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Academic Session 2016-17

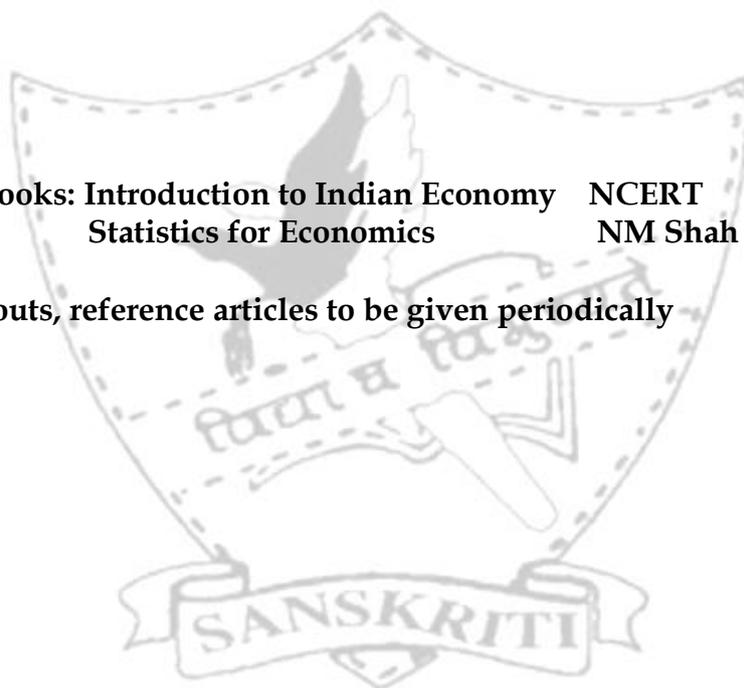
Monthly Syllabus

Month	Indian Economics	Statistics
April/May	<ul style="list-style-type: none"> ○ Brief introduction of the state of Indian economy on the eve of independence 	<ul style="list-style-type: none"> ○ Meaning, Scope and importance of Statistics in Economics ○ Collection of data <ul style="list-style-type: none"> ● Primary vs. secondary data ● Census vs. sampling method ● Concept of sampling methods ○ Organization of data <ul style="list-style-type: none"> ● Formation of series: individual, discrete, continuous ● Frequency distribution ● Preparation of questionnaire
July	<ul style="list-style-type: none"> ○ Development policies and experience(1947-1990) ● Common goals of five year plans ● Main features , problems and policies of agriculture, industry and foreign trade ● Project : As per CBSE guidelines 	<ul style="list-style-type: none"> ○ Presentation of data <ul style="list-style-type: none"> ● Frequency curve ● Histograms ● Polygon and Ogives ● Bar diagrams <ul style="list-style-type: none"> ● Pie charts ● Time series graphs ● Tables
August	<ul style="list-style-type: none"> ○ Inflation ○ Economic Reforms since 1991 ● Need and main features(Liberalization, Privatization and Globalization) ● An appraisal of LPG policies ● 	<ul style="list-style-type: none"> ○ Index Numbers ○ Condensation of data ● Measures of central tendency (Mean, Median and Partition values)
September	<ul style="list-style-type: none"> ○ Current challenges facing Indian Economy ● Poverty ● Employment ● Rural development 	<ul style="list-style-type: none"> ○ Measures of central tendency (Mode)
October	<ul style="list-style-type: none"> ● Human capital formation 	<ul style="list-style-type: none"> ○ Measures of dispersion ● Range, Inter quartile range, Mean deviation, Quartile deviation
November	<ul style="list-style-type: none"> ● Infrastructure – health and energy. 	<ul style="list-style-type: none"> ● Standard deviation, Coefficient of variation ● Meaning, construction and application of Lorenz Curve

December	<ul style="list-style-type: none"> • Environment and sustainable development • Development experience...allotment of different countries to the students for research on comparative study with India 	<ul style="list-style-type: none"> ○ Correlation • Scatter diagram • Karl Pearson's coefficient of correlation • Spearman's coefficient of rank correlation • Spearman's coefficient of rank correlation • Mathematical functions and slopes
January	<ul style="list-style-type: none"> • Development experience of India - a comparison with neighbours 	<ul style="list-style-type: none"> • Submission of project as per CBSE guidelines • OTBA
February	<ul style="list-style-type: none"> • Revision 	<ul style="list-style-type: none"> • Revision

**Reference Books: Introduction to Indian Economy NCERT
Statistics for Economics NM Shah**

Other handouts, reference articles to be given periodically



INDIAN ECONOMY AT THE EVE OF INDEPENDENCE**1 mark Questions**

1. What is per capita output?
2. When was Tata Iron and Steel Company incorporated in India?
3. When was India's first official census operation undertaken?
4. What is subsistence farming?
5. When was the railways introduced in India?
6. Name an economist who estimated India's per capita income during the colonial period.
7. Name a modern day industry which was in operation at the time of independence.
8. What is capital goods industry?
9. Give two causes of low productivity in agriculture during colonial rule in India.
10. How is infant mortality measured?

3 / 4 mark Questions

1. What were the main causes of India's low level of economic development during the colonial period?
2. State three ways in which there was a drain of Indian wealth during the colonial period.
3. What objectives did the British intend to achieve through their policies of infrastructure development in India?
4. What were the main causes of India's agricultural stagnation during the colonial rule?
5. What was the impact of the destruction of Indian handicraft industries by the British during the colonial period?
6. What was the main motive behind the beginning of railways in India? How did the development and construction of railways in colonial period affect the Indian economy?
7. What is commercialization of agriculture? How did commercialization of agriculture affect the Indian economy during British rule?
8. What was the impact of partition on India's agricultural sector at the eve of independence?
9. How did the British policy affect foreign trade in India?
10. "The British rule brought a few advantages to the Indian economy". Explain.

INDIAN ECONOMY (1950 - 1990)

1 mark Questions

1. What do you mean by consolidation of land holdings?
2. Give the classification of industries according to IPR 1956.
3. What was the idea behind abolition of intermediaries?
4. What is meant by self reliance?
5. What are land reforms?
6. What is meant by land ceiling?
7. What is marketable surplus?
8. What are subsidies?
9. Define a small scale industry.
10. Name two ways in which domestic industries can be protected from imports.
11. Why is NEP called the policy of "Economic Reforms"?
12. What is bilateral trade?

3/4 mark Questions

1. Explain the need and types of land reforms implemented in the agricultural sector. Have these reforms been successful in their implementation?
2. "Policy of import substitution can protect domestic industry from foreign competition." Explain with examples.
3. What are the main features of Indian agriculture?
4. What were the main shortcomings of the green revolution?
5. Why was public sector given a strategic role in industrial development during the planning period?
6. Why is reservation and protection essential for the growth of small scale and cottage industries in India?
7. Are subsidies necessary to promote agriculture in India?
8. What role did licensing policy and protectionism play in industrial development of independent India?
9. What is Green Revolution? What are its features?
10. How do small scale industries promote rural development?

6 mark Questions

1. While subsidies encourage farmers to use new technology, they are a huge burden on government finances. Discuss the usefulness of subsidies in the light of this fact.
2. Why was green revolution implemented in India? Did it benefit the farmers?
3. Why should small and cottage industries be protected in India?

ECONOMIC REFORMS SINCE 1991**1mark Questions**

1. What is outsourcing?
2. Define disinvestment.
3. Name two companies offering BPO services in India.
4. Give one way by which Indian industries were deregulated.
5. Name two services outsourced from India.
6. Is denationalisation the same as privatisation?
7. What is devaluation of rupee?
8. What is the meaning of quantitative restrictions?
9. Which aim of NEP is achieved by delicensing?
10. What is fiscal policy?

3/4 mark Questions

1. Why are tariffs imposed? Distinguish between tariff and non-tariff barriers.
2. India has certain advantages which make it a favourite outsourcing destination. What are these advantages?
3. Write a short note on WTO. What is its importance to India?
4. What is IMF? What are its objectives?
5. Highlight the major economic achievements since the introduction of the NEP 1991.
6. Describe the fiscal reforms undertaken in 1991.
7. Who were given the status of the 'Navaratnas'? Why?
8. What is SLR and CRR? What is its effect on investment?
9. What is balance of trade? What is the effect of devaluation on a country's balance of trade?
10. In spite of reforms post 1991, the performance of the industrial sector has been poor. Give reasons.
11. Discuss the changes introduced in India's foreign trade in order to promote capital inflow and encourage foreign trade.
12. Explain the ways in which a country can receive foreign investment.

6 mark Questions

1. Why were reforms introduced in India in 1991?
2. What are the functions of the RBI? What role does it play in controlling the operations of the commercial banks?
3. The benefits of the NEP did not trickle down to the agricultural and industrial sectors. Why?
4. Explain the changing role of the state in the Indian economy since 1991.
5. Explain the steps taken by NEP towards a) liberalisation b) globalisation

POVERTY**1 mark Questions**

1. What is Head Count Ratio?
2. Which are the BIMARU states?
3. Which projects have been launched to provide self-employment?
4. Which organisation collects data on poverty in India?
5. Name two programmes that aim at improving the food and nutritional value of the poor.
6. What is 'poverty gap'?
7. What is the minimum calorie intake estimated for rural and urban areas?

3/4 mark Questions

1. Differentiate between Relative and Absolute poverty.
2. Explain the three / four main causes of poverty in India.
3. Explain the term "vicious circle of poverty".
4. Explain the Mahatma Gandhi National Rural Employment Guarantee Act. How successful has this scheme been so far?
5. What mechanisms can be adopted for redistribution of income? Can this reduce poverty?
6. Why is population control essential for eradication of poverty?
7. "High growth rate is a necessary but not a sufficient condition for removal of poverty". Explain.
8. Describe the main reasons for failure of poverty alleviation programmes in India.
9. Illustrate the difference between rural and urban poverty. Is it correct to say that poverty has shifted from rural to urban areas? Use trends in poverty ratio to support your answer.
10. What are the ways to categorise the poor?

6 mark Questions

1. What is poverty line? How is it defined in India?
2. Describe any three measures undertaken to alleviate poverty in India.
3. Write a short note on any two of the following:
 - a. SwarnaJayanti Gram SwarozgarYojana
 - b. Mahatma Gandhi National Rural Employment Guarantee Scheme
 - c. SwarnaJayantiShahariRozgarYojana
4. What are the causes of poverty in India?
5. Write a short note on regional variation in incidence of poverty.
6. Evaluate the efforts made to solve the problem of poverty.

HUMAN CAPITAL FORMATION**1 mark Questions**

1. Why do we need to invest in human capital?
2. Why is government intervention necessary in health and education?
3. How is expenditure on education by government measured?
4. Who prepares HDI?
5. What is education cess? Why is it important?
6. Differentiate between physical and human capital.
7. Why does labour migrate?
8. What are the different sources of human capital formation?

3/4 mark Questions

1. Suggest the capital required for provision of health services in India. Explain with examples.
2. Explain the need for “universalisation of elementary education”.
3. How does human capital formation raise life expectancy?
4. How are economic growth and human capital interrelated?
5. Explain the role of NCERT.
6. Why do we observe regional differences in educational attainment in India? How is human development a broader term as compared to human capital?
7. What factors contribute to human capital formation?
8. Explain the Right to Education Act implemented by the government in 2010. India has a long way to go in achieving 100% literacy attainments. Mention any four areas that can be improved to achieve these goals.
9. What is an NGO? What role does it play in the economic development of India?
10. In your view is it essential for the government to regulate the fee structure in education and health care institutions? Why?

6 mark Questions

1. Differentiate between a) physical capital and human capital b) human development and human capital.
2. “Adult and female education needs to be given priority in our country” Explain.
3. What are the main problems of human capital formation in India? Suggest two measures to overcome this problem.
4. Explain how investment in education stimulates economic growth.

RURAL DEVELOPMENT**One mark Questions**

1. What is NABARD?
2. What is meant by rural development?
3. What is 'Operation Flood'?
4. Which state has an efficient implementation of milk co-operatives?
5. Name the states that are major producers of marine products.
6. What is micro credit?
7. What are the non-institutional sources of agricultural credit?
8. What is public investment?
9. What is organic farming?
10. What are co-operative markets?
11. What is the function of NABARD?

3/4 mark Questions

1. How has horticulture encouraged Indian rural development?
2. What is rural credit? Why is it needed?
3. Why has rural banking not been able to give adequate credit to farmers?
4. How does co-operative farming benefit individual farmers?
5. Explain the features of a regulated market.
6. Explain non-farm productive activities.
7. Explain the role of Micro credit in meeting credit requirement in India.
8. What is organic farming? How does it promote sustainable development?
9. What are the different sources of credit in India?
10. Do you think farmers should be encouraged to sell directly to the consumers? What effect will this have?

6 mark Questions

1. Write short notes on a. MSP b. Buffer Stock c. PDS
2. Information technology has gone a long way to bring about new developments to help the farmers. Explain the role of 'e chaupal' in this context.
3. What is organic farming? What are its advantages and its limitations?
4. What are the measures taken by the Government to improve agricultural marketing in India?
5. Bring out the importance of animal husbandry, fisheries, and horticulture as a source of diversification.
6. "Information technology plays a significant role in achieving sustainable development and food security" Comment.
7. Explain the significance of Self Help Groups in rural areas.
8. What are the challenges facing rural development?

EMPLOYMENT- GROWTH, INFORMALISATION AND OTHER ISSUES**1 mark Questions**

1. What is dependency ratio?
2. What is informalisation of work force?
3. What is economic activity?
4. Define voluntary unemployment.
5. What is jobless growth?
6. Explain the term urban unemployment
7. Why is the worker participation ratio in urban areas lower than in rural areas in India?
8. Who is a worker?
9. What is the informal sector?
10. What is a small scale industry?

3/4 mark Questions

1. What are the advantages regular salaried employees have over casual wage labourers?
2. Differentiate between work force and labour force. What is the participation rate?
3. Explain the types of rural unemployment.
4. Write a brief note on the National Rural Employment Guarantee Act 2005.
5. Why are fewer women found in regular salaried employment?
6. Elaborate the role of small scale and cottage industries in generating employment in the country.
7. State how casualisation of labour is happening in the Indian economy?
8. What is disguised unemployment? Explain how disguised unemployment can exist in rural and urban areas? Explain with the help of suitable examples.
9. Give two reasons for unemployment amongst the educated.
10. Why is the study of working population useful?

6 mark Questions

1. Explain how the public sector is leading to informalisation of employment since 2000.
2. What role does the government play in generating employment opportunities?
3. Explain the role of self-employment in a country like India.
4. With economic development, labour employment shifts to different sectors. Explain with reference to India.
5. Differentiate with examples between informal and formal sectors that promote employment.

INFRASTRUCTURE**1 mark Questions**

1. Define morbidity.
2. What is medical tourism?
3. What are the types of fuel used by rural women in India?
4. Why is the use of solar energy still not popular in India?
5. What is Unani?
6. Why is CFL being popularised inspite of its high price?
7. What is GBD?
8. Why does infrastructure need to be upgraded?
9. What does plant load factor measure?
10. What is infant mortality rate?

3/4 mark Questions

1. What are the measures taken to cope with the current challenges facing the power sector?
2. What is the contribution of NGOs in health care in India?
3. Differentiate between commercial and non-commercial sources of energy.
4. What are the emerging challenges in the health sector?
5. How do infrastructure facilities boost production and lead to economic development of a country?
6. What are the 3 basic sources of generating power in our country?
7. List the six systems of Indian medicine.
8. Explain economic and social infrastructure.
9. What are the indicators to assess the status of health in a country?
10. What does GBD measure? What does the value indicate for India?

6 mark Questions

1. What is the three tier system of health infrastructure in India?
2. Solar energy, wind power and power produced from tides are going to be future sources of energy. What are their comparative merits and demerits?
3. What are the challenges facing the power sector?
4. How can we increase the effectiveness of healthcare programmes?
5. Suggest ways in which healthcare facilities in India can be improved and made available to more people in India.
6. What is the state of health facilities being offered in rural India?
7. What are commercial and non-commercial sources of energy? Explain their consumption pattern in India.

ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**1 mark Questions**

1. What is carrying capacity of environment?
2. Name two movements to prevent cutting of trees.
3. What is sustainable development?
4. What is an 'Eco Mark'?
5. What are renewable resources?
6. Mention two sources of water pollution.
7. What is Bio-diversity loss?
8. Who monitors pollution control in India?

3/4 mark Questions

1. How do thermal and hydro power plants cause adverse impact on environment?
2. How can mini hydel plants sustain environment?
3. Give three steps and strategies to achieve sustainable development in India.
4. "Solar energy has an important role to play in our lives today". Critically evaluate this statement in the Indian context.
5. What happens when the rate of resource extraction exceeds that of their regeneration?
6. What is global warming? What are the long term repercussions of global warming?
7. Explain how the opportunity cost of negative environmental impact is high.
8. India's environmental problems pose a dichotomy- they are poverty induced and, at the same time, due to affluence in living standards. Is this true?
9. Why have environmental issues of waste generation and pollution become critical today?
10. What are the nonconventional sources of energy that need to be encouraged for a cleaner environment?

6 mark Questions

1. How do the following factors contribute to the environmental crisis in India? What problems do they pose for the government?
 - (a) Rising population
 - (b) Affluent consumption standards
 - (c) Illiteracy
 - (d) Lack of waste management
2. What is sustainable development? What according to leading environmentalists must be done to achieve sustainable development?
3. What are the factors responsible for land degradation?

COLLECTION AND ORGANISATION OF DATA

1. In a village of 200 farms, a study was conducted to find the cropping pattern. Out of 50 farms surveyed, 50% grew only wheat. Identify the population and the sample size.
2. What kind of classification is depicted in the following table?

Sales of a firm (2003-2005)

Year	Sales Rslakhs
2003	80
2004	90
2005	95

3. Prepare a frequency array of marks obtained by 25 students of a class in an economics test:
20, 15, 20, 30, 40, 25, 25, 30, 40, 20, 35, 35, 50, 15, 50, 25, 40, 40, 30, 50, 25, 30, 30, 15, 45
4. Prepare a frequency distribution of the age of 25 students of class XI as given below:
15, 16, 16, 17, 18, 18, 17, 15, 15, 16, 16, 15, 16, 16, 15, 17, 17, 18, 19, 16
5. From the following data relating to wages of 20 workers, prepare a frequency distribution of exclusive series with a class interval of 5:
10, 15, 25, 27, 29, 20, 24, 23, 22, 12, 14, 16, 17, 18, 19, 18, 16, 15, 5, 9
6. Construct a frequency distribution of inclusive series with an interval of 4:

10	17	15	22	11	16	19	24	29	18
25	26	32	14	17	20	23	27	30	12
15	18	24	36	18	15	21	28	33	38
34	13	10	16	19	22	29	19	23	31
7. Convert the following inclusive series into exclusive series:

C.I.	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25
No. of workers	10	15	20	25	30

8. From the following frequency distribution prepare 'less than' and 'more than' cumulative frequency distribution:

Wages (Rs)	100 - 110	110 - 120	120 - 130	130 - 140	140 - 150
No. of workers	4	12	20	7	5

9. Convert the following into normal frequency distribution:

Less than	25	30	35	40	45	50
Frequency	8	22	50	85	105	120

10. Convert the following into normal frequency distribution:

More than	0	10	20	30	40	50
Frequency	50	46	40	20	11	4

11. Convert the following 'less than' cumulative frequency distribution into 'more than' cumulative frequency distribution:

Marks	Less than 5	Less than 10	Less than 15	Less than 20
No. of students	7	20	38	55

12. If class mid points in a frequency distribution of a group of persons are 125, 132, 139, 146, 153, 160, 167, 174, 181

Find:

- (a) Size of class intervals
(b) The class boundaries.

13. If the class marks in a grouped frequency distribution of weights (kgs) of a group of students are:

75, 84, 93, 102, 111, 120, 129

Find out:

- a) Width of the class/size of the class interval.
b) The class limits.

PRESENTATION OF DATA

Tabulation

1. Draw a blank table depicting university admission details showing faculty, sex and residence.
2. The Economic Survey of 2002 revealed that in 2001 – 2002, total production of food grains was 1928 lakh tons of which production of rice and wheat was 860 and 708 lakh tons respectively. The rest was production of other crops. Percentage share of rice and wheat in the total production of crops was 44.60 and 36.72 respectively. Construct a suitable table.

3. Point out the mistakes in the following table and rearrange it in the form of a good table.

Literate	Less than 20	20 -30	30 -40	40 and above
Male				
Female				

4. The Indian Sugar Mills Association reported that “sugar production during the first fortnight of December, 2001 was 3, 87,000 tons as against 3, 78,000 tons during the same fortnight last year 2000. The off - take of sugar from factories during the first fortnight of December 2001 was 2,83,000 tons for internal consumption and 41,000 tons for exports as against 1,54,000 tons for internal consumption and nil for exports during the same fortnight last season”. Present the data in a tabular form.
5. 70 members of a club went on a picnic and on an average they paid Rs 14. There were 50 senior citizens each of whom paid Rs 15. The younger members were charged at a higher rate. The number of helpers was 10 (half of them were males) and they were taken free of cost. The number of females was 10 % of the total of which one was a senior citizen. Tabulate the above information.
6. Out of a total number of 1,807 women who were interviewed for employment in a textile factory of Mumbai, 512 were from textile areas and the rest from the non-textile areas. Among the married women who belonged to textile areas, 247 were experienced and 73 inexperienced, while for non-textile areas the corresponding figures were 49 and 520 respectively. The total number of inexperienced women was 1,341 of whom 111 resided in textile areas. Of the total number of women, 918 were unmarried, and of these the number of experienced women in the textile and non-textile areas was 154 and 16 respectively. Tabulate the given information

Diagrammatic Presentation

1. Draw a suitable diagram to depict demand and availability of steel ('000 tons)

Year	Demand	Availability
1984-85	6168	6569
1985-86	6558	8219
1986-87	7088	8989
1987-88	7658	9859

2. The following table gives data on birth rate in India according to census survey of different years. Present the information in the form of a simple bar diagram.

Year	1931-40	1941-50	1951-60	1961-70	1971-80	1981-90
Birth rate	45	40	42	41	38	36

3. Present the following data in the form of horizontal bar diagram:

Students	A	B	C	D	E	F
Marks	300	250	200	150	100	50

4. Use a suitable diagram to present the following data :

Statement of cold drinks sold in Sanskriti School canteen

Month	Ice Tea	Fruit Juice	NimbuPani	Total
July	100	160	420	680
August	120	130	360	610
September	100	120	300	520
October	150	80	400	630

5. India's import of crude oil is shown in the following table. Present the information in a pie diagram and a percentage bar chart.

Country	Year	
	1960-61	1998-99
OPEC countries	4.6	28.7
OECD countries	78	55
East European countries	3.4	11.6
Non oil exporting countries	11.8	42.1
Other countries	2.2	12.6

Graphic Presentation

1. Construct a histogram using the given data :

Weekly wages (Rs)	10-15	15-20	20-25	25-30	30-40	40-55	55-95
No. of workers	7	19	28	15	12	12	8

2. On a graph paper show that the area under a histogram is equal to the area under a frequency polygon and also a frequency curve.
3. Draw a histogram and a frequency polygon :

Marks	5-9	10-14	15-19	20-24	25-29	30-34
Students	4	17	25	32	12	6

4. Draw less than and more than ogive from the following frequency distribution :

Marks	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
No. of Students	7	10	20	13	12	10	15	8

5. Draw a frequency curve to depict the following information :

Movies seen per month	0-10	10-20	20-30	30-40	40-50	50-6-	60-70
No. of households	10	18	20	26	21	15	8

6. The following table gives data on the cost and sale of a factory (in thousand rupees)and of its competitor between January and June. Present the information in a time series graph.

Month	January	February	March	April	May	June
Cost	5	7.5	5	10	12.5	15
Sales	7.5	10	7.5	12.5	15	17.5
Cost (compt)	6	8	6	8	11.5	16
Sales (compt)	9	9.5	8	15	15	20

From the above graph, comment on the following:

- (a) What can you say on the cost trends of the factory and its competitor?
 (b) Comment on the sales of the 2 firms.

MEASURES OF CENTRAL TENDENCY

Mean

1. The following table gives the daily income of 10 workers in a factory. Find the mean by using direct & step deviation method.

Workers	A	B	C	D	E	F	G	H	I	J
Daily income (Rs)	120	150	180	200	250	300	220	350	370	260

2. Using the step deviation method, find the mean of the following:

Marks (Less than)	10	20	30	40	50	60
Frequency	5	12	25	36	45	50

3. Following are the marks obtained by 100 students in economics. Find the arithmetic mean by using (i) Direct method (ii) Step deviation method.

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No of students	5	10	25	30	20	10

4. The sales of a balloon seller in seven days in a week are as given below:

Days	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Sales(in Rs)	100	150	125	140	160	200	250

If the profit is 20% of sales, find his average profit per day.

5. Find the missing item p of the following distribution where the arithmetic mean is 11.37.

X	5	7	p	11	13	16	20
F	2	4	29	54	11	8	4

6. Calculate the arithmetic mean from the following data:

Midpoints	5	15	25	35	45	55
Frequency	5	7	12	18	5	3

7. The mean height of 25 male workers in a factory is 61cms, and the mean height of 35 female workers in the same factory is 58cms. Find the combined mean height of 60 workers in the factory.
8. The mean of 200 items was 50. Later it was discovered that two items were misread as 92 and 8 instead of 192 and 88. Find the correct mean.

Median

- Find the median of the following data: 20, 15, 25, 28, 18, 16, and 30.
- Calculate the median from the following data by arranging them in ascending order:

X	160	151	162	164	156
Frequency	5	6	6	2	7

- Calculate the mean and median from the following data series:

Marks	10-20	20-30	30-40	40-50	50-60	60-70
No of students	5	5	5	20	10	5

- Using the graphic method locate median from the following information:

Marks	0-10	10-20	20-30	30-40	40-50
No of students	10	20	30	20	10

- Compute the median for the following data:

Values(Less than)	10	20	30	40	50
Frequency	11	18	34	48	60

- A survey of small scale units in Thane district indicated the following age of workers:

Age	16-19	20-29	30-39	40-49	50-59	60-69
Frequency	15	46	49	32	28	14

Calculate the median of the above data.

- Find the missing frequency of the group 20-30, if the median of the series is 28.

Class intervals	0-10	10-20	20-30	30-40	40-50
Frequency	5	8	X	16	6

Mode

1. Calculate the mode of the following data: 3,5,4,7,9,6,5,5,9,1,2,3,5,6.
2. Using the grouping method, calculate the mode of the following data:

Size	30	35	40	45	50	55
Frequency	5	9	16	10	6	4

3. Compute mode from the following data:

Values(Less than)	10	20	30	40	50
Frequency	10	30	60	80	90

4. Calculate the mode of the following data:

Midpoints	5	10	15	20	25	30	35	40	45
Frequency	7	13	19	24	32	28	17	8	6

5. Calculate the mode using the grouping method:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No of students	2	5	7	10	7	5	2

6. Calculate mean, median and mode from the following data:

Monthly income	300-500	500-700	700-900	900-1100	1100-1300	1300-1500
No. of households	25	55	30	20	14	6

7. Locate the mode graphically and also calculate it using the inspection method:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No of students	5	10	20	25	20	10	5

Positional values

1. The following data shows the monthly wages of 10 workers. Calculate the lower and upper quartiles:

Monthly wages: 120,150,170,180,181,187,190,192,200,210.

2. Calculate Q_1 and Q_3 from the following data:

Wages	0-5	5-10	10-15	15-20	20-25	25-30
No of workers	4	6	3	8	12	7

3. Calculate P_{10} and D_4 from the following data:

Marks	10	20	30	40	50	60
No. of students	4	10	20	8	6	3

4. Calculate P_{20} , Q_1 and median with the help of the following data:

Income (in Rs)	800	1000	1200	1400	1600	1800
No. of persons	16	24	26	30	20	5

5. Find median, first quartile and third quartile of the following series:

Height (in cms)	58	59	60	61	62	63	64	65	66
No. Of persons	2	3	6	15	10	5	4	3	1

6. The following table gives the distribution of wages of 65 employees in a factory. Draw a 'less than' curve from the above data and estimate the number of employees earning at least Rs63 but less than Rs 75.

Wages in Rs (More than)	50	60	70	80	90	100	110	120
No. of employees	65	57	47	31	17	7	2	0

7. The following series relates to the daily income of workers employed in a firm. Compute:

- Highest income of lowest 50% workers
- Minimum income earned by top 25% workers
- Maximum income earned by lowest 25% workers

Daily Income (in Rs)	10-14	15-19	20-24	25-29	30-34	35-39
No. of workers	5	10	15	20	10	5

MEASURES OF DISPERSION

1. Find range and coefficient of range from the following data:

X	25	27	30	31	32	38	48	30	50
---	----	----	----	----	----	----	----	----	----

2. Find range and coefficient of range from the following data:

Wages	8	9	10	11	12	13	14
No. of workers	10	15	18	10	4	5	3

3. Find range and coefficient of range from the following data:

Size	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
Frequency	2	3	12	10	8

4. Calculate Inter- quartile range from the following data:

C.I.	1 - 5	6 - 10	11 - 15	16 - 20	20 - 25
Frequency	5	10	15	6	4

5. Calculate quartile deviation and its coefficient from the following data:

Wages	50	55	58	60	70	90	95	110
No. of workers	5	7	12	10	8	6	2	9

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

Wages(Rs)	Less than 35	35 - 37	38 - 40	41 - 43	Over 43
No. of workers	14	62	99	18	7

7. Compute mean deviation from mean and its coefficient from the following data:

Weekly wages (Rs)	200 - 400	400 - 600	600 - 800	800 - 1000
No. of workers	20	40	30	10

8. Calculate mean deviation from the mean from the following data:

C. I.	45 - 50	50 - 55	55 - 60	60 - 65
Frequency	20	26	38	16

9. Calculate standard deviation and its coefficient from the following data using direct method: 100, 90, 120, 110, 80, 70, 150, 130, 50, 100

10. Calculate standard deviation from the following data

No. of goals	0	1	2	3	4
No. of matches	27	9	8	5	4

11. Calculate standard deviation from the following data using step deviation method:

Marks	Below 20	Below 40	Below 60	Below 80	Below 100
No. of students	8	20	50	70	80

12. From the prices of shares X and Y given below, state which share is more stable in value?

X	41	44	43	48	45	46	49	50	42	40
Y	91	93	96	92	90	97	99	94	98	95

13. The scores of two batsmen A and B in five innings during a certain match are:

A	32	28	47	63	71
B	19	31	48	53	67

Which batsman is a better scorer and who is a more consistent batsman?

14. Daily wages paid to workers in two factories X and Y are given below:

Daily wages	No. of workers	
	Factory X	Factory Y
12 - 13	15	25
13 - 14	30	40
14 - 15	44	60
15 - 16	60	35
16 - 17	30	12

- a) Which factory pays higher average wages?
b) Which factory has a more consistent wage structure?

15. Draw Lorenz curve from the data given below:

Income	100	200	400	500	800
No. of persons	80	70	50	30	20

16. Draw Lorenz curves for factory A and B and compare the degree of inequality in incomes in two different factories:

Wages (Rs)	No. of workers	
	Factory A	Factory B
10	60	150
12	80	100
14	120	90
16	90	110
20	100	30
28	50	20

MEASURES OF CORRELATION

- If $r = +1$ or -1 , what kind of relationship exists between X and Y ?
- Find Karl Pearson's coefficient of correlation if $N = 50$, $\sum X = 75$, $\sum X^2 = 130$, $\sum Y = 70$, $\sum Y^2 = 140$ and $\sum XY = 128$.
- Can ' r ' lies outside -1 and $+1$?
- Draw three hypothetical scatter diagrams showing the following value of ' r ':
a) $r = -1$, (b) $r = 0$ & (c) $r = +1$
- The following data shows respective heights of 8 girls and 8 boys in inches:

Height of girls	65	63	67	64	68	70	71	69
Height of boys	67	66	68	65	69	68	70	68

Construct a scatter diagram and indicate the nature of correlation.

- Draw a scatter diagram and interpret whether the correlation is positive or negative:

X	4	5	6	7	8	9	10	11	12	13	14	15
Y	78	72	66	60	54	48	42	36	30	24	18	12

- Calculate Karl Pearson's coefficient of correlation from the following data:

Price (Rs)	10	12	14	16	18
Quantity (Units)	20	29	21	22	28

- Calculate Karl Pearson's coefficient of correlation from the following data:

Price Index (X)	120	150	190	220	230
Money Supply in Rscrores (Y)	1800	2000	2500	2700	3000

9. Calculate Karl Pearson's coefficient of correlation between ages of husband and wife from the following data:

Age of husband	21	22	23	24	25	26	27
Age of wife	16	15	17	18	19	20	21

10. Calculate Karl Pearson's coefficient of correlation from the following data:

X	200	190	180	170	160	150
Y	20	30	40	60	70	80

11. A group of 8 students get the following percentage of marks in a test in statistics and accountancy.

% Marks in Statistics	50	60	65	70	75	40	80	85
% Marks in accountancy	80	71	60	75	90	82	70	50

Compute the coefficient of rank correlation.

12. Five competitors in a beauty contest are ranked by three judges in the following order:

Rank by judge A	1	2	3	4	5
Rank by judge B	2	4	1	5	3
Rank by judge C	1	3	5	2	4

Using rank correlation coefficient, determine which pair of judges has the nearest approach to common tastes in beauty.

13. Calculate coefficient of rank correlation from the following data:

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

14. Calculate Spearman's coefficient of correlation from the following data:

X	20	11	24	18	20	22
Y	24	9	20	22	9	21

INDEX NUMBER

1. With the help of following data calculate index number for 2007 taking 2006 as the base year using simple aggregative method:

Commodity	Price in 2006 (Rs)	Price in 2007 (Rs)
A	100	145
B	90	130
C	145	200
D	180	275
E	85	150

2. Compute a price index from the following by simple aggregative & simple average of price relative method:

Commodity	A	B	C	D	E	F
Prices in 2005	200	300	100	250	400	500
Prices in 2008	250	300	150	350	450	550

3. Calculate weighted aggregative price index from the following data by using Paasche's method:

Commodities	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	10	30	12	50
B	8	15	10	25
C	6	20	6	30
D	4	10	6	20

4. Construct index numbers of prices from the data given below by applying:
(a) Laspeyres's method (b) Paasche's method

Commodities	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	2	40	3	20
B	1.5	30	2.5	40
C	1	50	1.5	30
D	2.5	20	2	80

5. From the following data compute index number for 2005 taking 2003 as base year by applying weighted average of price relative method:

Commodity	Quantity	Price (in Rs)	
		2003	2005
A	5 qtl	100	125
B	5 qtl	200	250
C	1 qtl	80	100
D	3 qtl	120	180
E	5 Kg	8	10
F	80 Kg	2	3

6. The monthly per capita expenditure incurred by workers of an industrial centre during 2002 and 2006 on the following items are given below. The weights of these items are 75, 10, 5, 6 and 4 respectively. Prepare a weighted index number for cost of living for 2006 with 2002 as base.

Items	Price in 2002	Price in 2006
Food	100	200
Clothing	20	25
Fuel and lighting	15	20
House rent	30	40
Miscellaneous	35	65

7. Construct the Consumer Price Index Numbers for 2005 on the basis of 2004 from the following data using:
- Aggregative Expenditure Method
 - Family Budget Method

Articles	Quantity consumed in 2004	Price in 2004 (Rs)	Price in 2005 (Rs)
Wheat	2 qtl	150	165
Gram	1 qtl	80	100
Rice	1 qtl	120	150
Bajra	1.5 qtl	60	90
Arhar	1.5 qtl	100	140
Oil	10 qtl	10	12
Gur	40 qtl	2	3

8. What will be the real wage of the consumer if his money wage is Rs 10,000 and the cost of living index is 526?
9. If the salary of a person in the base year is Rs 4000 per annum and the current year salary is Rs 6000. By how much should his salary rise to maintain the same standard of living if the CPI is 400?
10. Calculate the inflation rate from the following data:

Year	1998 - 99	1999 - 2000	2000 - 01	2001 - 02	2002 - 03
WPI (1993 -94)	140.7	145.7	155.7	161.3	166.8

11. Below are given the output data for five industries for two years 2002 and 2006. Prepare the index of industrial production for the year 2006 with 2002 as base year.

Industry	Output (units)		Weights
	2002	2006	
Software	100	150	10
Petrochemical	75	100	30
Fabrics	90	90	20
Coal	60	40	15
Machinery	80	100	25

Inflation

Price of a commodity is determined by the quantity demanded and quantity supplied of the commodity. Price rises when either demand increases or supply decreases. However, a mere rise in the price of a commodity or a few commodities in an economy cannot be termed as inflation.

Inflation is a situation of persistent and appreciable rise in the general price level of an economy over a period of time leading to a fall in the purchasing power of money. This implies that every unit of rupee can buy fewer goods and services as an economy witnesses inflation.

A mild inflation (less than 3%) is good for an economy as it encourages people to invest in productive areas, thereby boosting an economy

There are two causes of inflation: demand pull inflation and cost push inflation.

Demand pull inflation

This happens when the demand for goods and services is greater than their supply. This excess demand tends to push prices up.

The main causes are:

1. **Increase in disposable income of the consumer:** this results in increase in purchasing power and hence greater demand for goods and services e.g. the implementation of 6th Pay Commission enhanced the purchasing power of many government employees.
2. **Increase in population:** this raises the number of consumers in the market and hence the total demand.
3. **Growth in black money:** Illegal and unaccounted for money leads to higher consumption as this money is difficult to save in bank accounts etc.
4. **Increase in money supply:** RBI may increase money supply in the economy through its monetary policy by lowering the CRR or SLR. This raises the circulation of money in the economy and in turn the demand for goods and services.
5. **Increase in Government expenditure:** public expenditure e.g. on Commonwealth Games, increases the demand for many goods and services.

Cost push inflation

This occurs at the supply end of the commodity, raising its cost of production. This kind of inflation spreads from one industry to another as they are interdependent.

The main causes are:

1. **Higher wage rates:** when wages and salaries increase, the producers shift this burden to their consumers who eventually pay the increased price of the product. This increases the cost of living and labour demands higher wages to fight increased cost of living. It leads to a further increase in wages and salaries. This is termed as **wage spiral**.
2. **Higher profit margins:** when producers increase their profit margins, prices of commodities go up.
3. **Shortage of inputs:** a fall in the supply of inputs e.g. decline in procurement of coffee beans due to frost, increases the cost of production.
4. **Increased tax structure:** when sales tax, excise duty, VAT increases, the cost of production may go up and hence the price of the commodity.

So what causes inflation in India?

Demand factors leading to inflation

- Growth of population
- Rise in income and Employment
- Increasing pace of urbanisation: leads to increase in demand for luxury goods due to migration and **demonstration effect**.

Supply factors leading to cost push inflation

1. **Irregular agricultural supply:** due to dependence on monsoons or lack of irrigation.
2. **Agricultural price policy:** the government's policy of minimum support price raises price of agricultural goods, in a bid to help the farmers.
3. **Hoarding and Black marketing:** traders and big farmers hoard essential commodities like onions, oil, medicines and even food grains to create artificial scarcities. This raises the price of the commodities.
4. **Inadequate industrial production:** when the demand for manufactured goods cannot match the growing demand for the same, it pushes up the price of industrial goods.
5. **External factors:** rise in price of imports especially crude oil, machinery, raw materials raises the cost of production and eventually the price of goods.

Assignment:

1. Find India's annual inflation rates since 2000.
2. Plot a time series graph indicating the above research.
3. Analyse what may be the causes of sharp rises / fall in rates of inflation.

Basic Mathematical Concepts used in Economics

Mathematical equations and graphical illustrations play a significant role in economics. These tools are used to highlight relationships that exist between different economic variables. Through the use of mathematical language and graphs we can better understand economic theories. Hence, it is important to understand some of the basic concepts and terms that we shall be frequently using during the course next year.

Functions

The concept of functions demonstrates the dependence between variables. These functions show how one variable changes (dependent variable) due to some other variables (independent variables). For example there could be a function: $C = f(Y)$. This equation shows that consumption (C) is a function of income (Y). Here Y is the independent variable and C is the dependent variable. The symbol 'f' suggests that the two variables are related. However, the exact nature of the relationship is given by a more specific equation.

Functions can be of different types - linear or non-linear including cubic and quadratic function. However, mostly in our analysis we shall be using a linear function, which is represented mathematically as the equation of a straight line. It is typically written as:

$$y = a + bx$$

where y is the dependent variable, whose value depends on the value of the independent variable (x) and two constants - 'a' and 'b'.

Let us now understand the meaning of 'a'. 'a' is the value that y will take when x is equal to zero. In other words, on a graph paper, with x and y axes, 'a' represents the y-intercept.

'b' measures the slope of the linear function. Slope is a very important concept in Economics as it tells us how one variable changes in response to a change in another variable. For example in our linear equation, 'b' gives the rate of change of y per unit change in x. More formally, a slope measures the rate of change of the dependent variable when there is a per unit change in the independent variable. It may show for example how demand changes when price changes or how consumption changes when income changes or how sales grow as output changes.

Graphing functional relationships

Let us extend our discussion of the linear function by illustrating it graphically.

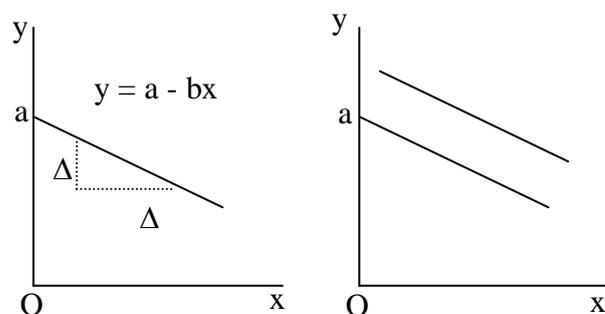
As shown in figure 1 above, the independent variable is measured along the x-axis whilst the dependent variable is measured along the y-axis. 'a' is the value of the y-intercept. This is the point where x is equal to zero. Since we have a linear function, the graph is a straight line. The steepness or flatness of the line is determined by its slope. The greater the slope of a line, the steeper it is. Graphically, the slope is calculated as

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{\text{rise}}{\text{run}}$$



In the diagram the rise is given by the change in y (Δy), whereas the run is given by the change in x (Δx).

In addition to the steepness, the slope also shows the direction of the linear curve. This is seen through the sign before the slope. In our linear equation $y = a + bx$, the slope b has a positive sign before it. This shows that the linear curve will be an upward sloping line which from left to right. It reflects a positive relationship between y and x . If our linear function is $y = a - bx$, then the slope b has a negative sign before it. This negative sign would mean that the linear curve will be a downward sloping line, which moves from left to right, as seen in figure 2 given below. It shows that y and x have a negative relationship – a positive rise is due to a negative run and vice versa.

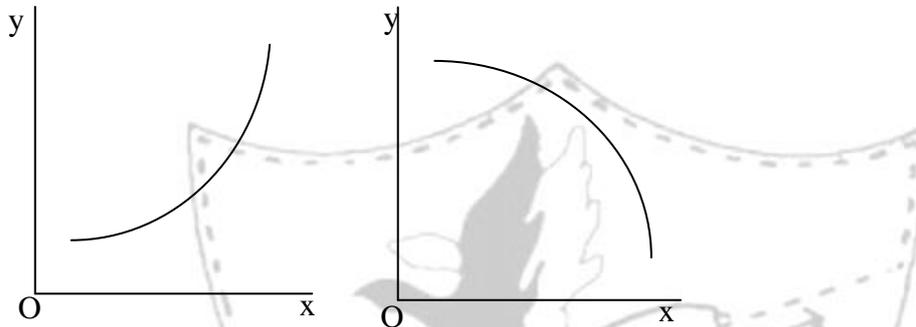


If two linear functions have the same slope they are parallel. This can be seen in figure 3.

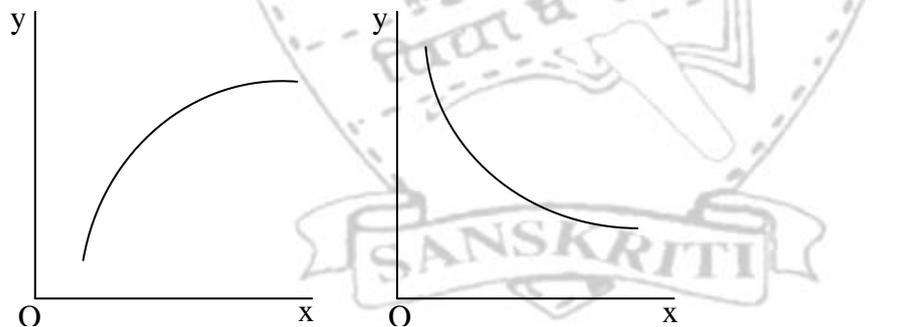
Non Linear Functions

In a linear function, the slope remains constant. So for example, if the slope is 2, it means that for every one unit rise in x , y will rise by 2 units. Similarly, if the slope is -2, it means that for every one unit rise in x , y will fall by 2 units.

Many a times the slope of a function is not constant. It may rise or fall. These situations are depicted below:



y is increasing at an increasing rate	y is decreasing at an increasing rate
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y is increasing at a decreasing rate	y is decreasing at a decreasing rate
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Project

Economics Research Paper

As part of your assessment for the final term, a research paper has to be submitted by **14th December 2016**. You may work individually or form a team with a partner. (This means each team has at most two students). You may choose to write a research paper on any one of the topics suggested in the list. The paper must have a title page, main content, and references. The paper should be typed in font size 11 (Book Antiqua) and should be 3- 5 pages, excluding tables, diagrams and references

Steps involved-

1. Students select a general topic for research and make a list of key words to help search for information, and get an overview of their topic.
2. Students become “research hounds” when they spend as much time as possible finding all the research available. This is probably the most time-consuming part of the research paper. Students refine their research subject and write a statement of purpose on their chosen topic.
3. Students brainstorm questions about their focused topic, begin to create an outline and start thinking about the first draft. They list more key words, identify the best sources to use, begin making note cards, and create a “working” thesis statement.
4. Students write the body of their paper from their outline and notes and then the introduction and conclusion.
5. Students spend time finalizing the citations and completing the Works Cited page.
6. Students now must carefully evaluate, revise, and proofread their paper. This is one of the most important parts of the process, and it’s also the one that students tend to do too quickly. Once finished with the laborious writing of the research paper, they must go through this part of the process more than once in order to submit their very best work.

It is recommended that the **first three steps must be completed during the summer break** so that there is enough time to prepare and submit a great research paper.

Suggested topics-

1. Impact of MGNREGA on rural- urban migration in India
2. Improved infrastructure due to construction of Delhi Metro and impact on Delhi’s per capita income
3. Link between poverty and crime in India
4. Correlation between family income and educational attainment
5. Link between taxes on tobacco and tobacco related deaths.
6. Fertilizer subsidies and agricultural output in India
7. Link between growth of IT sector and employment
8. Contribution of the IT sector to exports in India
9. A study on the banking sector in India as a result of globalization
10. Impact of the New Economic Policy (1991) on the Balance of Payments
11. Effectiveness of cash transfers versus direct subsidies

12. Green revolution and its impact on agricultural output and productivity
13. Trends in the dollar- rupee rate and Indian exports since New Economic Policy
14. Changes in interest rates in India and inflow of foreign exchange
15. Indian government's spending on education and health and GDP growth rate

Please Note-

1. Submissions after the deadline will not be accepted.
2. Intentional plagiarism will not fetch the student any marks.

The paper will carry 10 marks and will be assessed as follows-

Rubric for Grading the Research Paper

	Outstanding	Good	Fair	Unacceptable
<i>Visual Presentation</i>	Cover page with relevant info, including descriptive title. Section headings. Good graphics, with appropriate citations. Clean and professional looking.	Cover page. Sections headings. Graphics included. Professional looking.	Most relevant information present. Some section headings, captions, or graphics used. Looks like H.S. paper.	Dirty or ragged appearance. Missing titles, captions, headings, name of author. Not professional.
<i>Abstract</i>	Abstract is proper length. Highly informative, complete and easy to understand. Appropriate vocabulary is used. Abstract makes you want to read the paper.	Abstract is proper length. Informative, complete and understandable. Appropriate vocabulary is used.	Abstract is proper length. Somewhat informative and understandable.	Abstract is not the proper length. Not very informative or understandable.
<i>Structure</i>	Thesis is clear, easy to find, and appropriate to the assignment. Thesis is supported by the rest of the paper. Paper contains a "roadmap" for the reader. There is a logical flow to the topics/arguments. Conclusion follows clearly from the arguments presented.	Thesis is clear and appropriate. Thesis fairly well supported. Paper is fairly well organized. Conclusion follows from the rest of the paper.	Thesis is fairly clear. Inconsistent support for thesis. Paper weakly organized. Conclusion is acceptable.	Thesis unclear and/or inappropriate. Thesis not supported. Paper is not organized. Conclusion doesn't follow from the rest of the paper.
<i>Research</i>	The evidence comes from a wide variety of valid sources. The bibliography is complete and reflects appropriate sources. The evidence used reflects multiple views.	The evidence comes from valid sources. The bibliography is complete. The evidence used reflects multiple views.	Valid sources are inconsistently used. The bibliography is missing some pieces.	The evidence seldom comes from valid sources. The bibliography is missing significant information.
<i>Thinking</i>	Arguments are pertinent to the topic. Arguments are logical, supported with evidence. The key arguments have been made – no major points have been left out.	Arguments are pertinent to the topic. Arguments are fairly logical and reasonably supported. Most key arguments have been made.	Arguments are not consistently pertinent, logical, or supported. Few key arguments have been made.	Arguments not pertinent. Arguments rarely, if at all, logical and supported. Almost no key arguments have been made.
<i>Interest factor</i>	Language and style appropriate for intended audience. Paper presents well-developed analysis and synthesis. There is nuance, inference and subtlety to the paper. Main points are memorable. Reader is very engaged.	Language and style appropriate. Paper presents reasonable analysis and synthesis. There is a little nuance, inference and subtlety. Main points clear. Reader is engaged.	Language and style only fair. Less-developed analysis and synthesis. Nuance, inference and subtlety lacking. Main points present, not well made.	Language and style poor. Analysis and synthesis lacking. Main points not discernible.



ASSIGNMENT: 3
Economic Reforms since 1990

Max Marks: 15

- 1 Define privatisation. (1)

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2. Discuss the fiscal policy reforms undertaken by the government in 1991. (3)

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3. The table given below shows the GDP growth rate at 1993-94 prices. Draw a time series graph based on the data and interpret the same. (3)

Year	GDP growth rate (%)
1991-92	1.3
1992-93	5.1
1993-94	5.9
1994-95	7.3
1996-97	7.8
1997-98	4.8
1998-99	6.5
2000-01	4.4
2001-02	5.8
2002-03	4.0



ASSIGNMENT: 4
Poverty

Max Marks: 15

1. Name two indices used to estimate poverty. (1)

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2. How does the government encourage self-employment? (1)

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3. Why are tribals considered part of the rural poor in India? (1)

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4. Study the table below and answer the questions

Year	Poverty rate (%)
1977-78	51.3
1983	45.65
1987	38.5
1993-94	35.1
1999-2000	26.1
2004-05	22.15

a. In spite of decline in poverty rate over the years the number of poor in India has risen. Why? (1)

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ASSIGNMENT: 5
Human capital Formation

Max Marks: 15

1. What is Human Capital? (1)

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2. What are the different sources of human capital? (1)

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3. Mention 2 core areas for expenditure on health in India. (1)

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4. What do you understand by primary dropout rate? (1)

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5. Explain with example how a well-developed information system facilitates human capital formation. (3)

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6. How is migration a source of human capital? (4)

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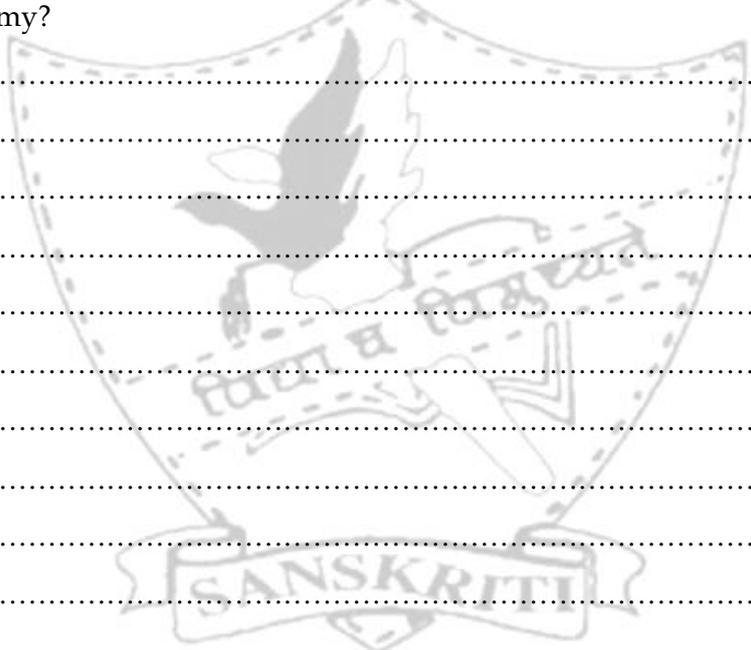
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7. The Government has passed "the right to education" bill. What does this mean for the economy? (4)



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ASSIGNMENT: 7
Employment - Growth, Informalisation and other issues

Max Marks: 15

1. What is jobless growth? When did India experience jobless growth? (2)

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2. Categorise the following into formal and informal sector. (2)

- a. Domestic help
- b. Bus Driver in Sanskriti School
- c. Shopkeeper selling export surplus clothing in Janpath.
- d. Ticket checker in Indian Railways

3. Despite economic growth, India is still plagued with high levels of unemployment. Why? (4)

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4. Give reasons to explain the urban-rural disparity and male-female disparity in employment in our country. (4)

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5. Read the following passage and answer the following questions

(4)

Informalisation in Ahmedabad

Ahmedabad is a prosperous city with its wealth based on the produce of more than 60 textile mills with a labour force of 1,50,000 workers employed in them. These workers had, over the course of the century, acquired a certain degree of income security. They had secure jobs with a living wage; they were covered by social security schemes protecting their health and old age. They had a strong trade union which not only represented them in disputes but also ran activities for the welfare of workers and their families. In the early 1980s, textile mills all over the country began to close down. In some places, such as Mumbai, the mills closed rapidly. In Ahmedabad, the process of closure was long drawn out and spread over 10 years. Over this period, approximately over 80,000 permanent workers and over 50,000 non-permanent workers lost their jobs and were driven to the informal sector. The city experienced an economic recession and public disturbances, especially communal riots. A whole class of workers was thrown back from the middle class into the informal sector, into poverty. There was widespread alcoholism and suicides, children were withdrawn from school and sent to work.



Change in the balance of power in a house: an unemployed mill worker peeling garlic whereas his wife has a new job of beedi rolling.

Source: Renana Jhabvala, Ratna M. Sudarshan and Jeemol Unni (Ed.) *Informal Economy at Centre Stage: New Structures of Employment*, Sage Publications, New Delhi, 2003, pp.265.

a. What led to the closures of textile mills in 1980s?

.....

b. What kind of unemployment did this lead to?

.....

c. What is 'recession'?

.....

d. What do you understand by the term 'informal sector'?

.....



ASSIGNMENT: 9
Environment and Sustainable Development

Max Marks: 15

1. What is environment? (1)

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2. Name 2 native Indian plants that have medicinal value and needs to be encouraged. (1)

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3. What is the function of CPCB? (1)

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4. What is 'clean technology'? (1)

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5. Why should mini hydel plants be encouraged as compared to big dams? (3)

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ASSIGNMENT: 10
Collection and Organisation of data

Max Marks: 15

1. A research organization collects data on driving habits of urban Indians which is used by the traffic police. What kind of data is it for the organization and the police? (1)

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2. We have the following information on the monthly expenditure on food (in rupees) for 30 households in a locality (3)

115	159	196	205	212	223
256	271	310	129	335	169
184	234	245	241	265	298
144	135	172	173	229	243
220	238	278	243	220	238

- a) Obtain a frequency distribution using the following class intervals
100-150, 150-200, 200-250, 250-300, 300-350
- b) What percentage of households spends less than Rs 250 per month and what percentage of households spends more than Rs 200 per month?

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3. Convert the following inclusive series into an exclusive series (3)

Marks	10 - 14	15-19	20 - 24	25 - 29	30 - 34
No. of students	4	5	8	5	4

Marks					
No. of students					

.....

4. In a survey it was found that 50 families bought milk in the following quantities in a particular month. Classify the following data in a discrete series, continuous series and 'less than' and 'more than' cumulative frequency series. (8)

19	25	12	21	20
11	7	10	11	12
20	16	22	16	17
10	23	19	11	19
25	22	5	19	17
11	11	21	17	25
8	5	10	20	23
16	22	22	23	12
16	11	16	22	17
23	22	10	7	21

(Attach an additional sheet of paper)


ASSIGNMENT: 11
Presentation of data
Max Marks: 45
(You may use a calculator for the calculations)

1. State whether true or false. Also correct the incorrect statement: (3)
 - a. A histogram is a graphic representation of the frequency distribution of a continuous variable.
.....
 - b. Graphic presentation of a cumulative frequency distribution can be done through a frequency polygon.
.....
 - c. The area under the frequency curve is the same as covered by a histogram.
.....
 - d. In percentage bar diagram, all bars are of equal height.
.....

2. Draw a bar diagram to represent the following figures relating to export of computer software. (3)

Years	1997-98	1998-99	1999-2000	2000-01	2001-02
Export (Rs crores)	6,500	10,940	17,150	28,350	36,500

(Source: Economic Survey, 2002-03)

3. Draw a suitable diagram to represent the following information. (4)

Statement of crimes in running passenger trains

Year	Murder	Robbery	Loot	Total
1998	108	82	321	511
1999	131	115	386	632
2000	97	144	352	593
2001	102	70	285	457
2002	75	68	245	388



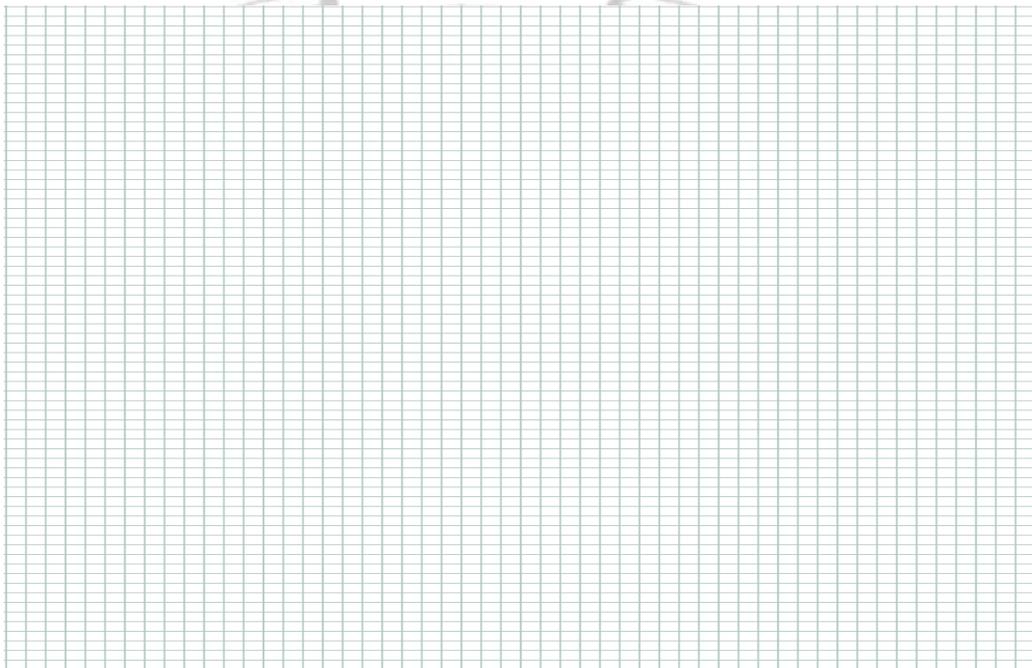
4. Represent the following data in a pie diagram. (4)

Items of Expenditure	Family A	%	Degrees
Food	400		
Clothing	250		
Rent	150		
Education	40		
Miscellaneous	160		
Total	800	100	360°

5. Draw a 'less than' ogive for the following data:

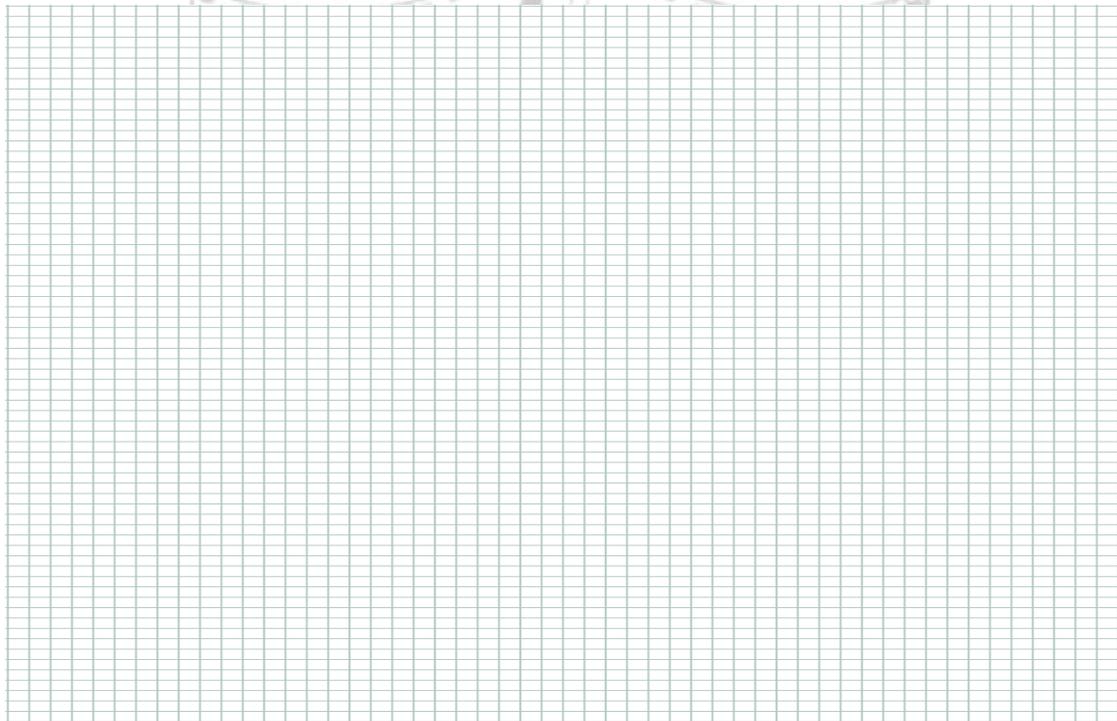
(4)

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students	4	4	7	10	12	8	5



5. Construct a histogram from the following distribution of total marks obtained by 65 students of a school in a Board Examination. (4)

Mid points	No. of students	
150	8	
160	10	
170	25	
180	12	
190	7	
200	3	



6. Categorise the following classification as qualitative, quantitative, geographical and chronological. Give reasons. (5)

a. Sales of a firm (2006-08)

Year	2006	2007	2008
Sales (Rs)	80	90	95

b. No. of firms producing bicycles

Place	Punjab	Haryana	UP
No. of firms	30	20	25

.....

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c. Annual profit of SSIs

Annual profit	0-10	10-20	20-30
No. of firms	5	150	1500

d. Literacy rate in Bihar

Sex	Rural	Urban	Total
Male	57.70	80.80	60.32
Female	30.03	63.30	33.57

e. Yearly sales of a teashop

Year	1995	1996	1997	1998	1999
Sales (Rs)	79.2	81.3	82.4	80.5	100.2

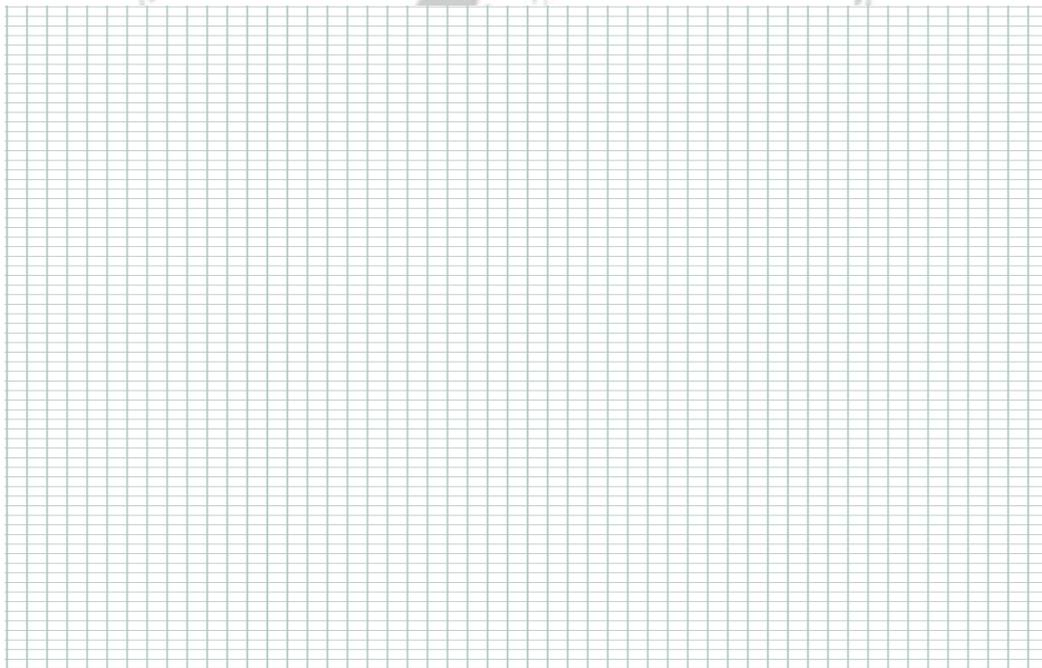
7. Of the 1,125 students studying in a school during 2003-2004, 720 were Hindus, 628 were boys and 440 were science students. The number of Hindu boys was 392 and the number of Hindu boys studying science was 205 while the number of boys studying science was 262. The number of science students among the non-Hindus was 148. Compile this information in a table, obtaining relevant information wherever not given. The information was provided in ABC research paper. (6)

8. Present the following figures for export in tea on a graph. (6)

Year	1997	1998	1999	2000	2001	2002
Assam Tea	250	492	584	800	850	860
Darjeeling Tea	300	596	782	900	762	640

What can you infer about the export of the two varieties of tea?

- a.
-
- b.
-
- c.
-



9. Represent the following data with the help of a histogram. What kind of curve does the data reflect? (6)

Daily Wages (Rs)	10-15	15-20	20-25	25-30	30-40	40-60	60-80
No. of workers	7	19	28	15	12	12	8

(Please attach a graph to answer this question)



ASSIGNMENT 12

Measures of Central Tendency-Arithmetic Mean, Median and Mode

Max Marks: 50

(You may use a calculator)

1.

Test Scores	Frequency
91-100	
81-90	
71-80	
61-70	
51-60	

 Test scores for a class of 20 students are as follows: (1)
93, 84, 97, 98, 100, 78, 86, 100, 85, 92, 72, 55, 91, 90, 75,
94, 83, 60, 81, 95
- a) Complete the table shown at the left.
- b) Find the modal interval.

2. The following table gives the daily income of ten workers in a factory.
Find the arithmetic mean. (2)

Workers	A	B	C	D	E	F	G	H	I	J
Daily Income (in Rs)	120	150	180	200	250	300	220	350	370	260

4. Calculate median and upper quartile for the following data showing monthly wages of 10 workers: (3)

120, 150, 170, 180, 181, 187, 190, 192, 200, 210

Median

Upper quartile

4. Comment whether the following statements are true or false. Correct the incorrect statement. (4)

(i) The sum of deviation of items from mean is 1.

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(ii) In order to find the Median, one needs to first order the data values from the least to the highest.

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(iii) Arithmetic mean is a positional average.

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(iv) Arithmetic mean is based on all observations.

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(v) Arithmetic mean can be located graphically with the help of ogives.

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5. Calculate the fourth decile from the following data: (4)

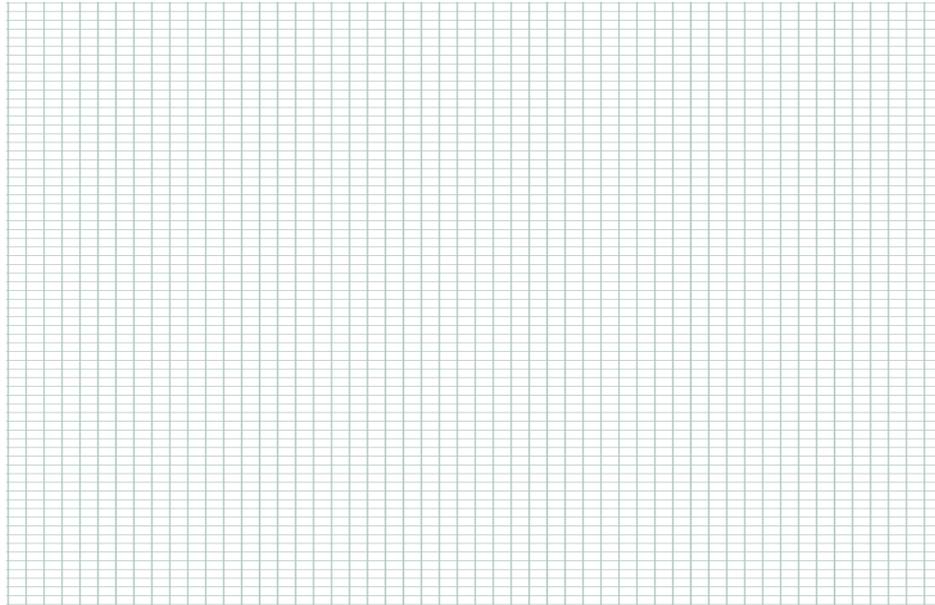
Wages (in Rs)	50-60	60-70	70-80	80-90	90-100	100-110	110-120
No. of workers	8	10	16	14	10	5	2

6. The arithmetic mean of the data given below is 28, find the missing frequency using direct method. (5)

Profit	0-10	10-20	20-30	30-40	40-50	50-60
No. of shops	12	18	27	-	17	6

7. Indicate mode on a graph for the following distribution: (5)

Sales (Rs thousand)	53-56	56-59	59-62	62-65	65-68	68-71
Number of days	5	7	9	25	20	18



8. Following table gives the distribution of companies according to the size of capital. Using step deviation method, find out the mean size of the capital of a company. (6)

Capital (in lacs)	Less than 5	Less than 10	Less than 15	Less than 20	Less than 25	Less than 30
No. of companies	20	27	29	38	48	53

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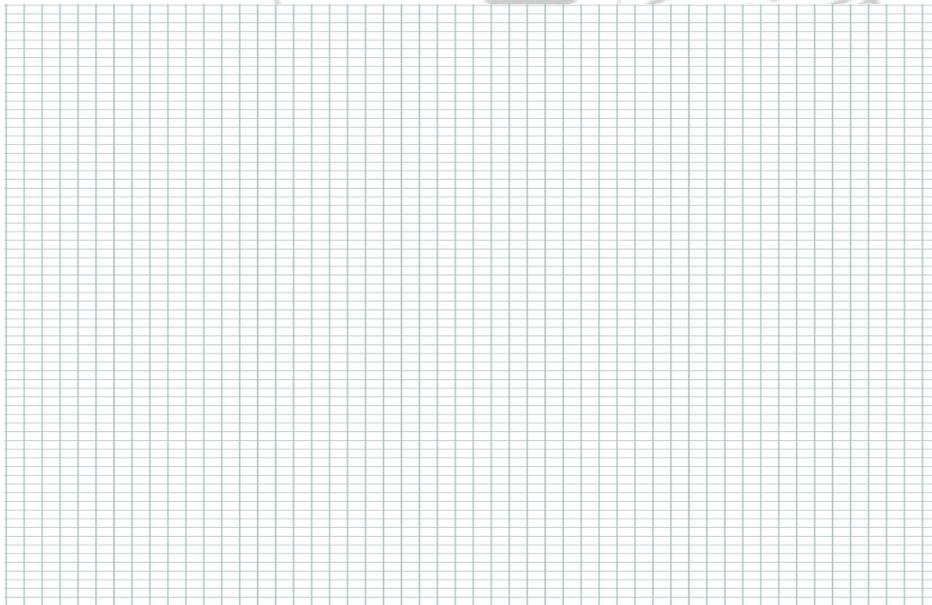
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9. The following series relates to the daily income of workers employed in a firm. Compute the maximum income earned by the lowest 25% workers. (6)

Daily income(Rs)	10-14	15-19	20-24	25-29	30-34	35-39
No. of workers	5	10	15	20	10	5

10. Locate median graphically: (6)

Marks	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
No. of students	4	6	10	10	25	22	18	5



11. The following table gives production yield in kg. per hectare of wheat of 150 farms in a village. Calculate mode production yield using grouping method. (8)

Yield	50-53	53-56	56-59	59-62	62-65	65-68	68-71
No. of farms	5	9	16	30	40	32	18

(Please attach a page to answer this question)



ASSIGNMENT: 13
Measures of Dispersion

Max Marks: 30

1. In a town, 25% of the persons earned more than Rs45, 000 whereas 75% earned more than Rs18000. Calculate the absolute and relative values of dispersion. (3)

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2. For two firms A and B belonging to the same industry, the following data is given: (5)

	Firm A	Firm B
No. of wage earners	586	648
Average monthly wages (Rs)	52.5	47.5
Standard deviation	10	11

- a) Which firm A or B pays larger amount as monthly wages?
b) Which firm shows greater variability in the wage rate?

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3. From the following data calculate variance: (7)

Marks	Number of Students (f)	Mid values (X)	d	d'	f .d'	f.d' ²
0 - 20	2					
20 - 40	4					
40 - 60	6					
60 - 80	1					
80 - 100	7					
	$\Sigma f =$				$\Sigma f .d' =$	

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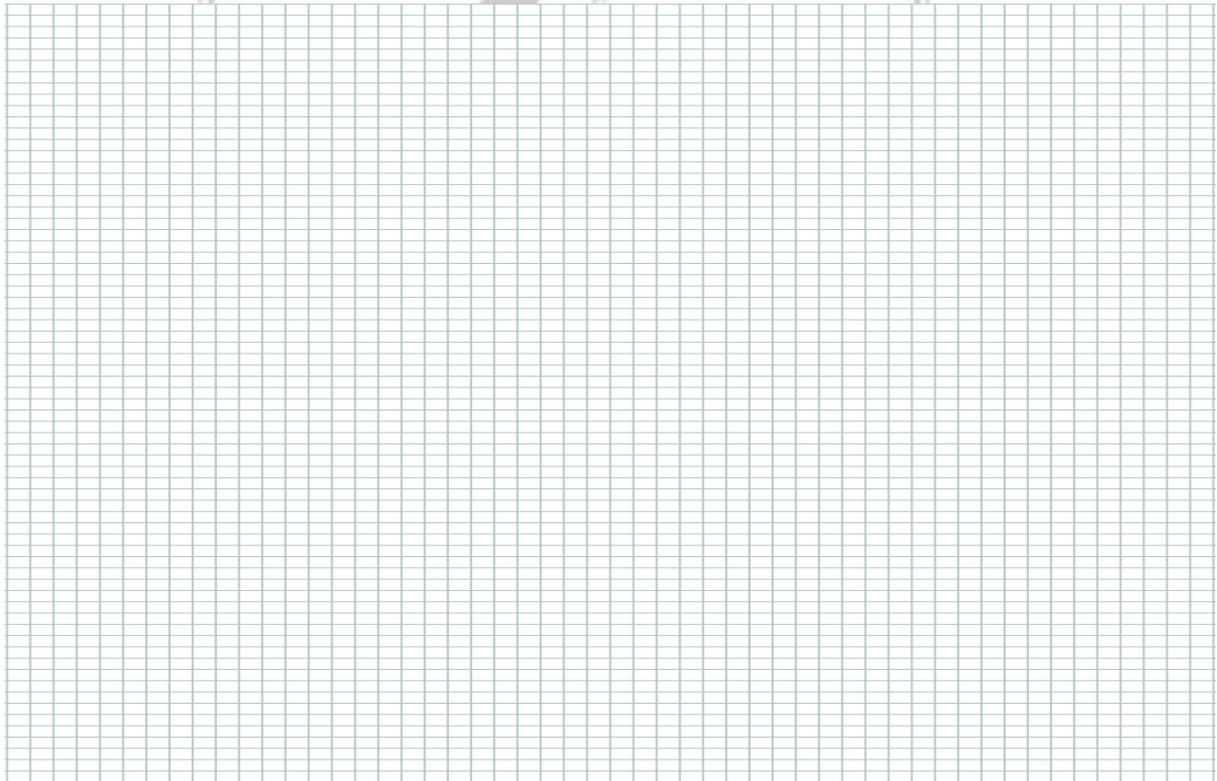
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4. Draw Lorenz curves for rural and urban households and compare the degree of inequality in the two districts: (8)

Income(Rs)	Number of households								
	Urban	Rural							
0 - 1000	100	500							
1000 - 5000	500	800							
5000 - 10000	700	500							
10000 - 20000	500	150							
20000 - 40000	200	50							



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5. Find the coefficient of mean deviation from mean from the following data. (7)

CI	0 -10	10 -20	20 -30	30 - 40	40 -50
Frequency	2	4	6	4	2





ASSIGNMENT: 14
Measures of Correlation
(You may use a calculator)

Max Marks: 35

1. What does the value of $r = 0$ imply? (1)

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2. Can coefficient of correlation be 1.98? Why? (1)

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3. Draw a scatter diagram and indicate the nature of correlation. (3)

X	10	20	30	40	50	60	70	80
Y	5	10	15	20	25	30	35	40



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4. Seven methods of teaching Economics in two universities were ranked by students of two universities. Calculate Rank difference correlation. What kind of correlation does it indicate? (6)

Teaching methods	Rank of A's students	Rank of B's students	D =	D ²
I	2	1		
II	1	3		
III	5	2		
IV	3	4		
V	4	7		
VI	7	5		
VII	6	6		
				$\sum D^2 =$

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5. Calculate Karl Pearson's coefficient of correlation between the index of industrial production and the number of unemployed in an economy. How does industrial production affect the level of unemployment? The assumed mean for IIP is 105 and 120 for number unemployed. (9)

IIP	Unemployed	dx	dy	dx ²	dy ²	dx dy
100	120					
102	134					
104	150					
107	115					
105	110					
112	140					
103	142					
99	100					

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6. Calculate coefficient of rank correlation between the marks of Indian Economics and Statistics, as indicated by 8 answer books of each of the two examiners. (6)

Marks in Indian Eco	Marks in Statistics	R ₁	R ₂	D =	D ²
15	16				
10	14				
20	10				
28	12				
12	11				
10	15				
16	18				
18	12				
					∑ D ² =

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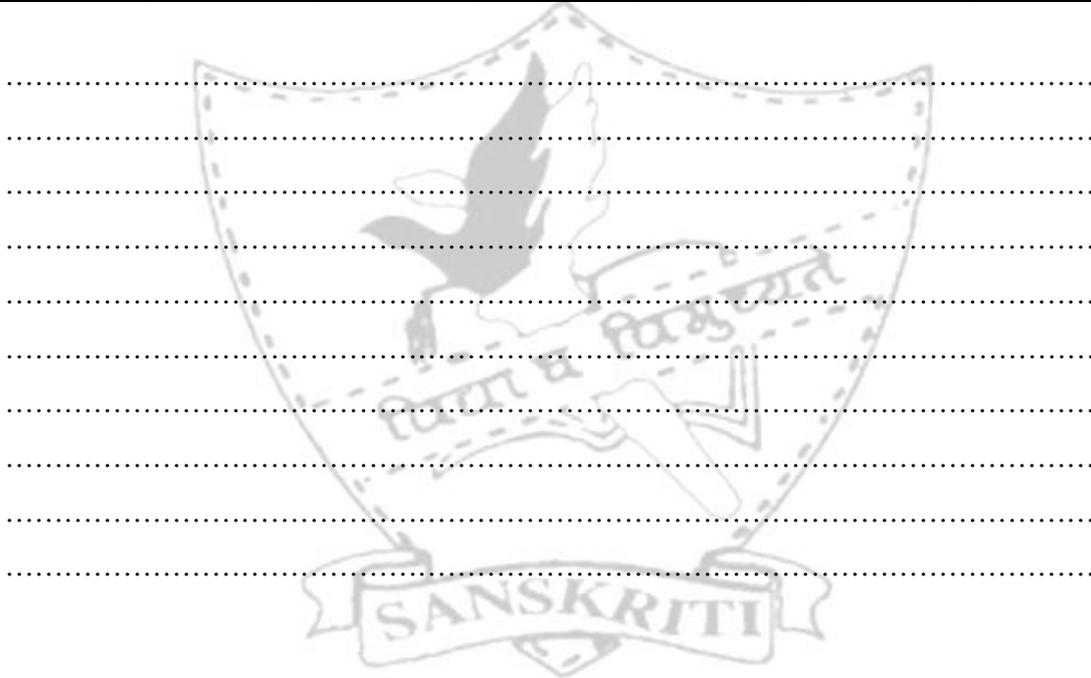
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7. Calculate Karl Pearson's coefficient of correlation between X and Y and comment on their relationship. (9)

X	Y	$d_x =$	$d_y =$	dx^2	dy^2	$d_x d_y$
1	2					
3	6					
4	8					
5	10					
7	14					
8	16					
		$\sum d_x =$	$\sum d_y =$	$\sum dx^2 =$	$\sum dy^2 =$	$\sum d_x d_y =$





ASSIGNMENT: 17
Index Numbers

Max Marks: 15

(You may use a calculator)

1. During a certain period, the cost of living index number goes up from 110 to 200 and the salary of the worker is also raised from Rs 325 to Rs 500. Does the worker really gain? Why? (2)

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2. Using the simple aggregate method, calculate the price index number for 2002 with base as 1995 from the following data: (3)

Commodities	Price in 1995	Price in 2002
A	100	140
B	80	120
C	160	180
D	220	240
E	40	40

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3. Construct index number by simple average of price relatives method for 2007 taking the price of 2006 as base from the data given below: (3)

Commodity	A	B	C	D	E
Prices in 2006	30	40	60	80	10
Prices in 2007	45	50	72	88	13
Price relative					

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4. Calculate price index number by weighted average of price relative method: (3)

Commodities	P ₀	P ₁	W		
A	6	8	40		
B	3	3.2	80		
C	2	3	20		

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- 5 From the following data construct price indices using Paasche's method for the year 2004 with 1996 as the base year: (4)

Commodities	Price in 1996	Price in 2004	Exp 1996	Exp 2004		
A	100	140	4000	4200		
B	80	120	1280	2400		
C	160	180	3200	7200		
D	220	240	2200	1920		
E	40	40	1400	1400		

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