

**Exam Code: 223103**

**Paper Code: 3258-R**

**Programme: Master of Arts (Economics)**

**Semester - III**

**Course Title: Theory of Statistics**

**Course Code: MECL-3174 (Opt. - III)**

**Time: 3 Hours**

**Max. Marks: 80**

**Note:** - Attempt five questions in all, selecting at least one question from each section. The fifth question may be attempted from any Section. Each question carries 16 marks.

### **SECTION – A**

1. (a) State and prove Chebychev's inequality.  
(b) Drive two main properties of Gamma Distribution.
2. Define the Normal distribution and derive its main properties.

### **SECTION – B**

3. (a) Explain the main properties of a good estimator.  
(b) Define maximum likelihood estimators and discuss its properties.
4. What is F-distribution and derive its main properties.

### **SECTION – C**

5. (a) Discuss the procedure of testing a statistical hypothesis.

(b) Intelligence test on two groups of boys and girls gave the following results:

	Mean	Standard Deviation	Number
Girls	80	15	150
Boys	75	20	250

Is there a significant difference in the mean score obtained by boys and girls at 5 % level of significance?

6. For a 2 x 2 contingencies table :

a	b
c	d

Prove that:

$$\text{Chi-square} = \frac{N(ad - bc)}{(a + b)(a + c)(c + d)(b + d)}$$

### SECTION – D

- Explain briefly the various types of non-parametric tests and specify the situation in which they are applicable.
- A random sample of three models of scooter were tested for the petrol mileage (the number of km per litre). Use Kruskal-Wallis test at 5% level of significance to determine if the average mileage of the three models is same.

Model A :	60	54	76	48	66	52	62	56
Model B :	62	58	52	48	70			
Model C :	42	64	36	65	42	60	82	

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**Paper Code: 3255**

**Programme: Master of Arts (Economics)**  
**Semester-III**

**Course Title: Economics of Development**

**Course Code: MECL-3171** ✓

**Time Allowed: 3 Hours**

**Max Marks: 80**

**Candidates are required to attempt five questions, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries equal marks i.e. 16 marks each.**

**Section-I**

1. How Harrods model leads to Knife edge equilibrium?  
16
2. Explain different development indices propounded by different economists.  
16

**Section -II**

3. How social dualism is different from technological dualism? How they lead to economic growth. 16
4. Explain in detail Myrdal's theory of circular causation.  
16

### Section -III

5. These are Indivisibilities that need a huge fund at a time. Comment. 16
6. Agriculture is the basis of an economy. Comment. How it leads to economic development? 16

### Section -IV

7. What are the sources of Capital Formation? How is it related to Economic development of a country? 16
8. What do you mean by MNCs? What role do they play in development of home country? 16

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**(20)**

**Paper Code: 3256**

**Programme: Master of Arts (Economics)**  
**Semester-III**

**Course Title: International Economics-I**

**Course Code: MECL-3172** ✓

**Time Allowed: 3 Hours**

**Max Marks: 80**

**Note:** Candidates are required to attempt five questions, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

**Section-A**

1. Explain clearly Heckscher-Ohlin theory of international trade.
2. Explain Haberler's restatement of comparative cost theory of opportunity cost.

**Section-B**

3. Explain clearly the concept of intra-industry trade. Explain the causes and significance of the intra-industry trade.

4. What is the effect of changes in factor endowment, taste and technology on international trade?

#### **Section-C**

5. Explain different concept related to terms of trade. And explain factors that influence term of trade.
6. 'Trade is an engine of economic growth'. Explain.

#### **Section-D**

7. Analyse the effects of tariff on national income, TOT, output, employment, BOP in partial equilibrium system.
8. Explain the concept of effective rate of Protection.



**Exam Code: 223103**

**Paper Code: 3257**

**Programme: Master of Arts (Economics) Semester: III**

**Course Title: Indian Economy**

**Course Code: MECL-3173** ✓

**Time Allowed: 3 Hours**

**Maximum Marks: 80**

**Note:** Attempt five questions, selecting one question from each section. The fifth question may be attempted from any section. All questions carry 16 marks.

**SECTION-A**

1. Discuss the interstate variations in national income. Also give various factors responsible for interstate variations.
2. Discuss the main targets of 11<sup>th</sup> five year plan in India. Critical discuss its performance.

**SECTION-B**

3. Discuss in detail the main features of new higher education policy of India. Also explain measure adopted to improve the standard of research in higher education institutions in India.
4. Discuss the state of poverty in India? Also discuss various initiatives by government to solve the problem of poverty.

**SECTION-C**

5. Explain the trends in productivity of major food grains in India. Explain main factors responsible for the low productivity.
6. Give the need of agriculture price policy in India. Critically evaluate the performance of agricultural price policy in India.

**SECTION-D**

7. Critically explain the role of WTO in the development of Indian economy.
8. Discuss the role of public private partnership initiative to for the growth of Indian economy.

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**Paper Code: 3258**

**Programme: Master of Arts (Economics)**  
**Semester-III**

**Course Title: Theory of Statistics**

**Course Code: MECL-3174 (OPT-III)** ✓

**Time Allowed: 3 Hours**

**Max Marks: 80**

**Attempt FIVE questions, selecting at least ONE question from each section. The fifth question may be attempted from any section. Each question Carries 16 marks.**

**Section-I**

1. (a) Explain Axiomatic definition of Probability.  
(b) Derive the two main properties of Beta distribution.
2. Define the Poisson distribution and derive its main properties.

**Section-II**

3. (a) Discuss the main properties of point estimator.  
(b) Derive the two main properties of 't' distribution.
4. Define chi-square distribution and derive its main properties.



### Section-III

5. (a) Write a brief note on the procedural steps involved in hypothesis testing.

(b) The following information relates to wages of workers of two factories A and B. Test whether there is any significant difference between their mean wages at 5% level of significance.

	Factory A	Factory B
Mean Wages (Rs.) :	100	105
Standard Deviation:	16	24
No. of Workers :	800	1600

6. (a) Two random samples were drawn from two normal populations and their values are:

**Sample A :** 66, 67, 75, 76, 82, 84, 88, 90, 92

**Sample B :** 64, 66, 74, 78, 82, 85, 87, 92, 93, 95, 97

Test whether the two populations have the same variance at 5% level of significance.

(Table value of 'F' at 5% level of significance for  $V_1=10, V_2=8$  is 3.35)

- (b) The table given below shows the data during and epidemic of cholera:

	Attacked	Not attacked	Total
Inoculated	31	469	500
Not Inoculated	185	1315	1500
Total	216	1784	2000

Use Chi-square test to determine whether inoculation is effective in preventing the attack of cholera.

(The table value of Chi-square for 1 degree of freedom at 5 % level of significance = 3.84)

#### Section-IV

7. (a) What are the non-parametric tests? In what ways they are different from parametric tests?  
 (b) Use the sign test in the data given below to determine whether there is a statistical increase in the values produced by treatment B over those produced by treatment A at 5% level of significance:

Subject	Treatment A	Treatment B
1	46	52
2	41	43
3	37	37
4	32	32
5	28	31
6	43	39
7	42	44
8	51	53
9	28	26
10	27	31

8. (a) Explain the Mann-Whitney U test with the help of an example.

(b) Given below are the samples relating to number of minutes the patient has to wait in the clinics of three Doctors:

Doctor A	44	39	38	33	47	45	-	-
Doctor B	34	45	43	39	42	40	46	-
Doctor C	46	34	43	36	30	42	41	44

Using Kruskal-Wallis test, verify at 5 percent level of significance to verify the null hypothesis that all the three Doctors are equal in making the patients wait for the average time.

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**Paper Code: 3259**

**Programme: Master of Arts (Economics)**  
**Semester-III**

**Course Title: Industrial Economics**

**Course Code: MECL-3175 (OPT-V)** ✓

**Time Allowed: 3 Hours**

**Max Marks: 80**

**Attempt FIVE questions, selecting at least ONE question from each section, The fifth question may be attempted from any Unit. Each question carries 16 marks.**

**Section-A**

1. Discuss in detail about the external economies of scale.
2. Explain the Weber's Theory of industrial location in detail. How Sargent Florence's theory is different from it?

**Section-B**

3. What are mergers and acquisitions? How do these comprise of an important aspect of market conduct?
4. What are the important methods of evaluating investment expenditure? Discuss.

**Section-C**

5. What is globalisation? What is the impact of globalization on industrial labour?
6. What are the issues in industrial proliferation and environmental preservation?

**Section-D**

7. What are Net Present Value (NPV) and Internal Rate of Return (IRR) criterion of project evaluation. Compare the ranking sequence of projects using these two techniques.
8. Describe the structure of Indian industrial labour force with evidence from Indian context.