

Exam Code: 509603

Paper Code: 3252

Programme: Master of Science (Economics) Semester III

Course Code: MECL-3171 ✓

Course Title : Microeconomic Theory-II

Time: 3 Hours

Max. Marks: 70

Note: Attempt five questions, selecting one from each section. The fifth question can be attempted from any section. Each question carries 14 marks.

Section-A

- Q1. Explain the marginal productivity theory of distribution.
- Q2. Define and explain Euler theorem

Section-B

- Q3. What is dominant strategies? And explain Nash equilibrium.
- Q4. Explain the role of costs and profitability in pricing decisions.

Section-C

- Q5. Explain the pareto criteria and its marginal conditions.
- Q6. Define and explain Arrow impossible theorem.

Section-D

- Q7. Explain existence and uniqueness of equilibrium.
- Q8. Define and explain partial and general equilibrium with examples.

Exam Code: 509603

Paper Code: 3253

Programme: Master of Science (Economics) Semester III

Course Title: Macroeconomic Theory-II

Course Code: MECL-3172

Time: 3 Hours

Max. Marks: 70

Note: Attempt five questions in all, selecting atleast one from each section. The fifth question can be attempted from any section. Each question carries 14 marks.

SECTION – A

1. Explain the working of the IS–LM Model in a closed economy.
2. Explain the relative effectiveness of fiscal and monetary policies under the IS–LM model. Illustrate your answer with suitable diagrams.

SECTION – B

3. Examine the Structuralists' theory of inflation. How does it differ from the Monetarist approach?
4. Discuss Adaptive and Rational Expectations in the context of the Phillips curve. What are the policy implications of the Natural Rate Hypothesis?

SECTION – C

5. Describe the lags in the investment function and their implications for macroeconomic stability.
6. Discuss the Kaldor model of trade cycles. How it provides an explanation of cyclical fluctuations?

SECTION – D

7. Explain in detail the transmission mechanism of monetary policy in an economy.
8. Discuss the main features of New Classical Economics. Explain the real business cycle theory.

Exam Code: 509603

Paper Code: 3254

Programme: Master of Science (Economics) Semester III

Course Title: Economics of Development

Course Code: MECL-3173

Time: 3 Hours

Max. Marks: 70

Note: Attempt five questions in all, selecting atleast one from each section. The fifth question can be attempted from any section. Each question carries 14 marks.

Section-A

1. What are the Inadequacies in Income-based Measures of development? Explain the construction of HDI.
2. Briefly explain Kuznets's Hypothesis of income distribution.

Section-B

3. Critically explain Todaro's Model of rural-urban migration.
4. Explain the various stages of economic development as given by Rostow.

Section-C

5. Explain the Balanced Growth Doctrine of economic development given by Prof. Nurkse.
6. Discuss the agricultural strategy for economic development.

Section-D

7. Briefly analyze the foreign aid to India. Give its impact on the Indian economy.
8. What do you understand by export promotion? Give arguments for and against export promotion strategy of growth in the context of an underdeveloped economy.

Exam Code: 509603

Paper Code: 3255 - R

Programme: Master of Science (Economics) Semester – III

Course Title: Theory of Statistics

Course Code: MECL-3174 ✓

Time Allowed: 3 Hours

Max. Marks: 70

Note: Attempt five questions in all, selecting at least one from each section. Fifth question may be attempted from any section. Each question carries 14 marks.

Section-A

1. a) Explain the properties of Axiomatic Probability.
b) Discuss the addition theorem of probability.
2. a) A bag contains 5 white and 3 red balls. Two balls are drawn at random. What is the probability that
i) both are red balls ii) one is white and the other is red
b) A factory has two machines, machine I produces 30 % of the output and machine II produces 70% of the output. Further, 5% of the items produced by machine I were defective and only 1% produced by machine II were defective. If a defective item is drawn at random, what is the probability that it was produced by machine I?

Section-B

3. a) Explain Chebyshev's inequality.
b) Discuss the properties of the moment generating function
4. Evaluate the properties of the Normal distribution

Section-C

5. Discuss the properties of maximum likelihood estimators
6. Derive the properties of the t-distribution

Section-D

7. a) Seven girls are chosen at random from a school and their heights are found to be in inches: 59, 60, 63, 65, 64, 61, 58
Test whether the mean height of girls of the school is 62 inches
b) The theory predicts that the proportion of beans in the four groups A, B, C and D should be in the ratio of 9:3:3:1. In an experiment among 1600 beans, the number in the four groups were 882, 313, 287 and 118. Does the experiment support the theory?
8. To test the significance of the variation of the retail prices of a commodity in three principal cities: Bombay, Kolkata and Delhi. Four shops were chosen at random in each city and prices observed were as follows

Bombay	16	8	12	14
Kolkata	14	10	10	6
Delhi	4	10	8	8

Do the data indicate that the prices in the three cities differ significantly?

Exam Code: 509603

Paper Code: 3255

Programme: Master of Science (Economics) Semester – III

Course Title: Theory of Statistics

Course Code: MECL-3174

Time Allowed: 3 Hours

Max. Marks: 70

Note: Attempt five questions in all, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries 14 marks.

Section - A

1. a) Explain the properties of Axiomatic Probability.
b) Discuss the multiplication theorem of probability.
2. a) A person can hit the target in 3 out of 4 shots and B can hit the target in 2 out of 3 shots. What is the probability that the target will be hit?
b) There are two identical boxes containing 4 white and 3 red balls, white and 7 red balls, respectively. A box is chosen at random and a ball is drawn from it. If the ball drawn is white, what is the probability that it is from the first box?

Section - B

3. a) Explain the properties of the moment generating function.
b) Derive the properties of the Binomial distribution.
4. Derive the properties of the Gamma Distribution.

Section - C

5. Derive the properties of maximum likelihood estimators.
6. Derive the properties of the chi-square distribution.

Section - D

7. a) An intelligence test of two groups of boys and girls gave the following results

	Mean	Standard deviation	Number
Girls	62	3	80
Boys	60	4	100

Is there a significant difference in the mean score obtained by boys and girls?

b) A research investigator selected a random sample of 200 voters to find which political party they would vote for in the municipal elections. The results were obtained as follows

Political party	A	B	C	D
No. of Voters	40	90	50	20

8. a) A coin is tossed 10000 times and heads turn up 5195 times. Would you consider that coin to be unbiased?

b) Six girls are chosen at random from a school and their weights are found to be in kgs. as follows:

48, 55, 50, 53, 49, 52

Test whether the mean weight of girls in the school is 51 kgs.

Exam Code: 509603

Paper Code: 3256

Programme: Master of Science (Economics) Semester – III

Course Title: Data Science for Economists

Course Code: MECM-3175 (Opt-IX)

Time Allowed: 3 Hours

Max. Marks: 40

Note: Attempt five questions in all, selecting at least one from each section. The fifth question may be attempted from any section. Each question carries 8 marks.

Section – A

Q1. Define data analysis and discuss its importance in economic research. Explain how primary and secondary data differ in terms of collection methods and usage.

Q2. Discuss the principles of data visualization. Explain how line charts and pie charts enhance understanding and interpretation of economic data.

Section – B

Q3. What is data communication? Explain the main components and transmission modes used in modern data communication systems.

Q4. Discuss the role of the Internet in data communication and information sharing. Describe common online security threats and explain mechanisms used to safeguard data integrity.

Section – C

Q5. What do you understand by Big Data Analytics? Explain how structured and unstructured data are used in business and economic analysis.

Q6. Describe the significance of Big Data technologies in different sectors. Explain with example how Big Data is transforming healthcare industry.

SECTION – D

Q7. Define Cloud Computing. Discuss its key features, advantages, and limitations.

Q8. Explain the main components of Cloud Computing architecture. Discuss its various service models.