Use separate answer script for each group

Ph.D. Course Work Examination, 2019
Economics
Course : 2 (Elective)

Time : 4 Hours **Full Marks : 80**

Questions are of value as indicated in the margin

Answer from any two groups of your choice

Group – A : Economics of Corruption

Answer any two questions

1. Give the general definition of corruption. Under what economic circumstance does it generate? Frame in detrail, a general perception of corruption from your real life experience. 2+5+13=20
2. a) How can a 'bribery market' be generated between the agent and client where the principal is also involved?

   b) What kind of signalling is required for stable bribery market? What efforts on the part of government can minimize corruption? 5+8+7=20
3. Define and illustrate the difference between corruption without theft and corruption with theft. Considering both the demand and supply phenomena, which of the two, according to you, can fuel the spread of corruption more? What kind of role should the government play in these cases? 5+8+7=20
4. Discuss the corruption in a situation where a private agent (buyer) needs several complementary government goods (viz., licenses, permits) to conduct business and demonstrate different degree and nature of corruption. 20

Group – B (Indian Economy I)

Answer any two questions

1. (i) Do you think that there was sufficient consensus among Indian people to adopt the neo-liberal regime? (ii) What were the conditions that caused India to enter into the neo-liberal regime? (iii) Critically explain the role of government of India in this regard. 6+8+6=20
2. Critically discuss the theoretical framework according to which the Indian economy had undergone the policy of liberalization. 20
3. Critically discuss the idea of globalization, stabilization and privatization and its pattern of implementation in India. 20
4. According to the dissenting economists the liberalization policy in India is based on some fabricated myth. Critically discuss. 20

Group – C (Advanced Topics in Growth and Development I)

Answer all the questions

1. Define decomposable property in the light of competitive general equilibrium models. Explain in detail in the light of Jones (1965) paper. 10
2. State and derive (mathematically) Stolper Samuelson theorem. 10
3. State and derive (mathematically) Rybczynski theorem. 10
4. How the model of Marjit and Kar (2005) is different from Jones (1971) model? 10

P.T.O.

Group – D (International Economics)

Answer all the questions

1. How can we determine the equilibrium wage ratio of two trading countries in a generalized Ricardian model where labor is used as a single factor of production to produce n number of commodities? Also examine if gains from trade can be asserted in such situation. 9+4=13

2. Assume that two goods X and Y are produced in a small country. Both X and Y use a mobile factor K, whereas they use labor of different skills as specific factors. Both X and Y also requires the service of interemediation to conduct their business. Intermediation service requires both types of labor as inputs. Also note that differently skilled labours are used in fixed proportion to produce intermediation activities. Build a specific factor competitive model of trade under the assumption of full employment and constant returns to scale in production. In such a setup, examine the condition for an increase in wage-inequality between differently skilled labor due to a change in the cost of intermediation. 5+12=17

3. Using a monopolistically competitive model of trade full employment assumption, where demand function is characterized by love-for variety, argue that in the long run history matters in determining the equilibrium real wage rate. 10

Group – E (Economic Development and Environmental Economics)

Answer **any four** questions

1. What do you understand by market failure? Give some examples of market failure. Is there any role of the State in market failure? Justify your answer. 3+3+4=10

2. Briefly explain how does growth affect environment. In this context explain what you understand by Kuznets' curve. 5+5=10

3. Explain the first and second theorem of welfare economics. In this context explain what you understand by Samuelson rule. 5+5=10

4. Assume that there has been an oil spill in the Indian Ocean. Explain the problems that you face while assessing the economic cost of damage from the spill. How do you assess using the tools of economics? 5+5=10

5. Explain the various objectives of Integrated Coastal Zone Management (ICZM). In this context explain the key elements of ICZM. 5+5=10

6. Write short notes on the following: 5+5=10

   a) Common Property Resources

   b) Logistic Growth curve in Fishery

Ph.D. Course Work Examination, 2019
Economics
Course – 1
Research Methodology and Techniques

Time : 4 Hours **Full Marks : 80**

Questions are of value as indicated in the margin

Answer **any four** questions

1. In the context of a research based on primary survey, explain the following terms and their importance:
   i) Literature review ii) Pilot Survey iii) Pre-testing of questionnaire iv) Analytical method
   4+4+4+8=20
2. a) In the context of a research based on primary survey, explain the concept of 'control' and 'treatment' population. Why they are needed to be identified before the sample selection? Give two examples of research questions and corresponding control and treatment population.
   b) What do you mean by 'multi-stage sampling' and 'stratified sampling'? Give an example of a hypothetical population explaining the sources of population heterogeneity with respect to the research question. Explain how you would decide on a stratified random sample from it.
   10+10=20
3. a) What do you mean by 'unit of analysis' in an empirical study? Give some examples of research questions where you need to deal with different units of analysis.
   b) In the context of developing a survey instrument, explain the following terms with examples:
   i) Open-ended questions ii) Close-ended questions
   iii) Pre-coded questions iv) Modules of a questionnaire 10+10=20
4. In a multiple regression analyses, a researcher observe the following cases :
   a) R^2 and all β_i are significant
   b) R^2 and some but not all β_i are significant
   c) R^2 but none of the β_i are significant
   d) Some β_i are significant, but not all, nor the R^2
   e) Neither R^2 nor any β_i are significant
   i) Explain the econometric significance of the above five cases.
   ii) What corrective measures do you propose to tackle case (c)?
   iii) How would you examine the redundancy of an explanatory variable in the context of multiple regression exercises? Explain the test procedure and the decision rules here. 12+4+4=20
5. a) Derive the Least Square Estimator by minimizing General Residual Sum Square Error in GLSM.
   b) State and prove the Atkinson's Generalized Gauss Markov Theorem. 8+12=20
6. Suppose a researcher have data on medical expenditure on a sample of individuals. Some of them who did not have any ailments or did not bother to go to doctor even if they had ailments, had no expenditures. He/she wish to estimate the income elasticity of medical expenditure. He/she is thinking of dropping the individuals with zero expenditures and estimating the model by OLS.

P.T.O.

a) Is this approach correct? Justify your answer by suggesting a suitable econometric model.

b) How do you estimate such a model?

c) What criteria would you use to test the significance of individual coefficients and overall fit of the model? 4+10+6=20

7. a) What is the Vector Autoregressive (VAR) Model and Vector Error Correction Model (VECM)? When the VECM is used?

b) How would you assess the appropriateness of your estimated VAR model?

c) Construct a VAR model and explain how you would examine the causality between the variables using this model. 5+8+7=20

8. a) Define the following terms and describe the processes that they represent:

i)Weak Stationarity

ii) Strong Stationarity

iii) Deterministic Trend

iv) Stochastic Trend

b) Why is it in general important to test for stationarity in time series data before attempting to build an empirical model?

c) Discuss how a researcher might test for cointegration between the variables using the Engle-Granger approach. Explain also the steps involved in the formulation of an error correction model. 6+4+10=20

Ph.D Course Work Examination – 2023
Subject: Economics
Course 1: Research Methodology and Techniques
Questions are of marks as indicated in the margin
Answer any **Four** from the following questions

Time: 3 Hours **Full Marks: 80**

(1) How do you relate the research method and research methodology from the aspects of economics research? Describe the econometrics research methodology from the perspectives of various types of data. What are the steps/ procedures for using the Econometrics methodology?
[3+8+9=20]

(2) Write a short note on the econometrics research methods in case of time series data. Define spurious regression. Express the concept of unit root and its relationship with the stationary process.
[7+3+10=20]

(3) What is panel data econometrics? Discuss the reasons for using panel data in research. Write short notes on (a) Fixed effect model and (b) Random effect model.
[3+5+12=20]

(4) Write an empirical research proposal on any relevant economic issue using either time series or panel data. Mention the required steps to complete that research.
[14+6=20]

(5) Describe your PhD research proposal which must have the following subsections: (a) Motivation/Context, (b) Broad objectives, (c) Literature in brief, (d) Literature gaps, (e) Hypotheses if empirical analysis/Specific questions if theoretical research, (f) Methodology, (g) Data source (if empirical work), (h) Expected outcomes (if theoretical/analytical research).
[20]

(6) (a) Define random sampling and bring out the distinction between SRSWR and SRSWOR.
(b) What are the possible sources of biases in sample survey? Discuss with examples.
(c) Set up a policy-oriented research question that you can answer through a primary survey of sample units. Describe briefly the major characteristics of your population and unit of analysis. Describe in details the sample selection procedure from your population.
[3+ 3 + 14=20]

7. (a) In the K variable linear regression model, obtain the unbiased estimator of the error variance (σ^2)?
(b) How is the correlation coefficient in 2- variable model different from the regression coefficient? Explain.
(c) What are the differences in assumptions and estimates of population parameters by the method of maximum likelihood (ML) and the ordinary least square (OLS)?
[10+5+5=20]

8. In a sample of 20 observations corresponding to the model $Y_i = \alpha + \beta X_i + U_i$, where the $U_i \sim$ IID $(0, \sigma^2)$, gave the following information: $\Sigma Y_i = 21.9$, $\Sigma (Y_i - \bar{Y})^2 = 86.9$, $\Sigma(X - \bar{X})(Y_i - \bar{Y}) = 106.4$, $\Sigma X_i = 186.2$, $\Sigma(X - \bar{X})^2 = 215.4$.
(a) Estimate α and β.
(b) Calculate their estimated standard errors.
(c) Estimate the conditional mean value of Y corresponding to $X = 10$.
(d) What is the variance inflation factor (VIF)? How is it used in the detection of multi collinearity?
[7+4+2+7=20]

PhD Coursework Examination, 2024
Subject: Economics
Course II (Elective)

Time: 3 Hours

Full Marks: 80

(Questions are of marks as indicated at the margin)
Answer from any two groups of your choice
[Use separate answer sheets for each group]

Group A: Economics of Corruptions

(Answer any TWO questions)

1. How is corruption perceived in the sphere of international trade and investment? How does it affect the interest of the developing and transitional countries? 10+10
2. What is an informal sector? How does it subcontract with a formal sector? Show that globalization in the forms of (a) lowering tariffs and (b) interest rates have opposite reactions on informal economy. 2+3+15
3. Why abatement costs are very important in deciding the state of environmental quality? Show that in the presence of corruption, the stringent abatement norms by the government might be counterproductive. 4+16
4. Show that a tough regulatory approach may not always be a correct prescription for the policymakers. 20

Group B: Development Economics

(Answer any TWO questions)

1. Critically analyse the doctrine of development economics introduced during the first half of the 20th century. Discuss the basic elements of the contemporary discourse of development management. 10+10
2. Discuss how the discourse on development experienced a paradigm shift during the late years of the 20th century. Discuss Sen's Capability approach to economic development. 10+10
3. What are the major debates about the factors of growth of the East Asian Tigers? Do you support the view that Indian economic growth process during the first three decades after her independence provides an example of government failure and creates a case for liberalisation as a strategy for achieving smooth functioning of the economic process? 10+10
4. Discuss in detail the Chinese model of development? What lessons can developing countries learn from China's rapid growth? 14+6

Group C: International Trade Theory

(Answer any TWO questions)

1. Assume that two goods X and Y are produced in a small country. Both X and Y use a mobile factor K, whereas they use labor of different skills as specific factors. Both X and Y also requires the service of intermediation to conduct their business. Intermediation service requires both types of labor as inputs. Also note that differently skilled labors are used in fixed proportion to produce intermediation activities. Build a specific factor competitive model of trade under the assumption of full employment and constant returns to scale in production. In such a setup, examine the condition for an increase in wage-inequality between differently skilled labor due to a change in the cost of intermediation. 6+14
2. Following Krugman's (1979) arguments diagrammatically explain the adjustment process from the short run equilibrium to the long run equilibrium where consumers have love for variety preference and the market is monopolistically competitive. 20
3. Develop a trade model, characterised by increasing returns to scale and monopolistic competition, in presence of trade in both intermediate and final goods to explain why the endowment basis of trade is still crucial in determining trade across various stages of production. 20

Group D: Advanced Topics in Growth and Development Economics

(Answer any TWO questions)

1. What is "Knife-edge instability" problem? What solution is prescribed by Cambridge school to tackle this problem? 20
2. What will be the effect of introducing proportional consumption tax replacing proportional income tax in Barrow (1990) model? Explain the steady state properties in this modified Barrow (1990) model. 20
3. What will be the impact of introduction of durable public goods in place of perishable public good in Barrow (1990) model? 20
4. In the context of Arrow Model (1962), show that competitive market equilibrium is Pareto inefficient. 20

Group E: Indian Economic Problem

(Answer any TWO questions)

1. In a one-department Kaleckian model of advanced capitalist economy, show the capitalist-worker duality in terms of income and expenditure determinations. 20

2. (a) In the context of a two-department model of Kalecki having industry-agriculture duality, derive the effect of a bumper harvest on industry under the conditions of industry-agriculture unbalanced trade (in favour of the latter) and variability of per capita food consumption of the industrial worker.
(b) How does the outcome change under industry-agriculture balanced trade and fixity of per capita food consumption of the industrial worker? 12+8

3. (a) Derive the short-run macroeconomic effects of MGNREGP using a two-department model of Kalecki having industry-agriculture unbalanced trade and fixity of per capita food consumption of the industrial worker.
(b) How does the outcome change in the medium-run? 14+6

4. Give an overview of the Indian economy since independence from the perspective of the Indian planning process and in light of the Bhagwati-Sen debate. 10+10

5. Write an essay on the post-reform Indian economy, evaluating the performance from any of the following aspects: institutions, government and private-sector. 20

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Ph.D. Coursework Examination, 2024
Subject: ECONOMICS
Course - I (Research Methodology and Techniques)

Time 3 Hrs. **Full Marks: 80**

(Questions are of marks as indicated at the margin)

Answer any four questions:

1. Describe your PhD research proposal which must have the following subsections: Motivation/Context, Broad objectives, Literature in brief, Literature gaps, Hypotheses if empirical analysis/Specific questions if theoretical research, Methodology, Data source (if empirical work), Expected outcomes (if theoretical/analytical research).

20

2. (a) How do you detect the problem of autocorrelation? How do you correct the problem of autocorrelation?

(b) Differentiate between the terms 'homoscedasticity' and 'heteroscedasticity'. Give two examples where hetereoscedasticty might be present.

(c) Suggest some corrective measures of heteroscedasticity problem.

$8 + 6 + 6 = 20$

3. (a) Indicate whether each of the following statements is True (T), False (F) or uncertain and give a brief explanation:

(i) Suppose that the coefficient of a variable in a multiple regression equation is significantly different from zero at the 20 percent level. If we drop this variable from the regression, both R^2 and adjusted R^2 necessarily decrease.

(ii) The exclusion of important variables from the model may lead to autocorrelation problem.

(iii) Whether multicollinearity is a problem or not cannot be decided by just looking at the inter-correlations among the explanatory variables.

(b) Suppose you are fitting a demand for food function for a sample of 1000 families. You obtain $R^2 = 0.05$, but the regression program indicates that the F-statistic for the equation is significant but the insignificant t statistics. How can this be? Is there a mistake in the program? Explain your answer.

(c) Suppose you want to estimate the following log linear Cobb-Douglas production function: $\log Q = \alpha + \beta_1 \log L + \beta_2 \log K + u$ How would you examine equivalence of elasticities of labour and capital in respect of your estimated model?

$12 + 4 + 4 = 20$

4. (a) Suppose your regression program refuses to estimate four seasonal coefficients when you enter the quarterly data including a zero-one dummy for each quarter. Is there a mistake in the program? What would be your response?

(b) Consider a model with a zero-one dependent variable. You have a multiple regression program and a program for the logit and the probit models. You have computed the

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coefficients of the linear probability model and the logit and probit models. How do you compare the coefficients of the three models? How will you compute the R^2s for the three models? By what criteria will you choose the best model?

(c) Construct a research problem suitable for application of a Tobit Model.

4 +12 + 4 =20

5. (a) Suppose you are interested to determine the treatment and management of diabetes of 500 non-obese individuals. The individuals are categorized into three clinical classifications – overt diabetes, chemical diabetes and normal and their insulin response (IR), glucose level (GL) and relative weight (RW) are recorded. Suggest a suitable econometric model for this. How do you estimate such a model?

(b) How do you examine the goodness of fit of the chosen?

14 + 6 =20

6. (a) Explain the following terms and describe the processes that they represent: (i) Weak Stationarity, (ii) Deterministic Trend and (iv) Stochastic Trend.

(b) Why is it in general important to test for non-stationarity in time series data before attempting to build an empirical model?

(c) Discuss how a researcher might test for cointegration between the variables using the Engle–Granger approach. Explain also the steps involved in the formulation of an error correction model.

3 + 3 + 14 =20

7. (a) Explain the steps involved in Granger test for causality.

(b) What is meant by the 'ARCH' effect? Explain Engle's procedure of examining the presence of ARCH (p) effects in time series data.

10 + 10 = 20

8. Distinguish between the fixed-effect and random-effect in panel regression model. How do you estimate a Fixed Effect Model? Write a short note on Hausman Test.

6 + 8 + 6 = 20

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PhD Coursework Examination, 2024
Subject: Economics
Course II (Elective)

Time: 3 Hours

Full Marks: 80

(Questions are of marks as indicated at the margin)
Answer from any two groups of your choice
[Use separate answer sheets for each group]

Group A: Economics of Corruptions

(Answer any TWO questions)

1. How do the economists define corruption? How is corruption perception index built? How this index is utilized in the field of research in economics?

5+10+5=20

2. What do you mean by transaction costs of corruption? How do you differentiate between market-based corruption and parochial corruption? Discuss how do the stages of corrupt transactions formed where corrupt deals between the principal/agent and the client can be hidden.

5+5+10=20

3. Define and illustrate the difference between corruption without theft and corruption with theft. Which of the two, according to you, can fuel the spread of corruption more?

15+5=20

4. In a situation where a private agent (buyer) needs several complementary government goods (viz., licenses, permits) to conduct business, show that from supply point view, under corruption and bribery, competition is best, joint monopoly is second best and independent monopoly is worst for efficiency.

20

Group B: Development Economics

(Answer any TWO questions)

1. Develop a dynamic model to illustrate how the initial distribution of wealth influences individual utility derived from consumption and bequest levels.

20

2. How do you show that the initial distribution of wealth and credit market imperfection affect the decision to invest in human capital in a small open economy?

20

3. Discuss an empirical research examining the impact of digitalization on employment and economic development in case of developing economies.

20

4. Propose a suitable empirical research on an emerging issue in development economics and state the relevance of that proposal.

20

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