SREENARAYANAGURU OPEN UNIVERSITY
The State University for Education, Training and Research in Blended Format, Kerala
University Building, Kureepuzha, Kollam, Kerala-691601 | www.sgou.ac.in

ASSIGNMENT QUESTIONS

MA ECONOMICS
SEMESTER-I
MICROECONOMICS I
M23EC01DC

SET 1 (Descriptive)

Choose **any one** from the following five questions. The answer should be in 5 to 7 pages.

1. 'The demand function for durable goods can be extended for non-durable goods'. Explain the dynamic version of the demand functionmodels. How can the model for durable goods be extended for non-durables?

2. Explain the properties of CobbDouglas production function and Constant Elastic production function. Analyse the properties of both the production functions and assess the superiority of CES Production function. Also elucidate how CES is a generalised production function of CobbDouglas Production.

3. Critically explain advertising in the context of monopolistic competition. Elucidate the role of advertising in creating or reducing competition using examples to support your answer.

4. Discuss Zero Sum and Non-Zero Sum game in the context of game theory. How does *mini-max* and *maxi-min* strategy leads to equilibrium and dominant strategy under Game Theory.

5. Explain Bain's limit pricing theory as presented in his article 'Oligopoly and Entry-Prevention.' Discuss the models of limit pricing proposed by Bain. Conclude by examining the importance of Bain's limit pricing theory within oligopolistic markets.

(1*15=15)

SET II (Analytical)

Choose **any one** from the following five questions. The answer should be in 5 to 7 pages.

1. Why do people engage in uncertain games such as purchasing lottery even if the chances of winning are low? Eluicidate fair games and non-fair games based on uncertain games in real life. On the basis of this, explain St. Peterburg Paradox and Bernoulli's Solution.

   Instructions: Refer lottery system in Kerala and Middle East.

   References:

   1.Pindyck, Robert.S, Rubinfield, Daniel, L, Mehta, Premlal, L (6th edition), *Micro Economics*, Pearson.

   2. Snyder, Christopher, Nicholson, Walter. (2012). *Microeconomic Theory: basic principles and extensions* (Ed. 11th), Cengage Learning.

2. 'Research & Development and resultant technological advancement enhances production'. Explain the role of technical progress in production process by analysing the case of major developed and developing nations.

   Instruction: Analyse endogenous and exogenous technical progress in these nations.

3. Analyse different types of markets in the real-world and find out the examples of oligopoly markets. Explain the working of collusive and non-collusive markets using these real-world examples. Discuss the key factors that contribute to oligopolistic behaviour.

   Instructions: Analyse real world markets of Telecommunications, Cosmetics, Petroleum etc.

   References:1. Salvatore, Dominick (2009), Principles of Microeconomics, Oxford University Press.

4. Choose a multinational corporation (MNC) and critically analyse its approach to sales maximisation, drawing insights from Baumol's Sales Maximisation theory. Explore how the chosen MNC aligns with the theory's principles.

Data Sources:

a) Baumol, W. J. (1967). *Business Behavior, Value, and Growth.* Publisher: Harcourt, Brace & World.
b) Annual Reports for the relevant years of the selected MC.
c) Market analysis reports of the selected MNC.
    - Reports from Statista, IDC, or similar reputable sources.

Textbooks:

a) Mankiw, N. G. (2014). *Principles of Economics.* Cengage Learning.
b) Varian, H. R. (2014). *Intermediate Microeconomics: A Modern Approach.* W. W. Norton & Company.

5.Choose a multinational corporation (MNC) operating in an oligopolistic market and analyse its pricing strategies in light of the insights provided by the Hall and Hitch Report. Critically assess how the selected MNC aligns with or deviates from the observations made by Hall and Hitch.

Data Sources:

a) Annual Reports of the selected MNC
b) Industry reports from reputable sources like IBISWorld, Statista, or Bloomberg.
c) Academic articles on pricing strategies in oligopolies.

Textbooks :

a) Varian, H. R. (2014). Intermediate Microeconomics: A Modern Approach. W. W. Norton & Company.
b) Hall, J., & Hitch, E. (1939). Price Theory and Business Behavior. Oxford University Press.
c) Mankiw, N. G. (2014). Principles of Economics. Cengage Learning.

(1*15=15)

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MA ECONOMICS
SEMESTER-I
MACRO ECONOMICS I
M23EC02DC

SET 1 (Descriptive)

Choose **any one** from the following five questions. The answer should be in 5-7 pages.

1. Examine the Classical perspective on market mechanisms, price flexibility, and the self-adjusting nature of markets. How do these assumptions contribute to the Classical view of long-run equilibrium, and what are potential critiques of this approach?
2. Examine the Permanent Income Hypothesis as an alternative theory of consumption. How does this hypothesis suggest that individuals base their consumption decisions on their expected long-term income rather than current income? Discuss the implications of income uncertainty and how individuals' smooth consumption over time.
3. Explore the Flexible Accelerator Model, considering how it builds upon the Acceleration Theory. Discuss the role of capacity utilisation, adjustments in capital stock, and the impact of technological change on investment decisions. Provide examples illustrating the application of the Flexible Accelerator Model.
4. Describe the evolution of Keynes' liquidity preference approach and its impact on understanding of the demand for money. Find out the key concepts within liquidity preferenceapproach and discuss how Keynesian ideas diverge from the Classical Quantity Theory approaches.
5. Examine the new microeconomic theories of the labour market, including Search theory and the DMP (Diamond, Mortenson, Pissarides) model. Evaluate how these models contribute to explaining unemployment dynamics and wage determination.

(1*15=15)

SET II (Analytical)

Choose **any one** from the following five questions. The answer should be in 5-7 pages.

1. Suppose that the IS schedule is vertical, it implies that investment demand is completely insensitive to changes in the interest rate. In this case, fluctuations in the interest rate do not lead to changes in the level of investment. Given this, examine whether a money-supply target is preferable to an interest-rate target for the case of IS shocks using the IS-LM graphs.

   Instructions : Policy Implications -Highlight how a money supply target may be preferable when investment is unresponsive to interest rate changes -Discuss potential limitations, such as the assumption of a perfectly vertical IS curve, and consider real-world factors that might influence the responsiveness of investment to interest rate changes -Graphical representation of IS-LM model

2. Explain the role of fiscal policy and monetary policy in the context of the IS-LM model during the 2008 financial crisis.

   Instructions : Discuss how the fiscal and monetary policy impact the IS curve and LM curve- Illustrate the effects on output, interest rates, and the overall macroeconomic equilibrium with graphical explanation

3. Prepare a case study on the impact of the Great Depression on the United State's economy in the late 1920s

   Instructions: Introduction - Root causes of the Great Depression- Impact on Businesses and Industries- Government Policies and New Deal Programs- Unemployment and social impact -Impact of the role of international trade and relations- Discuss successful strategies adopted by the government.

4. Critically analyse the H theory of money supply, by explaining its key components and underlying assumptions. Evaluate its relevance in the context of modern monetary systems, considering the strengths and weaknesses of this approach.

Instructions

Introduce the H theory of money supply - Mention key Components of the H Theory - Highlight the assumptions of H theory - relevance-how it aligns with the current structure of central banking-application in the context of electronic money and digital currencies-Strength and weaknesses of H theory-Dynamic conclusion.

Reference:

1."Macroeconomics" by N. Gregory Mankiw.

2."Macroeconomics: Principles and Policy" by William J. Baumol and Alan S. Blinder.

3. Federal Reserve Economic Data (FRED): https://fred.stlouisfed.org/

4. World Bank's World Development Indicators: https://databank.worldbank.org/source/world-development-indicators

5. Analyse the concept of Non-Accelerating Inflation Rate of Unemployment (NAIRU) and its relationship with inflation expectations. Identify the insights provided by Tobin's view on the NAIRU and its implications for the trade-off between inflation and unemployment. ?

Instructions :

Concept of NAIRU and Inflation Expectations-Tobin's View on NAIRU and the Inflation-Unemployment Trade-off:Empirical Evidence for NAIRU:Challenges and Criticisms of NAIRU-support your analysis with relevant examples, data, and references wherever applicable.

Suggested Reference:

Romer, D. (2018). "Advanced Macroeconomics." McGraw-Hill Education.

Tobin, J. (1972). "Inflation and Unemployment." American Economic Review, 62(1-2), 1-18.

Ball, L., & Mankiw, N. G. (2002). "The NAIRU in Theory and Practice." Journal of Economic Perspectives, 16(4), 115-136. **(1*15=15)**

MA ECONOMICS
SEMESTER-I
INDIAN ECONOMY
M23EC03DC

SET 1 (Descriptive)

Choose **any one** from the following five questions. The answer should be in 5 to 7 pages.

1. Provide a comprehensive overview on the Five-Year Plans in India. Explain the structure and key features of the Five-Year Plans, highlighting how they were designed to address socio-economic challenges and promote growth. Give a comparison of Five Year Plans with NITI Aayog.

2. Elucidate the key features of population policies adopted by the Government of India since independence. Discuss the evolution of population policies over the years, highlighting any significant shifts or amendments.

3. Examine the different phases of the Green Revolution in India, by providing a detailed historical overview of its initiation and subsequent development. Explore the key characteristics and milestones of each phase, emphasising technological advancements, policy interventions, and their impact on agricultural practices.

4. Compare and contrast the implementation of Structural Adjustment Programmes (SAP) and Stabilisation Policies during the first wave of liberalisation in the 1980s in India. Analyse the objectives, strategies, and outcomes of these economic measures. Assess the role played by SAP and Stabilisation Policies in addressing economic challenges and setting the stage for more comprehensive economic reforms in the early 1990s.

5. Explain the composition and directions of India's foreign trade, providing a comprehensive overview of the key components and geographical patterns. Discuss the composition of India's foreign trade, emphasising the major goods and services traded. Examine the sectors contributing significantly to exports and imports, and analyse how these have evolved over time.

SET II (Analytical)

Choose **any one** from the following five questions. The answer should be in 5 to 7 pages.

1. To what extent have poverty alleviation programmes in India effectively addressed poverty. Identify key success factors or shortcomings through specific program illustrations.

   Instructions: Evaluate various dimensions of poverty alleviation programs in India, explore the impact of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in addressing rural poverty, highlighting both successes and limitations.

2. Analyse the industrial sector's contributions to India's economic growth and illustrate the challenges and opportunities in this sector? Provide practical examples, case studies, or real-life scenarios to support your analysis.

   Instructions: Assess the impact of the manufacturing sector on economic growth, examine the challenges faced by the manufacturing sector using specific instances from industrial hubs like Gujarat or Maharashtra.

3. Critically evaluate the impact of Financial Sector Reforms in India, with a focus on Banking Sector Reforms. Analyse the recommendations and outcomes of the Narasimham Committee Reports in 1991 and 1998. Did initiatives like Mission Indradhanush, financial inclusion measures, and the JAM Trinity promoted the idea of an inclusive financial system? Include recommendations or insights into how these reforms can be further enhanced or adjusted to meet contemporary challenges.

Instructions:

Introduce the concept of financial sector reforms and their importance-Outcomes of Narasimham Committee Reforms-Assess whether the initiatives, including Mission Indradhanush, financial inclusion measures, and the JAM Trinity, have contributed to building an inclusive financial system.

Reference:

1. Mohan, R., & Ray, P. (2015). "Banking Sector Reforms in India: Striking the Right Balance." Economic and Political Weekly, 50(9), 50-58.
2. Narasimham Committee I (1991) - "Report of the Committee on Financial System."
3. Narasimham Committee II (1998) - "Report of the Committee on Banking Sector Reforms."
4. Ministry of Finance, Government of India. (Various years). "Economic Survey of India."
5. Articles from reputable news sources like The Economic Times, Business Standard, and The Hindu Business Line covering recent developments and evaluations of financial sector reforms.

4. Assess the impact of Major Fiscal and Tax Reforms in India, focusing on initiatives such as the Fiscal Responsibility and Budget Management (FRBM) Act and the Goods and Services Tax (GST). Do these reforms really contribute to economic stability and ease of doing business in India?

Instructions:

Introduce the significance of fiscal and tax reforms in economic development-Highlight the role of the FRBM Act and GST in shaping India's fiscal and taxation policies- Discuss the challenges faced during the implementation of the FRBM Act and GST if any-Analyse criticisms or concerns raised by industries, economists, or other stakeholders- comment on whether these reforms have truly contributed to economic stability and the ease of doing business.

Reference:

1. Kelkar, V. L. (2003). "Fiscal Responsibility in India: An Interim Report." Economic and Political Weekly, 38(23), 2253-2260.

2. The Fiscal Responsibility and Budget Management (FRBM) Act.

3. Reports from the Central Board of Indirect Taxes and Customs (CBIC) on the implementation of GST.

5. Evaluate how the mergers of public sector banks in India have influenced the efficiency, stability, and accessibility of the banking sector. Analyse the positive outcomes of these mergers, emphasising improvements in efficiency, financial stability, and accessibility of banking services. Simultaneously, critically assess the negative outcomes or challenges that have arisen as a result of the mergers.

   Instructions:
   Provide a brief historical overview of the context of the mergers of public sector banks in India- Evaluate the impact of mergers on the operational efficiency of the merged banks- Discuss whether the mergers have contributed to a more resilient and stable banking system.

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MA ECONOMICS
SEMESTER-I
SOFTWARE PACKAGES FOR ECONOMIC ANALYSIS (SPREADSHEET)
M23ECO1AC (DS)

SET 1 (Descriptive)

Choose **any one** from the following five questions. The answer should be in 5 to 7 pages.

1. Write an essay on advanced charts used for data analysis. Discuss, in detail, about four advanced charts: Histogram, Scatter Plot, Stock Chart, and Box and Whisker Plot. Provide step-by-step instructions on how to create any one of these charts in Microsoft Excel.
2. Explain the key steps involved in hypothesis testing. Include a detailed discussion on stating null and alternative hypotheses, setting the significance level, gathering sample data, choosing an appropriate test statistic, conducting the statistical test, determining the critical value, or calculating the p-value, interpreting the results, and drawing conclusions. Additionally, highlight the importance of hypothesis testing and its limitations.
3. Write an essay on the concept of optimisation problems in Excel. It should cover the types of optimisation problems, components of an optimization problem, and the importance of finding the feasible region. Provide a step-by-step guide on how to structure and solve optimisation problems in Excel, emphasising the role of the objective function, decision variables, constraints, and the feasible region.
4. Write a comprehensive essay explaining the process of sorting and filtering data in Excel. Include the basic steps involved in sorting and filtering. Explain about the different types of filtering options available in Excel, highlighting their applications in real-world scenarios.
5. Explain the role of conditional formatting in enhancing data visualisation in Excel. Provide a detailed overview of the various formatting options and techniques available, such as highlighting data points, colour-scale formatting, data bars, icon sets, and data validation. Include a step-by-step guide on how to apply conditional formatting in Excel and its impact on the visual appeal, interpretation, and pattern identification of data.

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SET II (Analytical)

Choose **any one** question from the following five questions. The answer should be in 5 to 7 pages. Answers must be hand written.

1. Use the following dataset and answer the given questions.

Employee ID	Name	Age	Salary (in INR)	Experience (in years)
1	John	28	55000	3
2	Susan	35	72000	7
3	Michael	40	85000	10
4	Lisa	32	63000	5
5	David	27	50000	2
6	Emily	38	78000	8
7	Robert	31	60000	4
8	Emma	29	58000	3
9	Christy	34	70000	6
10	Amy	33	66000	5

   a. Create a new workbook and input the provided Employee Details dataset into the appropriate cells.
   b. Save the workbook with the title 'Employee Information.'
   c. Print the workbook.

Instructions

I. Write steps for answering each question. (Steps to create a workbook, Steps to enter data and steps to print the workbook.)
II. Print the workbook you created and attach it along with the assignment.

2. Use the following dataset and answer the given questions.

Student ID	Name	Age	Maths	Science
1	Lintu	16	78	92
2	Emma	15	92	88
3	Joseph	17	85	90
4	Avanthika	16	88	94
5	Noel	15	90	85

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6	Ishani	17	95	96
7	Mia	15	82	80
8	Ethan	16	90	92
9	Luca	17	88	85
10	Sophia	15	92	90

a) Sort the student data based on their science scores in ascending order.

b) Create a new column to calculate the total marks for each student.

c) Use the AVERAGE function to calculate the average age of all students.

Instructions

I. Write steps for answering each question. (Steps to sort the data, Steps to find total marks and steps to find the average.)

II. Print theworkbook with results and attach it along with the assignment.

3. Use the following dataset and answer the given questions.

Product	**Category**	**Quarter**	**Sales**
Smartphone	Electronics	Q1	120
Sweater	Clothing	Q1	140
Laptop	Electronics	Q1	100
Smartwatch	Electronics	Q2	150
Jeans	Clothing	Q2	160
Earphones	Electronics	Q2	110
Tablet	Electronics	Q3	90
Coat	Clothing	Q3	180
Fitness Tracker	Electronics	Q3	130
Smartphone	Electronics	Q4	110
Dress	Clothing	Q4	130
Headphones	Electronics	Q4	120

a) Create a bar chart to visualise the total sales for each quarter. Include the appropriate chart title, axis labels, and legend.

b) Apply conditional formatting to highlight cells with sales above 130 units.

Instructions

I. Write steps for answering each question. (Steps to create bar chart, Steps to create chart title, axis labels, and legend, and steps to apply conditional formatting.)

II. Print the workbook with resultsand attach it along with the assignment.

4. Use the following dataset and answer the given questions.

Month	**Expenditure (INR)**
Jan	850
Feb	950
Mar	800
Apr	1200
May	1350
Jun	1100
Jul	1500
Aug	1400
Sep	1250
Oct	1050
Nov	900
Dec	1600

a. Calculate the descriptive statistics for the above dataset using formula and Data analysis ToolPak

Instructions

I. Write steps for answering each question. (Steps to enter formula, steps to use Data analysis ToolPak to generate descriptive.)

II. Print the workbook with resultsand attach it along with the assignment.

5. Provided below is a dataset representing the blood pressure of 12 individuals before and after a dietary intervention. Perform a 2-sample paired t-test with a significance level of 0.05 to ascertain if there exists a statistically significant difference in blood pressure before and after the dietary intervention.

Individual	BP Before (mmHg)	BP After (mmHg)
1	120.5	118.2
2	130.8	126.4
3	110.3	108.6
4	122.1	119.3
5	140.2	135.7
6	118.6	115.4
7	128.4	124.9
8	108.9	107.1
9	133.7	131.1
10	115.2	112.9
11	125.6	122.8
12	112.8	110.4

Instructions

I. Write steps for answering each question. (Steps to perform 2-sample paired t-test)

II. Print the workbook with results and attach it along with the assignment.

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MA ECONOMICS
SEMESTER-I
QUANTITATIVE METHODS FOR ECONOMICS I
M23EC04DC

SET 1 (Descriptive)

Choose any one from the following five questions. The answer should be in 5 to 7 pages.

1. Explain the method of maximum likelihood estimation in the context of statistical inference. Provide a detailed explanation of how maximum likelihood estimation is used to estimate the parameters of a probability distribution. Write down the advantages and limitations of the maximum likelihood estimation method in statistical analysis.
2. Give a note on LPP. What are the major characteristics of LPP? How can we find the solution for an LPP using simplex method? Give an example for an LPP.
3. Describe the concept of sampling distribution. Discuss the properties of Z-test, Student t - test, F- test, and Chi-square test.
4. How does formulating a clear hypothesis contribute to the effectiveness of research studies? What are the key elements involved in hypothesis testing? Explain the significance of the null and alternative hypotheses in the research process.
5. a. Explain the uses of derivatives in finding economic concepts such as Marginal Utility, Marginal Revenue, and the Marginal Cost.

   b. Find the marginal concepts:

   i) Find MR when $TR = 9Q^2 + 27Q + 36$ and Q is 3

   ii) Find MC when $TC = 6Q^4 + 4Q^3 + Q^2 - 10Q + 30$ and Q is 4

   iii) Find MR when $84 - 6P - Q = 0$ and Q is 6

SET II (Analytical)

Choose any one question from the following five questions. The answer should be in 5 to 7 pages.

1. Assume that you are conducting a survey to estimate the proportion of students in a college who prefer online learning over traditional classroom learning. From a random sample of 200 students, 120 students express a preference for online learning.
    a. Calculate with 90% confidence interval for the population proportion of students who prefer online learning.
    b. Discuss the interpretation of the confidence interval you calculated and what it tells you about the proportion of students in the college who prefer online learning.
    c. Compare and contrast the method of least squares and the method of maximum likelihood for estimating the population proportion in this scenario. Which method would you recommend, and why?
2. Answer the following questions:
    a. Optimise the function $x^3 - 9x^2 + 27x - 25$

        - Identify the critical points by finding the first derivative, setting it equal to zero, and solving for *x*.
        - Apply the second-derivative test to determine whether each critical point represents a relative maximum or minimum.

        Hint: Calculate the second derivative and evaluate it at the critical points.Discuss the outcomes and specify where the function is maximized or minimized.

    b. Consider the multivariable function $2x^2 - 4xy + 3y^2 + 10x - 8y + 6$

        - Find the critical points by calculating the first-order partial derivatives and setting them equal to zero.

- Determine whether each critical point is a relative maximum or minimum by examining second-order partial derivatives.

  Hint: Calculate the second-order partial derivatives and evaluate them at the critical points.Discuss the results and specify where the function has relative maxima or minima.

3. Differentiate between parametric and non-parametric tests, highlighting the key features associated with each. Explain the situations where non-parametric tests are preferred over parametric tests. Discuss the types of non-parametric tests, with a specific emphasis on the Wilcoxon Signed Rank Test. Provide a step-by-step explanation on how the Wilcoxon Signed Rank test is conducted.

   Hint-Parametric Tests: usually normal distribution-Data type: Suitable for interval or ratio data. Examples: t-test, ANOVA, Pearson correlation. Non-Parametric Tests: assumptions about the population distribution-Data type: Suitable for ordinal, nominal, or interval data- Examples: Mann-Whitney U test, Kruskal-Walli's test, Wilcoxon Signed Rank Test-Situations where non-parametric tests are preferred: Data distribution, Scale of measurement, for ordinal or nominal data, Sample size- steps of Wilcoxon Signed Rank Test calculation.
4. Answer the following questions:
   a. Define the following set operations: union, intersection, and difference. Provide a Venn diagram representation for each operation for two arbitrary sets A and B.
   b. Explain the concept of the complement of a set. Given a universal set U, define the complement of set A within U.
   c. Consider sets A = {1, 3, 5} and B = {2, 4, 6}. Perform the following operations and show the steps: A∪ B
5. Formulate a linear programming problem and find the solutions for the scenario given below:

   A company is tasked with managing the production of two types of renewable energy sources: solar and wind. The objective is to optimize the energy output considering various factors like available land area, cost per unit of energy production, and environmental impact.

Constraints

1. Land Area: The company has a total land area of 200 square meters available for installing solar panels and wind turbines.Each unit of solar panel requires 2 square meters of land, and each unit of wind turbine requires 3 square meters of land, ensures that the utilization of land is within the specified bounds
2. Cost: Solar panels cost ₹50 each, and wind turbines cost ₹40 each. The company has a budget constraint of ₹3000 for the installation of renewable energy sources.
3. Environmental Impact: The company wants to limit the environmental impactto, and each solar panel contributes an impact of 3 units, while each wind turbine contributes an impact of 2 units.Tominimize the environmental impact, the company sets a limit on the cumulative impact contributed by each solar panel and wind turbine. The constraint restricts the total environmental impact to 120 units.

Objective

1. Energy Output: Each solar panel produces 5 units of energy, and each wind turbine produces 8 units of energy.

Hint: Decision variables can represent the quantity of solar panels and wind turbines to be installed. Identify the entering and exiting variables in each iteration of the simplex method. The entering variable is chosen based on the coefficient in the objective function, and the exiting variable is determined by the minimum ratio test. Determine the optimal values of x and y that maximize the total energy output (Z) while satisfying all constraints.

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