCERT, (National Council of Educational Research and Training), UGC (University Grants commission) , AICTE (All India Council of Technical Education) Regulate the education sector.

- (iii) In India, Ministry of Health at the union and the State level and ICMR (Indian Council of Medical Research) regulate the health sector.
- (iv) World Bank states that India will become the knowledge economy. Also if India uses its knowledge as much as Ireland does, than the per capita income will rise \$ 3000 by the year 2020.

* Human capital formation raises the process of Economic Growth and economic growth raises the process of human capital formation

- (i) Rise in human capital raise economic growth -

Rise in Human capital



Modern attitude and outlook, better quality of life,
Higher life expectancy



More Efficiency



More Production



More economic growth

- (ii) Rise in economic growth raises human capital formation -

Rise in Economic growth



Rise in per capita income



More investment in education and health



Rise in human capital

- * Education sector in India -
 - (i) Elementary education
 - (a) In 2005-06 primary and upper primary schools were 12.83 Lakh and gross enrolment ratio rose to 804 percent.
 - (b) Various policies are - Sarva Shiksha Abhiyan, Education Gurantee and alternative and innovative education, Mid Day Meal schome, District Primary education Programme, operation black Board and other progrmme.
 - (ii) Secondary Education -
 - (a) In 2005-06, 304 Universities, 12178 colleges enrolment of students 104.8 lakh
 - (b) Indira Gandhi National open University gives distance learning.
 - (c) UGC controls higher education.
 - (iv) Expansion of Technical Education -
1265 Engineering colleges, 1215 polytechnical institutes, 268 medical colleges, 38 agricultural universities, 390 community polytechnics.
 - (v) National Literacy mission was set up in 1988 its movement is "Education for all".

ONE MARK QUESTIONS

1. What is meant by human capital formation?
2. Define human capital.
3. What is investment in education?
4. Which five year plan recognised the importance of human capital?
5. Why do we need to invest in human capital?
6. What is on -the -job training?
7. What is the difference between literacy and education?
8. What do you mean by the term sources of human capital formation?
9. How does human capital formation improve quality of life?
10. Name the movement started by national literacy mission.
11. What is meant by training?

3/4 MARKS QUESTIONS

1. What are three major sources of human capital formation?
2. Explain the concept of human capital formation.
3. How does human capital formation raise social justice?
4. Discuss the growth in government expenditure on education. What does it indicate?
5. Whom do you call literate? How is literacy different from education?
6. How migration promotes human capital formation?
7. Explain how educational planning is necessary for human capital formation.
8. Explain the role of human capital in economic development.

6 MARKS QUESTIONS

1. Explain the sources of human capital formation.
2. Discuss how education is an important input for the development of the nation.
3. Discuss the principal difficulties in the process of human capital formation in India.
4. Give adult and female education position in our country.

5. Bring out the need for on-the-job training in agricultural sector of India.

ANSWERS OF ONE MARK QUESTIONS

1. Human capital formation refers to the process of adding to the stock of human capital overtime.
2. Human capital is the stock of 'skill and expertise' of a nation at a point of time.
3. Expenditure on education by the government is known as investment in education.
4. The seventh five year plan puts in print the importance of human capital in economic growth.
5. It is necessary to invest in human capital and to make use of the physical capital in an efficient manner and to develop man's ability to increase productive capacity of a country.
6. On-the-job training refers to the training provided to the workers by the firm to hone their specialised skills. It makes them more efficient and productive.
7. Education is a much wider concept than literacy literacy refers to the ability to read and write. Education includes three parameters primary, secondary and tertiary education all educated people and literate all literate people are not necessarily educated.
8. Source of human capital formation are the ways of adding to the existing stock of human capital.
9. Literate, healthy, skilled and trained people are an asset for an economy therefore it is the quality of population which means more economic growth.
10. The movement started by national literacy mission is 'Education for all'.
11. Training means to provide skill and knowledge for doing specific work. It increases efficiency.

Chapter - 6
Unit - 3
Rural Development

- * Rural development is an action plan for the economic and social upliftment of rural areas.
- * Key issues in rural development.
 - (i) A robust system of rural credit.
 - (ii) A system of marketing that ensures remunerative price to the farmer for his produce.
 - (iii) Diversification of crops that reduces risks of production and induces commercialisation of farming.
 - (iv) Diversification of production activity with a view to find alternative means of sustainable living other than crop- cultivation.
 - (v) Promotion of organic farming with a view to make crop cultivation environmental friendly as well as a sustainable process over a long period of time.
- * Rural credit means credit for the farming families. Farmers require credit for various purposes.
- * Sources of rural credit in India -
 - 1. Non- institutional sources are money lenders, traders and commission agents, landlord, relatives and friends.
 - 2. Institutional sources are as follows -
 - (i) Co-operative credit societies.
 - (ii) Commercial Banks
 - (iii) Regional banks
 - (iv) NABARD (National Bank for Agriculture and Rural Development.)
- * Agricultural marketing includes - gathering the produce after

harvesting, processing the produce, grading the produce according to its quality, packaging the produce according to preferences of buyers, storing the produce for future sale and selling the produce when price is lucrative.

* Defects of agricultural marketing -

- (i) Inadequate warehouses
- (ii) Multiplicity of middlemen
- (iii) Malpractices in unregulated markets.
- (iv) Lack of adequate finance
- (v) Inadequate means of transport and communication.

* Measures adopted by the government to improve marketing system -

- (i) Regulated markets.
- (ii) Co-operative agricultural marketing societies
- (iii) Provision of warehousing facilities
- (iv) Subsidised transport.
- (v) Dissemination of marketing information.
- (vi) Buffer stocks and PDS (Public Distribution System)

* Diversification in agriculture activities-

It has two aspects.

1. Diversification of crop production refers to a system of multiple cropping rather than mono cropping. It has two advantages :
 - (i) It lowers the risk of farming on account of failure of monsoon
 - (ii) It enhances the scope for commercialisation of farming.
2. Diversification of productive activities implies a shift from crop-farming to non-farming areas of employment. Non-farm areas of employment include -

- (i) Animal husbandry
- (ii) Fisheries
- (iii) Horticulture
- (iv) Cottage and household industry
- (v) Information technology - every village a knowledge centre.

* Organic farming is a system of farming that maintains, enhances and restores the ecological balance. It helps in sustainable development in the agricultural sector, In organic farming, farmers use organic manures, bio-fertilizers and organic pesticides.

* Advantages of organic farming -

- (i) Inexpensive process
- (ii) Generates income
- (iii) Healthier and tastier food.
- (iv) Solves unemployment problem.
- (v) Environment friendly.

* Organic farming involves labour - intensive process of production of labour so India has comparative advantage in organic farming.

ONE MARK QUESTION

1. What is rural development?
2. What is meant by agricultural diversification?
3. What is TANWA?
4. What is 'Golden Revolution'?
5. Write two instruments to safeguard the interests of farmers by the government.
6. What is co-operative marketing?
7. What do you mean by 'Operation Flood'?
8. What do you mean by micro credit programme.
9. Define non-institutional sources of agricultural credit.
10. What is agricultural marketing?
11. Mention two limitations of rural banking.
12. Name two institutional sources of agricultural credit.
13. Which state has an efficient implementation of milk co-operatives?
14. When was NABARD established?
15. What is sustainable development?

3/4 MARKS QUESTIONS

1. Give two basic objectives of the co-operative credit societies.
2. Explain the importance of self help groups (SHG'S) in rural areas.
3. Why is state intervention necessary to regulate the activities of private traders in the rural agricultural sector?
4. How has horticulture encouraged Indian rural development?
5. Is it possible to develop information technology as an alternate livelihood option? Give reasons.
6. Why does indian farmer need credit?
7. Why were alternate marketing channels set up?
8. What are the advantages of organic farming?

9. Why has rural banking not able to give adequate credit to farmers?
10. What do you understand by -
 - (i) MSP (Minimum selling price)
 - (ii) Buffer stock.
 - (iii) PDS (Public distribution system)
 - (iv) SHG (Self help group)

6 MARKS QUESTIONS

1. What do you mean by agricultural diversification? Why is it required?
2. Mention advantages and limitations of organic farming.
3. What steps have been initiated by the government to improve agricultural market system in India ?
4. What are the functions and weaknesses of co-operative credit societies?
5. What do you understand by the term rural development? What are the key issues of rural development.
6. Explain how animal husbandry, fisheries and horticulture are a significant source of sustainable livelihood in rural areas.
7. Explain the types of credit taken by farmers for different purposes. Bring out the significance and implications of non-institutional credit.

ANSWERS OF ONE MARK QUESTIONS

1. Rural development is an action plan for the economic and social upliftment of rural areas.
2. Agricultural Diversification means a major proportion of the increasing labour force in the agricultural sector needs to find alternate employment opportunities in other non-farm sectors.
3. TANWA (Tamil Nadu Women in Agriculture) is a project initiated in Tamil Nadu where rural women find employment in non-farm jobs, as well as they are trained in latest agricultural techniques.
4. The period between 1991-2003 is called 'Golden Revolution' because during this period the nanned investment in horticulture became highly productions and the sector emerged as a sustainable livelihood option.
5. Two instruments are fixation of minimum support price (MSP) buffer stock.
6. Co-operative marketing is a measure to ensure a fair price ot farmers . Member farmers sell their surplus to the co-operative society which substitutes collective bargaining in place of individual bargaining and hence provides best advantages to the farmers.
7. From 1966 onwards operation flood is a system whereby all the farmers can pool their milk produce according to different grading (based on quality) and the same is processed and marketed to urban centres through co-operatives.
8. Credit provisions made by self help groups (SHG) to its different members is known as micro credit programme.
9. Non-institutional sources include money lenders, traders, commission agents, landlords, relations and friends.

10. Agricultural marketing is a process of marketing in which farm produce are distributed through wholesalers and stockists to ultimate consumers.
11. Two limitations of rural banking are inadequate finance and large amount of overdues and default rate.
12. Two institutional sources of agricultural credit are co-operative credit societies and commercial banks.
13. Gujrat state has the efficient implimentation of milk co-operatives.
14. NABARD (National Bank for Agriculture and Rural Development) was established in 1982
15. Sustainable development is a system of a long- period sustaibable process along with an eco friendly envirnment.

Chapter - 7

Unit - 7

Employment : Growth Informalisation and other Issues.

- * Work plays an important role in our lives, as individuals and as members of society.
- * A worker is an individual , who is involved in some productive activity, to earn a living,
- * An economic activity refers to the activity performed by people to earn the living. The main three types of economic activities are consumption, production and distribution.
- * Production activity refers to all those activities which are undertaken to produce goods and services for generation of income.

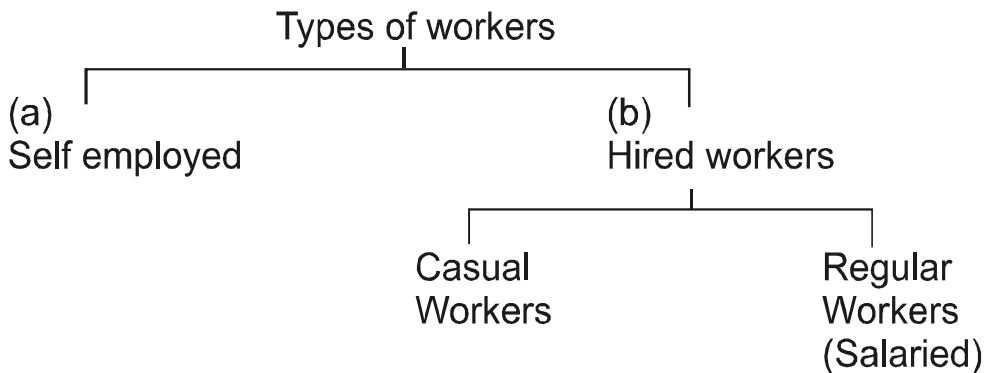
Labour force : All persons, who are working (have a job) and those are not working but able to work and willing to work at the existing wage rate constitute labour force.

Labour Force : Persons working + persons seeking and / or available for work.

Work force : The number of persons, who are actually employed at a particular time are known as workforce, It includes all those persons who are actually engaged in productive activities.

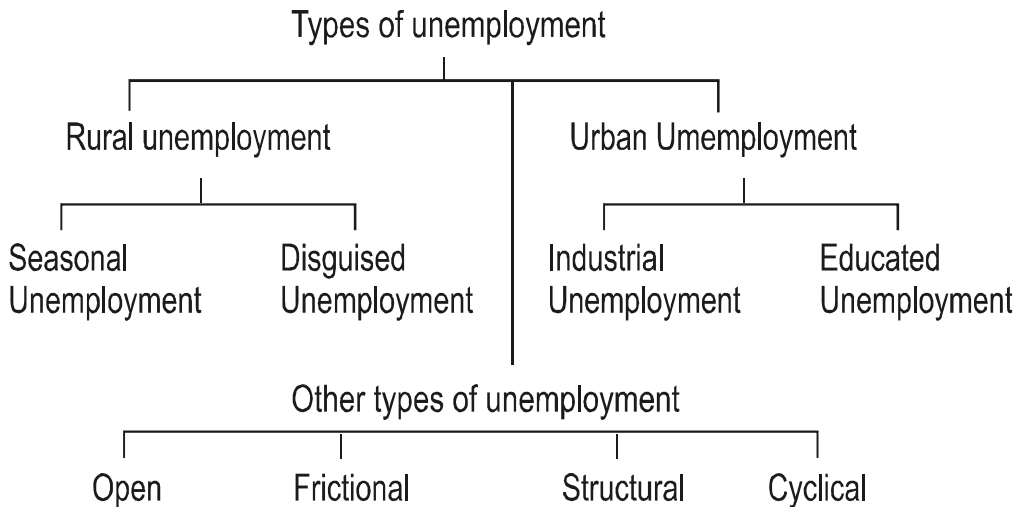
Labour supply - It refers to amount of labour that people are willing to offer corresponding to a particular wage rate.

$$\text{Participation Rate} = \frac{\text{Workforce}}{\text{Total Population}} \times 100$$



- * About two fifth of the total population in the country in engaged in various economic activities.
- * Men particularly rural men, form the major section of workforce in India.
- * Majority of workers in India are self employed casual wage labourers and regular salaried employees together account for less than half the proportion of India's workforce.
- * About three fifth of India's workforce depends on agriculture and other allied activities as the major source of livelihood.
- * Jobless Growth : It is defined as a situation where GDP grows faster than the employment opprotunities resulting in unemployment.
- * Casualisation and informalisation of employment.
Casualisatoin refers to a situation when the percentage of casually hired workers in the total workforce tends to rise over time.

Informalisation : refers to a situation when people tend to find employment more in informal sector of the economy, and less in formal sector of the economy.



(Formal or organised sector, informal or unorganised sector)

Causes of unemployment

- * Slow rate of economic growth
- * Population explosion
- * Underdeveloped agriculture
- * Defective educational system
- * Slow growth of Industry
- * Decline of cottage and small industry.
- * Faulty planning
- * Inadequate employment planning.
- * Low capital formation.

Remedial measures for unemployment.

- * Accelerating growth rate of GDP
- * Control of population growth
- * Development to small scale enterprises.
- * Encouragement in infrastructure.
- * Special employment programmes.
- * Rapid industrialisation.

Special programmes to fight poverty and unemployment

- * National Rural Employment Guarantee (NREG)

ONE MARK QUESTION

1. Who is worker?
2. Define GDP
3. What is an economic activity?
4. Define self employed workers?
5. Define participation ratio.
6. Give three sources that collect data on unemployment.
7. Define job less growth.
8. Define casualisation.
9. Are the following workers - a beggar, a thief, a smuggler, a gambler? Why?
10. What is informalisation of workforce?
11. Why is self-employed workforce higher in rural areas?
12. Name the two kinds of urban unemployment.
13. Give the meaning of disguised unemployment.
14. Who are included in labour force?
15. Give the meaning of work force?
16. Define worker - population ratio.
17. Who is casual wage labourer?
18. How will you know whether a worker is worker in the informal sector?
19. Why are regular salaried employees more in urban areas than in rural ares.
20. Why do we diffrentiate between economic activity and production activity?

SHORT ANSWER QUESTIONS (03-04 MARKS)

1. What is the difference between labour force and work force?
2. Discuss the two main forms of wage employment.

3. Analyse the recent trends in sectoral distribution of workforce in India.
4. Discuss the two types of rural unemployment.
5. How does the government generate employment?
6. Explain classification of workforce.
7. Give a brief note on the national rural employment guarantee act 2005.
8. Suggest general measures to control unemployment.
9. What are the adverse effects of unemployment.
10. Write a short note on informal sector. What are the problems being faced by the workers of informal sector?
11. Discuss the three concepts of unemployment used by national sample survey, organisation.

LONG ANSWER QUESTIONS (06 MARKS)

1. What are the various types of unemployment?
2. What role does the government play in generating employment opportunities.
3. What are the causes of unemployment?
4. Explain information of workforce.
5. Explain occupational structure of workforce.
6. What do you mean by organised sector? Discuss the reasons for fall in employment in the organised sector.
7. Discuss the various remedial measures, which are needed to solve the problem of unemployment in India.
8. What do you mean by casualisation of workforce? Discuss the concept with relevant facts.
9. Discuss the distribution of employment in different sectors of economy.
10. Discuss the concept of frictional and structural unemployment.

ANSWER OF 01 MARK QUESTIONS

1. A worker is an individual who is doing some productive employment to earn a living.
2. Sum total of the goods and services produced in the economy during a year is called GDP.
3. All activities which contribute to gross national product through production of goods and services are called economic activities.
4. Self employed workers are those who work in their own business or profession and get profit as their reward.
5. Participation ratio is defined as the percentage of total population which is actually participating in productive activity. It is also called workers population ratio.
6.
 - (a) Reports of census of India.
 - (b) National sample survey organisation reports of employment and unemployment situation and.
 - (c) Directorate general of employment and training date of registration with employment exchange.
7. Jobless growth is defined as a situation in which there is an overall acceleration in the growth rate of GDP in the economy which is not accompanied by a commensurate expansion in employment opportunities.
8. Casualisation is defined as a situation in which percentage of casually hired workers in the workforce tends to grow overtime.
9. No, they are not workers, as they are not doing any productive work.

10. Informalisation of work force refers to a situation whereby the proportion of workforce in the informal sector to total workforce increases.
11. In case of rural areas, self employed workers are greater as majority of rural people are engaged in farming on their own plots of land.
12. (i) Industrial unemployment
(ii) Educated unemployment
13. Disguised unemployment refers to a state in which more people are engaged in work than are really needed.
14. All persons, who are working (have a job) and thought not working, are seeking and are available for work, are deemed to be in the labour force.
15. The number of persons, who are actually employed at a particular time are known as workforce.
16. Worker population ratio is the percentage of total population engaged in work.
17. Workers who are not hired by their employers on a regular or permanent basis (i.e. donot have job security) and do not get social security benefits, are formed as casual wage labour.
18. It is an unorganised sector of an economy which includes all those private sector enterprises which employ less than 10 workess.
19. Regular salaried employees are more in urban areas as considerable section of urban people are able to study in various education institutions and if enables them to look for an oppropriate job to suit their qualification and skill.
20. We differentiate to calculate the number of workers. People engaged only in production economic activities are to be included in the category of workness.

Chapter - 8

Unit - 7

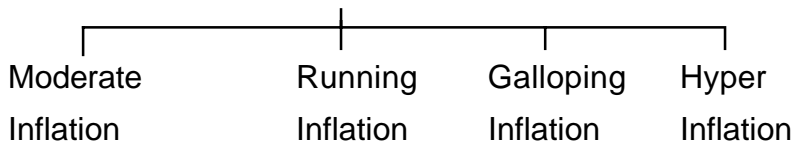
Inflation : Problem and Policies

By inflation in ordinary language, we mean a process of rising prices. Inflation is a situation of persistent and appreciable rise in prices, leading to fall in purchasing power of money. A chief measure of price inflation is the inflation rate, the annualized percentage change in a general price index over time.

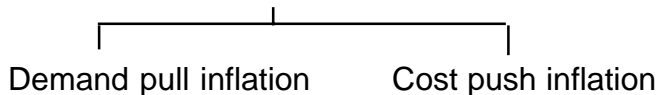
Types of inflation

There are many types of inflation on different grounds.

1. According to the rate inflation



2. On the basis of cause of origin :



Demand Pull Inflation : Demand -pull inflation arises when there is an excess of demand for goods over their supply. When is a persistent increase in demand and supply does not increase proportionately, then price tends to rise. The main causes of demand pull inflation are :

- * Increase in public expenditure.
- * Increase in investment
- * Increase in money supply
- * Growth in black money
- * Increase in population

Cost push inflation : Cost push inflation occurs when rise in price is due to rise in the cost of production. In this type of inflation, demand factor plays an important and supply factor plays an important role. Once, this type of inflation sets in one industry, it spreads to all other industries of an economy.

Main causes of cost-push inflation are :

- * Higher wage rate
- * Higher profit margin
- * Higher taxes
- * Fall in the availability of basis inputs.
- * Administered higher prices of inputs.

Causes of Inflation

1. Demand factors

- * Growth of population
- * Rise in employment and income
- * Increase in pace of urbanisation.

2. Supply factors

- * Irregular agricultural supply
- * Hoarding of essential goods.
- * Rise in administered prices.
- * Agricultural price policy
- * Rising prices of imports
- * Inadequate growth of industrial production.

3. Monetary and fiscal factors

- * Rising levels of government expenditures.

- * Deficit financing.

Effect of Inflation

Micro - on Individual

- * Real income declines
- * Wealth value declines
- * Income redistribution causes social tensions.

Macro - on Economy

- * Hoarding and black marketing.
- * Speculation increases
- * Nominal pay increase
- * Higher tax bracket.
- * Deterioration of quality of goods and standard of living.

Policy measures to control inflation

Monetary measures

- * Raising bank rate
- * Raising cash reserve ratio and statutory liquidity ratio.
- * Open market operations

Fiscal Measures

- * Reverse policy
- * Expenditure policy

Physical or non monetary measures

- * Increasing output or increasing inputs
- * Controlling money wages
- * Price control and rationing.

01 MARK QUESTIONS

1. Define inflation
2. Define deflation
3. Define stagflation
4. Which demand factors cause inflation?
5. Which supply factors cause inflation?
6. What is demand pull inflation?
7. What is cost push inflation?
8. What is inflation rate?
9. Who controls and monitor monetary policy india?
10. What is fiscal policy?

SHORT ANSWER QUESTIONS (03-04 MARKS)

1. Explain demand pull inflation.
2. Explain monetary measures to control inflation.
3. Explain fiscal measures to control inflation.
4. What are the various types of inflation?
5. What are supply factors which cause inflation?
6. What are the major impact of inflation on the economy?

LONG ANSWER QUESTIONS (6 MARKS)

1. What is demand pull inflation? What are its causes?
2. What is cost push inflation. What are its causes?
3. What have been general causes of inflation in India?
4. What are the measures taken by the government to tackle inflation?
5. What is the impact of inflation on the economy?

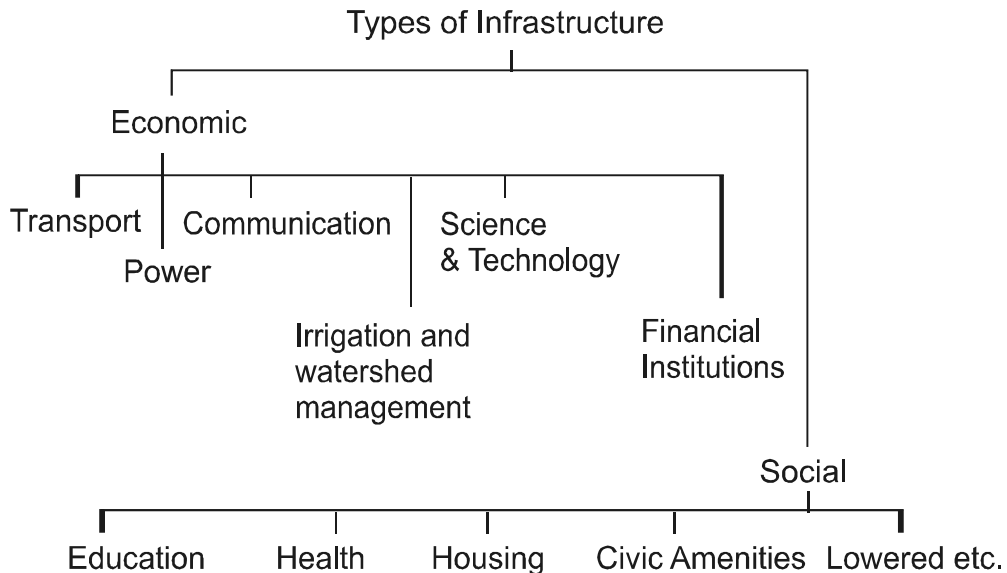
ANSWERS OF 01 MARK QUESTIONS

1. Inflation is a situation of persistent and appreciable rise in prices, leading to fall in purchasing power of money.
2. Deflation is a situation where prices are falling and value of money is rising.
3. Stagflation means stagflation plus inflation. It is a situation where stagflation co- exists with inflation in an economy.
4. Growth in population, rise in employment and increasing pace of urbanisation cause inflation.
5. Hoarding of essential goods, irregular agricultural supply, rise in administered prices and inadequate growth of industrial production are some of the supply factors which cause inflation.
6. Demand pull inflation arises when there is an excess of demand for goods over their supply.
7. Cost push inflation occurs when rise in price is due to rise in the cost of production.
8. Inflation rate is a chief measure of price inflation. It is annualized percentage change in a general price index over time.
9. The reserve bank of india controls and monitors monetary policy in India.
10. Fiscal policy is the expenditure and revenue policy of the government.

Chapter - 9
Unit - 7
Infrastructure

Point to remember

- * Infrastructure refers to all such activities, services and facilities, which are needed to provide different kinds of services in an economy.
- * It contributes to economic development of a country both by raising the productivity of factors of production and improving the quality of life of its people.
- * It provides supporting services in the main areas of industrial and agricultural production, domestic and foreign trade and commerce.



Importance of infrastructure

- * Raises productivity
- * Provides employment

- * Induces foreign investments
- * Raises ability of work
- * Facilitates out sourcing
- * Raises economic development
- * Raises size of the market

The state of infrastructure in India

- * India invests only 5 percent of its GDP on infrastructure, which is far below that of china and indonesia.
- * With government, private sector in joint partnership with the public sector is also playing on very important role in the infracture development.
- * India needs to develop its infrastructure specially in the area of rural energy requirement, water, basic amenties and sanitation.

Energy :

Energy is an important input for most of the production processes and consumption activities.

Sources of Energy

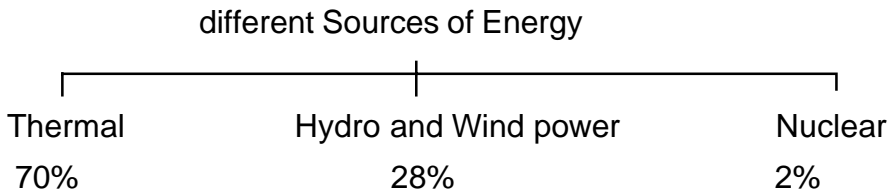
- * Commercial sources are coal, petrolium and electricity.
- * Non- commercial sources of energy are firewood agricultural waste and dried dung. Conventional sources of energy include both commercial non-commercial sources of energy example, national gas, coal, petroleum etc.

Non- conventional sources of energy are renewable resources of energy like biomass, solar energy, wind energy, tidal energy, etc.

Consumption pattern of commercial energy

- * At present, commercial energy consumption is 65 percent of total energy consumed in India.
- * Coal has the largest share of 55 percent, followed by oil at 31 percent, natural gas at 11 percent and hydro energy at 3 percent.
- * Non-commercial energy sources account for over 30 percent of the total energy consumption.

Power/ electricity : The most visible form of energy, which is often identified with progress in modern civilization is power/ electricity.



Some challenges in the power sector

- * Insufficient installed capacity
- * Under utilisation of capacity
- * Losses incurred by SEBS
- * Uncertain role of private sector
- * Public unrest
- * Shortage of raw materials
- * Transmission and distribution losses.
- * Operational inefficiency

Measures to meet challenges facing the power sector.

- * Reduce transmission and distribution losses.
- * Improve plant load factor

- * Promote the use of CFLs to conserve energy
- * Encourage private sector participation
- * Hydel and wind energy sources
- * National Grid
- * Bio gas generation programmes.
- * Atomic energy

Health : Health is the holistic process related to the overall growth and development of the nation.

State of health infrastructure :

- * There has been significant expansion in physical provision of health services and improvements in health indicators since independence.
- * Public health system and facilities are not sufficient for bulk of the population.
- * There is a wide gap between rural urban areas and between poor and rich in utilising health care facilities.
- * Women's health across the country has become a matter of great concern with reports of increasing cases of female foeticide and mortality.
- * Regulated private sector health services can improve. The situation and at the same time, NGOs and community participation are very important in providing health care facilities and reading health awareness.
- * Indian system of medicine (ISDM) AYUSH (Ayurveda, yoga and naturopathy, unani, siddha, homoeopathy needs to be explored.

01 MARK QUESTIONS.

1. What is the meaning of non-conventional sources of energy?
2. What do you mean by transmission and distribution losses?
3. What are the indicators of health status of a country.
4. Mention one advantage of infrastructure.
5. What is global burden of disease?
6. Name the six systems of Indian medicine.
7. What is mordibidy?
8. What does plant load factor measure?
9. Why do state electricity boards suffer losses?
10. What do you mean by intant mortality rate?
11. What are the three basic sources of generating power?
12. What do you mean by economic infrastructure.
13. Name the state lagging behind in health care system?
14. Why investors are reluctatn to invest in tidal energy projects?
15. what types of fuels are used by rural women in India?

SHORT ANSWER QUESTION (3-4 MARKS)

1. What do you mean by mordibidy ? What are the factors affecting it.?
2. Differentialt between commercial and non- commercial sources of energy.
3. Explain the two categories, into which infrastructure is divided how are both interdependent?
4. How do infrastructure facilities boost production?
5. What are the three basic sources of generating power? Explain.
6. Write a short note on the alternative systems of health care in India?
7. What do you mean by primary and secondary sources of energy?

8. How does infrastructure contribute to the economic development of economy.
9. How has the consumption pattern of energy changed over the year?
10. How can we increase the effectiveness of healthcare programme?

LONG ANSWER QUESTIONS (06 MARKS)

1. How does infrastructure play an important role in the social and economic development of our economy?
2. What problems are being faced by power sector in India?
3. What is the three- tier system of health infrastructure in India?
4. What are the measures taken to cope up with challenges facing the health sector?
5. Solar energy, wind power and power produced from tides are going to be future sources of energy. What are their comparative merits and demerits?
6. How can we increase the effectiveness of health care programmes?
7. Discuss the reforms which have been initiated recently to meet the energy crisis in India?
8. What are the main characteristics of health of the people of our country?
9. How does infrastructure contribute to development of a country? Explain.
10. What is the contribution of NGOs in health care in India?

ANSWER OF 01 MARKS QUESTIONS

1. Non conventional sources of energy are renewable resources of energy like biomass, solar energy, wind energy, tidal energy etc.
2. Transmission and distribution losses refer to the losses which occur at the time of transmission and distribution of power because of technical reasons, pilferage or theft.
3. The health status is normally measured in terms of life expectancy at birth, infant mortality rate, birth rate, death rate, along with incidence of communicable and non- communicable diseases.
4. Infrastructure increases the productivity of the factors of production.
5. Global burden of disease (GBD) is an indicator used by experts to measure the number of people dying prematurely due to a particular disease as well as the number of years spent by them in a state of disability owing to the disease.
6. The six systems of Indian medicine are Ayurveda, yoga, Unani, Siddha, Naturopathy and homeopathy.
7. Morbidity means proneness to fall ill.
8. Plant load factor measures the operational efficiency of thermal power plants.
9. State electricity boards suffer losses due to transmission and distribution losses, theft of electricity, wrong pricing and other inefficiencies.
10. Infant mortality rate refers to number of deaths of infants before reaching the age of one per 1000 live births during that year.
11. Coal, oil and water are three basic sources of generation of power.
12. Economic infrastructure directly supports the economic system. It helps the economic system from inside.
13. Bihar, Madhya pradesh, Rajasthan and Uttar Pradesh.
14. Tidal energy has high capital cost and low running cost. As a result, a tidal power scheme may not produce returns for years. Thus, investors are reluctant to invest in such projects.
15. Rural women are still using bio- fuels such as crop residues, dung and fuel wood to meet their energy requirement.

Unit-7
Current Challenges Facing Indian Economy
“Sustainable Economic Development”

- Points to Remember
 - Environment is defined as the total planetary inheritance and the totality of all resources. It includes all the biotic and abiotic elements that influence each other.
 - All living elements - the birds, animals and plants, forests, fisheries etc - are biotic elements.
 - Abiotic elements of the environment include non-living elements like air, water, land, rocks and sunlight etc.
 - Functions of the Environment :
 - i) Environment supplies resources (both renewable and non-renewable resources) for production.
 - ii) Environment assimilates waste.
 - iii) Environment sustains life.
 - iv) Environment enhances quality of life.
 - The environment is able to perform these functions without any interruption as long as demand on these functions is within its carrying capacity.
 - Carrying capacity implies two things :-
 - i) Resource extraction should remain below the rate of resource regeneration.
 - ii) Generation of wastes should remain within the absorption capacity of the environment.
- If these two conditions are not fulfilled, then environmental crises occurs.
- Absorptive capacity of the environment means the ability of the environment to absorb degradation.

- The various reasons for environmental crisis are as under :-
 - i) Population explosion and advent of industrial revolution.
 - ii) The intensive and extensive extraction of both renewable and non-renewable resources.
 - iii) The affluent consumption and production standards of developed countries.
- Renewable resources are those which can be used without the possibility of the resource becoming depleted or exhausted. That is, a continuous supply of resource remains available for e.g. trees in forest and the fishes in the oceans.
- Non renewable resources are those which get exhausted with extraction and use.
For e.g. fossil fuel.
- Two basic problems related to environment are :
 - i) Problem of pollution.
 - ii) Problem of excessive exploitation of natural resources, or degradation of natural resources.
- Pollution is contamination of useful things such as air, water, land etc. with undesirable or harmful materials like foul gases, smoke, poisonous chemicals, etc.
- The major forms of pollution are as follows :
 - i) Air pollution
 - ii) Water Pollution
 - iii) Noise Pollution
 - iv) Land Pollution
- Global warming is a gradual increase in the average temperature of the earth's lower atmosphere and oceans.
- Global warming is caused by man-made increase in carbon dioxide (CO₂) and other greenhouse gases through the burning of fossil fuels and deforestation.

- Some of the long term results of global warming are as follows :
 - i) Melting of polar ice with a resulting rise in sea level and coastal flooding.
 - ii) Extinction of species as ecological niches disappear
 - iii) more frequent tropical storms and ;
 - iv) An increased incidence of tropical diseases.
- Ozone depletion refers to reduction in the amount of Ozone (a protective layer) in the stratosphere.
- The problem of Ozone depletion is caused by high levels of CFC used as cooling substances in air conditioners and refrigerators.
- As a result of depletion of the ozone layer, more ultra violet (UV) radiation comes to earth and causes damage to living organism.
- The threat to India's environment poses a dichotomy - threat of poverty - induced environmental degradation and, at the same time, threat of pollution from affluence and a rapidly growing industrial sector.
- Air Pollution, water contamination, soil erosion, deforestation and wildlife extinction are some of the most pressing environmental concerns of India.
- The priority issues identified in India are
 - i) Land degradation
 - ii) Biodiversity loss
 - iii) Air pollution with special reference to vehicular pollution in urban cities.
 - iv) Management of fresh water.
 - v) Solid waste management.
- Land degradation refers to a decline in the overall quality of soil, water or vegetation condition, commonly caused by human activities.

- Some of the factors responsible for land degradation are
 - i) loss of vegetation occurring due to deforestation.
 - ii) Forest fires and over grazing.
 - iii) Improper crop rotation.
 - iv) Encroachment into forest lands.
 - v) Shifting cultivation.
 - vi) Indiscriminate use of agro-chemicals such as fertilizers and pesticides.
 - vii) Improper planning and management of irrigation systems.
 - viii) Extraction of ground water in excess of the recharge capacity.
 - ix) Poverty of the agriculture - dependent people.
 - x) Non-adoption of adequate soil conservation measures.
- Chipko and Appiko movements are related to protect forests.
- India's rapid economic developmet has made us aware of two realities :-
 - i) Economic development has lifted millions out from poverty.
 - ii) Economic development has been accompained by accelerated depletion of natural resources and rapid deterioration in environment quality.
- Sustainable development is that process of development which meets the needs of present generation without reducing the ability of future generation to meet their own needs.
- Main features of susainable development are as under :
 - i) Sustained rise in Real per Capita Income and Economic welfare.
 - ii) Rational use of natural resources.
 - iii) No reduction in the ability of the future generation to fulfill their own needs.
 - iv) No increase in pollution.

- To achieve sustainable development, the following needs to be done :
 - i) Limiting the human population
 - ii) Technological progress should be input efficient and not input-consuming.
 - iii) Renewable resources should be extracted on a sustainable basis, that is, the rate of extraction should not exceed rate of regeneration.
 - iv) For non-renewable resources rate of depletion should not exceed the rate of creation of renewable substitutes.
 - v) Inefficiencies arising from pollution should be corrected.
- Strategies for Sustainable Development.
 - i) Use of non-conventional sources of energy.
 - ii) Use of cleaner fuels : LPG, Gobargas in rural areas and CNG in Urban areas.
 - iii) Use of Solar energy and wind power.
 - iv) Shift to organic farming
 - v) Recycle the wastes
 - vi) Public means of transport.
 - vii) Traditional knowledge and practices.
 - viii) Establishment of Mini-Hydel plants.

VERY SHORT ANSWER TYPE QUESTIONS (1 mark each)

1. Define environment.
2. Give two examples of biotic elements of environment.
3. What do you mean by carrying capacity of environment?
4. Give the meaning of renewable resources.
5. What do you mean by non-renewable resources?
6. What happens when the rate of resource extraction exceeds that of their regeneration?
7. Give the meaning of absorptive capacity of the environment.
8. Why have some resources become extinct?
9. What is global warming?
10. Give two examples of overuse of resources
11. Define sustainable development.
12. Give two examples of misuse of resources.
13. State the two major environmental issues the world is facing today:
14. Mention any one measure to control air pollution.
15. Give the name of two movement which aimed at protecting forests.
16. State two basic problems related to environment.

SHORT SHORT ANSWER TYPE QUESTIONS (3/5 marks each)

1. What are the functions of the environment?
2. Identify six factors contributing to land degradation in India.
3. Explain how the opportunity costs of negative environmental impact are high.
4. Outline the steps involved in attaining sustainable development in India.
5. Is environmental crisis a recent phenomenon? If so, why?
6. Keeping in view your locality, describe any four strategies of sustainable development.

7. Define the concept of sustainable development and state its features.

LONG ANSWER TYPE QUESTIONS (6 marks each)

1. Discuss the strategy of sustainable development.
2. Explain how India's environmental problems are both poverty induced as well as the consequences of affluence in living standards.
3. What is meant by sustainable economic development? Explain its main features.
4. How economic development causes environmental degradation? Explain.
5. Explain the supply - demand reversal of environmental resources.

ANSWER OF ONE MARK QUESTIONS

1. Environment is defined as the total planetary inheritance and the totality of all resources.
2. Animal and plants.
3. Carrying capacity of the environment implies that the resource extraction is not above the rate of regeneration of the resources and the wastes generated are within the absorption capacity of environment.
4. Renewable resources are those which can be used without the possibility of being exhausted, such as trees, fishes etc.
5. Non-renewable resources refer to those resources which get exhausted with extraction and use such as fossil fuel, coal etc.
6. Then environment fails to perform its vital function of life sustenance and it leads to the situation of environmental crisis.
7. Absorptive capacity of the environment means the ability of the environment to absorb degradation.

8. Some resources have become extinct because their extraction has been above the rate of regeneration.
9. Global warming is a gradual increase in the average temperature of the earth's lower atmosphere and ocean.
10.
 - i) Excessive exploitation of fossil fuel.
 - ii) Excessive tree felling.
11. Sustainable development is that process of development which meets the needs of present generation without reducing the ability of future generation to meet their own needs.
12.
 - i) Use of wood as a household fuel.
 - ii) Use of rivers to absorb industrial effluents.
13.
 - i) Depletion of natural resources
 - ii) Environmental degradation
14. Promotion of cleaner fuel, like use of CNG, LPG
15.
 - i) Chipko Movement
 - ii) Appiko Movement.
16.
 - i) Problem of Pollution.
 - ii) Problem of excessive exploitation of natural resources.

Unit-8
Development Experience of India
A Comparison with Neighbours

- Points to Remember
- Development Path of India, Pakistan and China :
 - i) All the three countries started their developmental path at the same time. India and Pakistan got independence in 1947 and people's Republic of China was established in 1949.
 - ii) All the three countries had started planning their development strategies in similar ways. India announced its First Five Year Plan in 1951, Pakistan announced in 1956 and China in 1953.
 - iii) India and Pakistan adopted similar strategies, such as creating a large public sector and raising public expenditure on social development.
 - iv) Both India and Pakistan had adopted 'mixed economy' model but China had adopted 'Command Economy' model of economic growth.
 - v) Till 1980s, all the three countries had similar growth rates and per capita incomes.
 - vi) Economic Reforms were initiated in China in 1978, in Pakistan in 1988 and in India in 1991.

DEVELOPMENT STRATEGY :

A. China

- i) After the establishment of People's Republic of China under one-party rule, all the critical sectors of the economy, enterprises and lands owned and operated by individuals, were brought under government control.
- ii) A programme named 'The Great Leap Forward (GLF) campaign was initiated in 1958, which aimed at industrialising the country on a massive scale. Under this programme, people were encouraged

to set up industries in their backyards.

- iii) 1965, Mao Tse Tung introduced the 'Great Proletarian Cultural Revolution (1966-1976)', under which students and professionals were sent to work and learn from the countryside.
- iv) In rural areas, communes were started, under which people collectively cultivated lands.
- v) Reforms were introduced in China in phases.
- vi) In the initial phase, reforms were initiated in agriculture, foreign trade and investment sectors. In the later phase, reforms were initiated in the industrial sector.
- vii) The reforms process also involved dual pricing. This means fixing the prices in two ways; farmers and industrial units were required to buy and sell fixed quantities of raw materials and products on the basis of prices fixed by the government and rest were purchased and sold at market prices.
- viii) In order to attract foreign investors, Special Economic Zones (SEZ) were set up.

B. PAKISTAN

- i) Pakistan followed the mixed economy model with co-existence of public and private sectors.
- ii) Pakistan introduced tariff protection for manufacturing of consumer goods, together with direct import controls on competing imports.
- iii) The introduction of Green Revolution and increase in public investment in infrastructure in select areas, led to a rise in the production of foodgrains.
- iv) In 1970's, Capital goods industries were nationalised.
- v) In 1988, structural reforms were introduced. Major thrust areas were denationalisation and encouragement to private sector.
- vi) Pakistan also received financial support from western nations and remittances from emigrants to the Middle East countries. This helped the country in stimulating economic growth.

- **Comparative Study - India, Pakistan and China**

1. Demographic Indicators :

- The population of Pakistan is very small and accounts for roughly about one-tenth of China and India.
- Though China is the largest nation geographically among the three, its density is the lowest.
- Population growth is highest in Pakistan followed by India and China. One-child norm introduced in China in the late 1970s is the major reason for low population growth. But this measure led to a decline in the sex ratio, that is the proportion of females per 1000 males.
- The sex ratio is low and biased against females in all the three countries. There is strong son-preference prevailing in all these countries as the reason.
- The Fertility rate is low in China and very high in Pakistan.
- Urbanisation is high in both China and Pakistan - with India having 28 percent of its people living in Urban areas.

2. Gross Domestic Product (GDP) and Sectors :

- China has the second largest GDP (PPP) of \$7.2 trillion where as India's GDP (PPP) is \$ 3.3 trillion and Pakistan's GDP is roughly about 10 percent of India's GDP.
- In 1980s Pakistan was ahead of India in GDP growth rate. China was having double digit growth rate and India was at the bottom.
- In 1990s there is a marginal rise in India's growth rate and a marginal decline in China's growth rate but a drastic decline in Pakistan's growth rate. Some Scholars hold the reform process introduced in 1988 in Pakistan and Political instability as the reason behind this trend.
- In China, in the year 2000, with 54 percent of its workforce engaged in agriculture, its contribution to GDP is 15 percent. In both India

- and Pakistan, the contribution of agriculture to GDP is the same, at 23 percent. In Pakistan about 49 percent of people work in agriculture whereas in India it is 60 percent.
- In china, manufacturing contributes the highest to GDP at 53 percent whereas in India and Pakistan, it is the service sector which contributes the highest (more than 50 percent of GDP)
 - Though china has followed the classical development pattern of gradual shift from agriculture to manufacturing and then to services, India and Pakistan's shift has been directly from agriculture to service sector.
 - In the 1980s, India, China and Pakistan employed 17, 12 and 27 percent of its workforce in the service sector respectively. In 2000, It reached the level of 24, 19 and 37 percent respectively.
 - China's growth is mainly contributed by the manufacturing sector where as in both India and pakistan, the service sector is emerging as a major player of development.

3. HUMAN DEVELOPMENT INDICATORS :

- In most areas of human development, China has performed better than India and Pakistan. This is true for many indicators - GDP per Capita or proportion of population below poverty line or health indicators such as mortality rates, access to sanitation, literacy, life expectancy or malnourishment.
- Pakistan is ahead of India in reducing proportion of people below the poverty line and also its performance in sanitation and access to water is better than India. But neither of these two countries have been able to save women from maternal mortality.
- India and Pakistan are ahead of China in providing improved water sources :
- Conclusion
- A) India - India performed moderately as is clear from :

- A majority of its people still depend on agriculture.
 - Infrastructure is lacking in many parts of the country.
 - It is yet to raise the level of living of more than one-fourth of its population that lives below the poverty line.
- B) Pakistan - Pakistan has performed poorly. The reasons for the slowdown of growth and re-emergence of poverty in Pakistan's economy are :
- i) Political instability.
 - ii) Volatile performance of agriculture sector.
 - iii) Over dependence on remittances.
 - iv) Growing dependence on foreign loans on the one hand and increasing difficulty in paying back the loans on the other.
- C) China - China has performed comparatively the best as is clear from:
- Success in raising the level of growth along with alleviation of poverty.
 - It used the market mechanism to create additional social and economic opportunities without losing political commitment.
 - By retaining collective ownership of land and allowing individuals to cultivate lands, China has ensured social security in rural areas.
 - Public intervention in providing social infrastructure has brought about positive results in human development indicators in China.

VERY SHORT ANSWER TYPE QUESTIONS (1 mark each)

1. What type of economic system is followed in China?
2. Mention some examples of regional and economic groupings.
3. When were reforms introduced in all the three economies?
4. Give the meaning of infant mortality rate.
5. In which country, the Great Proletarian Cultural Revolution was introduced?
6. Between India and China, which country has higher value of Human Development Index?
7. Mention the major reason for the low population growth in China.
8. Name the programme started in China with the aim of industrialisation.
9. Which country has the highest life expectancy - India, China or Pakistan?
10. Out of China, Pakistan and India, which country has the largest contribution of the service sector to the GDP?
11. Out of India, China and Pakistan, Which country has the highest workforce engaged in agriculture?
12. Name any two indicators of human development.
13. Name any two indicators of comparative development.
14. Name the two areas of development where Pakistan has topped India.
15. Name the two areas of development where India has an edge over Pakistan.

SHORT ANSWER TYPE QUESTIONS (3/4 marks each)

1. Explain the "Great Leap Forward" campaign of China, initiated in 1958.
2. Mention the various indicators of human development.
3. Briefly discuss the similarities in the developmental strategies

- followed by India, Pakistan and China.
4. Give reasons for the slow growth and re-emergence of poverty in Pakistan.
 5. Compare the GDP growth of China, India and Pakistan.
 6. Mention the salient demographic indicators of China, India and Pakistan.
 7. What is the important implication of the the 'one child norm' in China?
 8. Give an outline of the strategy of development adopted by China.
 9. How was the structural transformation different in China as compared with India and Pakistan.
 10. Give an outline of the strategy of development adopted by India and Pakistan after independence.

LONG ANSWER TYPE QUESTIONS (6 marks each)

1. Mention the various indicators of human development.
2. Compare the demographic indicators of India with China and Pakistan.
3. Explain the various factors that led to the rapid growth in economic development in China.
4. What are the areas where India has surpassed Pakistan?
5. Comment on the common failures of India and Pakistan.
6. What are the areas where Pakistan has performed better than India?
7. Compare the sectoral contribution in GDP and employment in India, China and Pakistan.
8. Explain how China has an edge over India.

ANSWERS OF ONE (1) MARK QUESTIONS

1. Command economy model. In this model all critical areas of production were brought under state ownership in China.
2. SAARC, ASEAN, European Union (EU), G-8 etc.

3. Reforms in China were introduced in 1978, in Pakistan in 1988 and India in 1991.
4. Infant mortality rate refers to number of infants dying before reaching one year of age per 1000 live birth in a year.
5. China
6. China
7. Introduction of 'One Child Policy'
8. Great leap forward programme.
9. China has the highest life expectancy of 71.6 years.
10. Pakistan.
11. India has the highest workforce (60%) engaged in agriculture.
12.
 - i) Life expectancy at birth
 - ii) Per Capita GDP (PPP) in US \$
13.
 - i) Growth
 - ii) Human Development
14.
 - i) Less percentage of population below poverty line.
 - ii) Percentage of population having access to improved water sources
15.
 - i) Skilled manpower
 - ii) Per Capita GDP (PPP) in US \$.

Blue Print to Question Paper Set- I

S.N. Unit	Name of Unit	No of question with weightag Q.(M)					
		Marks	1	3	4	6	Total
1.	Introduction		-	1(3)	-	-	1(3)
2.	Collection, organisation and presentation of data		2(1)	2(3)	1(4)		5(12)
3.	Statistical tools and Interpretation		3(1)	1(3)	3(4)	2(6)	9(30)
5.	Development Policies and experience (1947-1990)		1(1)	1(3)	-	1(6)	3(10)
6.	Economic Reforms Since - 1991		1(1)	1(3)	1(4)	-	3(8)
7.	Current Challenges facing Indian Economy		2(1)	3(3)	2(4)	1(6)	8(25)
8.	Development Experience of India - a comparison with Neighbours		1(1)	-	-	1(6)	2(7)
	Total		10(10)	9(27)	7(28)	5(30)	31(95)

SET-I
ECONOMICS

Class : XI

Time : 3 hours

M.M : 95

General Instructions :

- i) All questions in both the sections are compulsory.
 - ii) Marks for questions are indicated against each.
 - iii) Question No. 1-5 and 16-20 are very short answer short answer questions carrying 1 mark each. They are required to be answered in one sentence each.
 - iv) Question No 6-9 and 21-25 are short answer question carrying 3 marks each. Answer to them should not normally exceed 60 words each.
 - v) Question No. 10-13 and 26-28 are also short answer question carrying 4 marks each. Answer to them should not normally exceed 70 word each.
 - vi) Question No. 14-15 and 29-31 are long answer questions carrying 7 marks each. Answer to them should not normally exceed 100 words each.
 - vii) Answer should be brief and to the point and the above word limit be adhered to as far as possible.
-

SECTION : A

1. Define raw data.
2. Write the name of series which include all items. upto its upper limit.
3. If the value of mean and median are 40 and 48 resectively, find out the most probable value of mode.
4. Write one major demerit of mean deviation.

5. Give two examples of positive correlation
6. Differentiate between primary and secondary data.
7. Define pie-diagram. Write the steps of making pie-diagram.

Or

Present the following data of the construction of a school building with the help of pie diagram

ITEMS	wage	bricks	wood	cement	steel	ther
% Expehditure	20	15	25	10	18	12

8. Define discrete and continuous variable with the help of example.
9. Define Index Number. State its utility.
10. What is median. Write it three merits.

Or

Find the missing frequency if the mean of the following data is 44.8

X	20	30	40	50	60	70
Frequency	5	?	15	10	8	5

(Ans : 7)

11. Name the graphic method of measuring dispersion. Write its three demerits.
12. Calculate semi-inter Quartile range its co-efficient of the following data.

MARKS	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	4	8	11	15	12	6	3

(Ans : 11.55, 0.34)

13. Calculate price Index Number from the following data using laspeyre method.

Commodities	Base Year		Current Year	
	Price (\$)	Quantity	Price (\$)	Quantity
A	8	100	10	120
B	4	60	5	80
C	10	20	12	25
D	12	25	15	30
E	3	5	4	6

(Ans : 124.44)

14. Calculate the standard deviation from the following data by step deviation method.

CLASSINTERAVALS	0-10	10-20	20-30	30-40
FREQUENCIES	2	3	4	1

Or

Calculate Mode from the following data

Wages (\$)	No. of Workers
Less than 10	5
Less than 20	17
Less than 30	35
Less than 40	57
Less than 50	63
Less than 60	67
Less than 70	70

(Ans : 30.14)

15. Calculate Karl Pearson's coefficient of correlation of the marks obtained by 12 students in mathematics and statistics and interpret the relation.

Marks in Mathematics	50	54	56	59	60	62	61	65	67	71	71	74
Marks in Statistics	22	25	34	28	26	30	32	30	28	34	71	40

(Ans : $r = +0.78$)

SECTION : B

16. What do you mean by infant mortality rate?
17. What is meant by devaluation?
18. Name the movement started by National Literacy mission.
19. Define jobless Growth.
20. When were Economic reforms introduced in India and China?
21. State three main features of Indian Economy at the time of independence.
22. Write three arguments in favour of Economic reforms in India.

Or

How does increasing fiscal deficit create the requirement of Economic reforms in India?

23. How does human capital formation raise the production?
24. Explain monetary measures to control inflation.
25. Explain briefly how are following factors responsible for land degradation.
 - a) Deforestation
 - b) Excess use of Fertilizers.
26. Define Globalisation. State the three policies adopted for Globalisation.
27. What are the advantages of organic farming? Explain.

Or

How is co-operative marketing beneficial to individual farmers?

28. How do you define informal sector? What are the problems being faced by the workers of informal sector?
29. What were the main causes of India's agricultural stagnation during the colonial period? Explain.
30. How does infra-structure play an important role in the social and Economic development of an Economy?

Or

Explain any four causes responsible for poverty in India.

31. Compare the demographic indicators of India with China and Pakistan.

Blue Print to Question Paper Set- II

S.N. Unit	Name of Unit	No of question with weightag Q.(M)					
		Marks	1	3	4	6	Total
1.	Introduction		-	1(3)	-	-	1(3)
2.	Collection, organisation and presentation of data		2(1)	2(3)	1(4)		5(12)
3.	Statistical tools and Interpretation		3(1)	1(3)	3(4)	2(6)	9(30)
5.	Development Policies and experience (1947-1990)		1(1)	1(3)	-	1(6)	3(10)
6.	Economic Reforms Since - 1991		1(1)	1(3)	1(4)	-	3(8)
7.	Current Challenges facing Indian Economy		2(1)	3(3)	2(4)	1(6)	8(25)
8.	Development Experience of India - a comparison with Neighbours		1(1)	-	-	1(6)	2(7)
	Total		10(10)	9(27)	7(28)	5(30)	31(95)

SET-I
ECONOMICS

Class : XI

Time : 3 hours

M.M : 95

General Instructions :

- i) All questions in both the sections are compulsory.
 - ii) Marks for questions are indicated against each.
 - iii) Question No. 1-5 and 16-20 are very short answer short answer questions carrying 1 mark each. They are required to be answered in one sentence each.
 - iv) Question No 6-9 and 21-25 are short answer question carrying 3 marks each. Answer to them should not normally exceed 60 words each.
 - v) Question No. 10-13 and 26-28 are also short answer question carrying 4 marks each. Answer to them should not normally exceed 70 word each.
 - vi) Question No. 14-15 and 29-31 are long answer questions carrying 7 marks each. Answer to them should not normally exceed 100 words each.
 - vii) Answer should be brief and to the point and the above word limit be adhered to as far as possible.
-

SECTION : A

- 1. Write the median of First Five prime numbers.
- 2. Define Sample.
- 3. Write the formula of weighted arithmetic mean.
- 4. What is range.
- 5. Write the formula for calculating rate of inflation.
- 6. Explain the importance of statistics in Economics

7. Compute highest income of lowest 50% worker from the following series.

Daily Income (\$)	10-14	15-19	20-24	25-29	30-34	35-39
No. of Workers	5	10	15	20	10	5

(Ans : 25.12)

8. Write the merits and demerits of Lorenz curve.

Or

What is positive and negative correlation? Explain with the help of scatter diagram.

9. What do you mean by Index-Number? Discuss the importance of Index-Number
10. Differentiate primary and secondary data on the basis of following characteristics :
- Originality
 - Accuracy
 - reliability
 - Labour

11. Calculate mean from the following data

MARKS (Less Than)	10	20	30	40	50	60	70	80
No. of Students	25	40	60	75	95	125	190	240

(Ans : 49.58)

Or

Calculate Mode from the following :

Midvalue of Class Intervals	50	60	70	80	90	100	110
Frequency	7	12	17	29	21	5	3

(Ans : 80.7)

12. Calculate inter-quartile range from the following data.

Class-Intervals	1-5	6-10	11-15	16-20	21-25
No. of Students	5	10	15	6	4

(Ans : $Q_3 - Q_1 = 7.5$)

13. Complete standard deviation by direct method from the given series.

Size	0.5-1.5	1.5-4.5	4.5-5.5	5.5-8.5	8.5-13.5
Frequency	1	2	3	4	5

(Ans : 3.27)

14. Draw a 'Less than ogive curve' and 'more than ogive curve' on the basis of data given below.

MARKS	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	7	10	14	20	6	3

Or

What do you understand by Questionnaire? What are the essential characteristics of a good questionnaire?

15. Calculate the correlation coefficient between X and Y and comment on their relationship.

X	65	66	57	67	68	69	70	72
Y	67	56	65	68	72	72	69	71

(Ans : 0.44)

SECTION : B

16. Write the time period of current five year plan.
17. Define disinvestment.

18. What is the benefit of Ozon layer?
19. Define morbidity.
20. Write two examples of regional and Economic grouping of the countries.
21. What do you understand by drain of weath during the colonial period.

Or

Were there any positive contributions made by the British is India?
Discuss.

22. What measured have been taken for privalisation of Indian Economy?
23. What measures should be taken to remove poverty from India?
24. Which factors contribute to human capital formation?
25. Differentiate between commercial and non-commercial sources of Energy.
26. Write the achievements of Economic reforms is India.
27. Explain any two measures taken by the Government to improve agricultural marketing.

Or

What do you mean by unemployment write. The adverse effect of unemployment.

28. Explain how following measurer / policies of R.B.I. help to control inflation?
 - a) Open market operation.
 - b) Change in cash reserve ratio.
29. What is green revolution? Why was it implemented and how did it benefit farmer? Explain in brief.
30. How following steps and stratigies are helpful to achieve sustainable development in India.
 - a) Bio-composting
 - b) Solar power

- c) Use of LPG and CNG.
 - d) Mini-Hydel Plants.
31. Explain the role of the following strategies in the development of China.
- a) Great leap forward.
 - b) Special Economic Zones.
 - c) Dual pricing system.

Or

Give reason for the slow growth and re-mergence of poverty in Pakistan.