University of Gondar

College of Business and Economics

School of Economics

Model Exit Exam for Economics Graduate Students

One of the following represents set of assumptions that approximately describes the behavior of an economy

A) Economics model

B) Econometric model

C) Statistical model

D) None of the above

ANSWER: A

Econometric model consists of the following,

A) A set of behavioral equations

B) A statement of whether there are errors of observation

C) Probability distribution of the disturbance

D) All of the above

ANSWER: D

Which of the following refers to panel data?

A) Data on the unemployment rate in a country over a 5-year period

B) Data on the birth rate, death rate and population growth rate in developing countries over a 10 year period.

C) Data on the income of 5 members of a family on a particular year.

D) Data on the price of a company's share during a year

ANSWER: B

Consider the following regression model: $y = \beta 0 + \beta 1x1 + u$. Which of the following is a property of Ordinary Least Square (OLS) estimates of this model and their associated statistics?

A) The sum, and therefore the sample average of the OLS residuals, is positive.

B) The sum of the OLS residuals is negative.

C) The sample covariance between the regressors and the OLS residuals is positive.

D) The point always lies on the OLS regression line.

ANSWER: D

If the residual sum of squares (SSR) in a regression analysis is 66 and the total sum of squares (SST) is equal to 90, what is the value of the coefficient of determination?

A) 0.73

B) 0.55

C) 0.27

D) 1.2

ANSWER: C

Which of the following is true of R2?

A) R2 is also called the standard error of regression.

B) A low R2 indicates that the Ordinary Least Squares line fits the data well.

C) R2 usually decreases with an increase in the number of independent variables in a regression.

D) R2 shows what percentage of the total variation in the dependent variable, Y, is explained by the explanatory variables.

ANSWER: D

If an independent variable in a multiple linear regression model is an exact linear combination of other independent variables, the model suffers from the problem of _____.

A) perfect collinearity

B) homoskedasticity

C) heteroskedasticty

D) omitted variable bias

ANSWER: A

Exclusion of a relevant variable from a multiple linear regression model leads to the problem of _____.

A) misspecification of the model

B) multicollinearity

C) perfect collinearity

D) homoscedasticity

ANSWER: A

Which of the following correctly identifies a limitation of logarithmic transformation of variables?

A) Taking log of variables make OLS estimates more sensitive to extreme values in comparison to variables taken in level.

B) Logarithmic transformations cannot be used if a variable takes on zero or negative values.

C) Logarithmic transformations of variables are likely to lead to heteroskedasticity.

D) Taking log of a variable often expands its range which can cause inefficient estimates.

ANSWER: B

Which of the following correctly identifies an advantage of using adjusted R2 over R2?

A) Adjusted R2 corrects the bias in R2 .

B) Adjusted R2 is easier to calculate than R2 .

C) The penalty of adding new independent variables is better understood through adjusted R2 than R2 .

D) The adjusted R2 can be calculated for models having logarithmic functions while R2 cannot be calculated for such models.

ANSWER: C

A predicted value of a dependent variable:

A) Represents the difference between the expected value of the dependent variable and its actual value.

B) Is always equal to the actual value of the dependent variable.

C) Is independent of explanatory variables and can be estimated on the basis of the residual error term only.

D) Represents the expected value of the dependent variable given particular values for the explanatory variables.

ANSWER: D

A researcher tests for structural stability in the following regression model:

$y_t = \beta_1 + \beta_2 x_{2t} + \beta_3 x_{3t} + u_t$, The total sample of 200 observations is split exactly in half for the sub-sample regressions. Which would be the unrestricted residual sum of squares?

A) The RSS for the whole sample

B) The RSS for the first sub-sample

C) The RSS for the second sub-sample

D) The sum of the RSS for the first and second sub-samples

ANSWER: A

Which one of the following would be a plausible response to a finding of residual non-normality?

A) Use a logarithmic functional form instead of a linear one

B) Add lags of the variables on the right hand side of the regression model

C) Estimate the model in first differenced form

D) Remove any large outliers from the data.

ANSWER: D

What will be the properties of the OLS estimator in the presence of multicollinearity?

A) It will be consistent, unbiased and efficient

B) It will be consistent and unbiased but not efficient

C) It will be consistent but not unbiased

D) It will not be consistent

ANSWER: A

What would be then consequences for the OLS estimator if heteroscedasticity is present in a regression model but ignored?

A) It will be biased

B) It will be inconsistent

C) It will be inefficient

D) All of (a), (b) and (c) will be true.

ANSWER: C

If the value of Durbin-Watson's d stastic = 0, there is.....

A) No Auto-correlation

B) Positive Auto-correlation

C) Negative Auto-correlation

D) None of these

ANSWER: C

Which of the following statements is NOT TRUE about a regression model in thepresence of multicol-linearity

A) t ratio of coefficients tends to be significantly

B) R2 is high

C) OLS estimators are not BLUE

D) OLS estimators are sensitive to small changes in the data

ANSWER: C

Determine whether the following functions are concave or convex.

(i) $f(x)=\ln(x+1)$

(ii) $f(x,y)=x^2+2y^2$

A) The function (i) is convex for all $x \neq -1$ but (ii) the function is concave.

B) The function (i) is concave for all $x \neq -1$ but (ii) the function is convex.

C) The function (i) is concave for all $x \neq -1$ but for (ii) since the function isbi-vitiate then we can not determine the convexity and concavity nature of the function..

D) The function (i) is convex but (ii) the function is neither concave nor convex.

E) None of the above.

ANSWER: B

What do you understand by extreme values?

A) Extreme values are stationary points.

B) Extreme values are the critical values which obtained from the 1st order derivative of a given differentiable function.

C) Extreme values are points of stability.

D) Extreme values are points where concavity and convexity takes place

D) None of the above.

ANSWER: B

A firm faces the total revenue schedule: $TR = 600\,Q - \frac{1}{2}Q^2$ .what is the marginal revenue, when Q=100? When is the total revenue at its maximum & at what output? Does it have a stationary point? Is it convex or concave to the Origen?

A) MR=600-Q, at Q=100 the marginal revenue is 500; the total revenue reach at its maximum when Q=600 and it is a stationary point and the function is concave to the Origen.

B) MR=1200-Q, at Q=100 the marginal revenue is 1100; the total revenue reach at its maximum when Q=600 and it is a stationary point and the function is concave to the Origen.

C) MR=600-Q, at Q=100 the marginal revenue is 500; the total revenue reach at its maximum when Q=600 and it is a stationary point and the function is convex to the Origen.

D) MR=1200-Q, at Q=100 the marginal revenue is 1100; the total revenue reach at its maximum when Q=600 and it is a stationary point and the function is convex to the Origen.

E) None of the above.

ANSWER: A

Find the price elasticity of supply of the function $Q_s = 2P - 2$ when $P = 3$.

A) 2

B) 3

C) 1/3

D) ½

E) None of the above.

ANSWER: B

If total revenue, $TR=100-100Q^2$, then what is the marginal revenue?

A) $MR=100Q^2$

B) $MR=100Q$

C) $MR=200Q$

D) $MR=200Q^2$

E) None of the above.

ANSWER: E

Lagrangian multiplier is a/an:

A) MLP method.

B) OLS method.

C) Constraint optimization method.

D) Unconstraint optimization method.

E) None of the above.

ANSWER: C

Find the differential coefficient of $2x^3+3x^2+5x+30$

A) $6x^2+6x+5$

B) $6x+6x+5$

C) $6x^2+3x+5$

D) $2x+3x+5x+30$

ANSWER: A

For the function $f(x_1,x_2)=x_1x_2+5x_1+10x_2-0.5x_1^2-3x_2^2$ find the value of x_1 & x_2 , Which makes stationary and determine whether the function is maximum or minimum at the stationary (critical) point.

A) $x_1=3$ & $x_2=8$, points show point of max.

B) $x_1=8$ & $x_2=3$,points show point of max.

C) $x_1=2$ & $x_2=-3$, points show point of max.

D) $x_1=-4$ & $x_2=1$, points show point of max.

E) None of the above.

ANSWER: B

Find the value for x_1 & x_2 that maximize $f(x_1, x_2)=x_1^2 x_2$, subject to the constraint that $5x_1+2x_2=300$ .Determine the definiteness.

A) $x_1=40$ & $x_2=50$, the bordered Hessian matrix shows saddle at the critical point.

B) $x_1=50$ & $x_2=40$, the bordered Hessian matrix is negative definite at the critical point.

C) $x_1=40$ & $x_2=50$, the bordered Hessian matrix is positive definite at the critical point.

D) $x_1=50$ & $x_2=40$, the bordered Hessian matrix has inflection at the critical point.

E) None of the above.

ANSWER: C

For the difference equation $y_t-2y_{t-1}=1$ with initial condition $y_0=2$. Verify the qualitative nature of the system.

A) Oscillatory, convergent & stable.

B) Non-oscillatory, divergent & unstable.

C) Oscillatory, divergent & unstable.

D) Non-oscillatory, convergent & stable.

E) None of the above.

ANSWER: B

Consider a firm that produces & sells two products. Below is a model that represents the firm's profit maximization problem. Where Q_1 is quantity product one produces & sold and p_1 -s unit price of product one; Q_2 is quantity product two produces & sold and p_2 -s unit price of product two

model: maximize $P_1Q_1+P_2Q_2-3Q_1-2Q_2-100$ subject to $P_1=63-Q_1$ &

$P_2=82-5Q_2$. Find the local maximum values of profit.

A) local maximum values of profit is 1800

B) local maximum values of profit is 1080

C) local maximum values of profit is 1810

D) local maximum values of profit is 1280

E) None of the above.

ANSWER: B

$$y-xy-x\frac{dy}{dx}=0$$

Solve the equation

A) $y=e^{x(k-1)}$

B) $y=e^{xk-x}$

C) $y=xe^{k-x}$

D) $y=e^{k-x}$

E) None of the above.

ANSWER: C

Consider the two sector model $\frac{dy}{dt}=0.1(C+I-Y)$; $c=0.9Y+100$,I=300.find an expression for

y_t ,when $y_0=2000$ and verify the qualitative nature of the system.

A) $y_t = -2000e^{-0.01t} + 4000$, and then as $t \to \infty$ the system is stable which converges to the inter-temporal equilibrium.

B) $y_t = -200e^{-0.1t} + 400$, and then as $t \to \infty$ the system is stable which converges to the inter-temporal equilibrium.

C) $y_t = 2000e^{-0.01t} - 4000$, and then as $t \to \infty$ the system is stable which converges to the inter-temporal equilibrium.

D) $y_t = 1600e^{-0.1t} + 400$, and then as $t \to \infty$ the system is stable which converges to the inter-temporal equilibrium.

E) None of the above.

ANSWER: A

$$y_t = 5y_{t-1} - 6y_{t-2}$$

Solve the difference equation

A) $y_t = A(4)^t + B(6)^t$

B) $y_t = Ae^{2t} + Be^{3t}$

C) $y_t = A(2)^t + B(3)^t$

D) $y_t = A(2)^t - B(3)^t$

E) None of the above.

ANSWER: C

Which of the following factors contributed to the development of macroeconomics as a separate field of study?

A) The great depression and the need to understand its cause

B) The rise of behavior economics and its impact on decision making

C) The emergency of digital technology and their impact on the economy

D) The decline of the traditional industries and the need to create new jobs

ANSWER: A

The classical economists argued that cyclical unemployment would be eliminated by

A) Increasing government spending to increase aggregate demand

B) Increasing the money supply to stimulate investment spending

C) Self-correcting market forces stemming from flexible price and wage

D) Maintaining the growth of the money supply at a constant rate

ANSWER: C

The prime rate is

A) The interest rate charged on overnight loans between commercial banks

B) The interest rate charged by the central bank on loans to commercial bank

C) It is equals with the inflation rate

D) The interest rate charged on credit-worthy borrowers.

ANSWER: D

Which of the following is not a component of the incomes approach to GDP?

A) Net exports

B) Wages and salaries

C) Corporate profits

D) Proprietors' income

ANSWER: A

Which of the following is the definition for the real supply of money?

A) The stock of money measured in terms of goods, not birr or dollars.

B) The stock of high-powered money only.

C) The actual quantity of money, rather than the officially reported quantity.

D) The ratio of the real GDP to the nominal money supply.

ANSWER: A

A reduction in government spending will cause:

A) An upward shift in the LM curve.

B) A leftward shift in the IS curve.

C) A downward shift in the LM curve.

D) A rightward shift in the IS curve.

ANSWER: B

According to the LS – LM model, an increase in money supply will

A) Shift the IS curve to the right

B) Shift the IS curve to the left

C) Shift the LM curve the right

D) Shift the LM curve the left

ANSWER: C

What does the Phillips curve illustrate?

A) The positive relationship between unemployment and inflation

B) The negative relationship between unemployment and inflation

C) The positive relationship between unemployment and economic growth

D) The positive relationship between government spending and economic growth

ANSWER: A

What is the main assumptions of the Keynesian liquidity preference theory?

A) Individuals only hold money to make transactions

B) Individuals hold money for both transactions and speculative purposes

C) Individuals hold money for speculative purposes only

D) None of the above

ANSWER: B

When there is perfect capital mobility in a small open economy, which one of the following is true?

A) Interest rate will be higher than to those in the rest of the world

B) Interest rate will be lower than to those in the rest of the world

C) Interest rates will be equal to those in the rest of the world

D) None of the above

ANSWER: C

Which one of the following is incorrect about life time hypothesis?

A) The hypothesis emphasizes that income varies somewhat predictably over a person's life

B) Consumers use saving and borrowing to smooth their consumption over their lifetimes.

C) Consumption depends on both income and wealth.

D. Average current incomes rather than their lifetime incomes

ANSWER: D

The permanent-income hypothesis suggests that people will base their consumption on their?

A) Permanent incomes more than their temporary incomes

B) Temporary incomes more than their Permanent incomes

C) Both on their Temporary and Permanent incomes

D) Consumption depends primarily on temporary income.

ANSWER: A

Laibson suggests that psychological influences are crucial for understanding customer behavior because of?

A) People have a strong desire for instant gratification that lead them to save less.

B) People have a strong desire for steady gratification that lead them end up saving more.

C) People have time-consistent behavior regarding their consumption behavior.

D) People save and borrow, consumption depends on the consumer's lifetime resources.

ANSWER: A

Hall's random-walk hypothesis combines the permanent-income hypothesis with

A) The assumption that consumers have rational expectations about future income.

B) The assumption that consumers have Adaptive expectations about permanent income.

C) The assumption that consumers have rational expectations about transitory income.

D) The assumption that consumers have Adaptive expectations about current income.

ANSWER: A

Which one following is not Keynes's conjectures about the consumption function?

A) Marginal propensity to save

B) Average propensity to consume

C) Income is the primary determinant of consumption

D) Interest rate does not have an important role

ANSWER: A

Real investment spending includes three broad components except

A) Business fixed investment

B) Residential investment

C) Inventory investment

D) Portfolio Investment

ANSWER: D

Which statement is correct about business fixed investment spending?

A) It refers to the amount spent by firms to add to the stock of capital over a given period.

B) It refers to the purchase of new houses by people to live in and/or to rent.

C) It includes all unused or unsold goods stored by firms.

D) It represents the smallest share of investment spending.

ANSWER: A

Which of the following factors does Tobin's *q* ratio not reflect?

A) Marginal rate of intertemporal substitution.

B) The "animal spirits" of entrepreneurs.

C) The link between anticipated future productivity increases and current share prices.

D) The interest rate.

ANSWER: A

How the real interest rate and credit conditions affect inventory investment?

A) When the real interest rate rises and holding inventories becomes less costly and firms increase their stock.

B) Real interest rate measures the opportunity cost of holding inventories.

C) Real interest rate does not measure the opportunity cost of holding inventories.

D) Firms hold a good in inventory and sells it today rather than selling it tomorrow.

ANSWER: B

Which one of the following is not the reason to hold inventory?

A) Production smoothing.

B) Inventories as a factor of production.

C) Stock-out avoidance.

D) Expecting the expected.

ANSWER: D

Which of the following variables would be affected if the supply of money would change?

A) Unemployment

B) Price level

C) Standards of living

D) Real growth

ANSWER: B

When the financial system lacks the capability of making judgements about investment Opportunities due to asymmetric information, leading to potentially bad credit risks lending is subject to

A) Adverse selection.

B) Moral hazard.

C) Social goods.

D) Hyperinflation.

ANSWER: A

The collective labour supply curve is less steep if there is an outward shift in the demand for labour and

A) Unions demand improved working conditions.

B) Unions have a stronger preference for high wages than low unemployment.

C) Unions have a stronger preference for reducing unemployment than increasing wages.

D) Employers offer to pay higher wages for longer hours of work.

ANSWER: C

Compared to the individual labour supply curve, the aggregate labour supply curve is

A) More elastic because demand is heterogeneous.

B) Less elastic because demand is heterogeneous.

C) More elastic because of the possibility of moving between being out of the labour force and being in the labour force.

D) Less elastic because of transitions between being out of the labour force and being in the labour force

ANSWER: C

The individual labour supply curve

A) Shifts downwards if workers' preference for leisure increases.

B) Shifts to the left if there is technological progress in production.

C) Shifts to the right if there is technological progress in production.

D) Is not affected by technological progress in production.

ANSWER: D

Which of the following policies would NOT be expected to reduce the equilibrium unemployment rate?

A) Reducing the duration of full employment insurance benefits.

B) Increasing statutory minimum wages.

C) Providing relocation subsidies to unemployed workers.

D) None of the above policies would work to reduce frictional unemployment.

ANSWER: B

According to the analysis of the British economist John Maynard Keynes,

A) Markets coordinate supply and demand so that a policy of laissez-faire would prevent recessions.

B) Economic fluctuations were the cumulative result of mistakes made by businesses and households in an uncertain world.

C) Government demand could be used to smooth fluctuations in aggregate output and income.

D) Supply creates its own demand through the circular flow of economic activity.

ANSWER: C

Endogenous growth theory implies

A) That investment in human capital, innovation, and knowledge are significant contributors to economic growth

B) That investment in technology, capital, and output are significant contributors to economic growth

C) Poorer countries are bound to experience explosive growth which will propel their economic output far beyond that of rich countries

D) Directly related to the capital/output ratio and inversely related to savings.

ANSWER: A

The Harrod-Domar growth model suggests that growth is

A) Directly related to savings and inversely related to the capital/output ratio.

B) Directly related to the capital/output ratio and inversely related to savings.

C) Indirectly related to savings and the capital/output ratio.

D) Directly related to savings and the capital/output ratio

ANSWER: D

In the Solow model, if capital is in the steady state, output:

A) Will continue to grow.

B) Is also in the steady state.

C) Will continue to grow, but its rate of growth will slow down.

D) Will decline, but its rate of growth will be positive.

ANSWER: B

In the Lewis model, what will cause an expansion in modern sector employment?

A) A reinvestment of profits by capitalists that allows production to expand

B) Interventions by the State to expand employment

C) An increase in technology

D) An increase in the surplus labor

ANSWER: A

Which of the following about strategy of balanced growth is right?

A) Simultaneous investment in all sectors

B) All sectors are independent.

C) Deliberate imbalance in favor of some sectors

D) Deliberate balance in favor of some sectors

ANSWER: A

Which one of the following was given a central place by Schumpeter in his theory of development?

A) Capital accumulation

B) Role of the Government

C) Need for balanced growth

D) Role of innovations

ANSWER: D

The Solow Model implies that countries with small initial capital stocks should grow rapidly. This implies that:

A) Poorer countries should eventually “catch-up” to richer countries (conditional convergence)

B) Poorer countries are bound to experience explosive growth which will propel their economic output far beyond that of rich countries

C) The growth rates between rich and poor countries is bound to diverge

D) The growth rates between rich and poor countries is bound to be disproportional

ANSWER: A

Which growth model inspired the use of capital-output ratio for development planning?

A) The Harrod-Domar model

B) Solow's model

C) Kaldor's model

D) Feldman's model

ANSWER: A

As an aid to development planning, much use is being made today of the input-output analysis. Who first used it?

A) H. Liebenstein

B) W.W.Leontief

C) W.A.Lewis

D) A.O.Hirshman

ANSWER: B

Which one of the following is not characteristics of African economies?

A) Economic growth coexists with severe poverty

B) Considerable disparities between regions and countries

C) Resource exploitation and economic diversification are both being pursued

D) Economic growth with high employment and low inflation

ANSWER: D

Capital formation in underdeveloped countries is a major bottleneck. The reason can be

A) Small size of market with no incentive for investment

B) Low level of income

C) Demonstration effect

D) All the above

ANSWER: B

Which of the following is not applicable in multivariate time series models?

A) ohansen cointegration tests

B) Vector error correction model

C) Eager – Granger two stages approach

D) All

ANSWER: C

Which of the following statement is/are not true?

A) Running logit model means estimation of the log odds of the independent variable.

B) Dummy variables useful tools in econometrics, since often interested in variables that are qualitative rather than quantitative.

C) The logistic model can be is estimated by maximum likelihood estimation.

D) All

ANSWER: A

Suppose we get the following regression results from ANCOVA models, where Y is hourly income (in birr), X years of education and Di an intercept dummy for gender which is 1 for men.

$$Y_i = 55.9 + 21.9D_i + 2.4X_i$$
$$(8.16) \quad (4.30) \quad (0.63)$$

Then, what will be the income differential of men for the same level of education?

A) 55.9

B) 77.8

C) 21.9

D) 2.4

ANSWER: C

Which of the following model can't be helpful for predict timeseries variable in econometrics?

A) Mixed logit model

B) VAR model

C) RIMA model

D) ARMA model

ANSWER: A

Which of the following statement is/are not true?

A) In logistic regression, we can estimate natural logarithm of the odds for ($Y = 1$) changes for one unit change in X.

B) Logit is not bounded but probability is bounded.

C) Pseudo R^2 is a measure of goodness of fit in logit model.

D) The odd ratio is less than one, there is a positive relationship between odds of the dependent variable getting 1 and change in the given independent variable.

ANSWER: D

One of the following is the limitation of linear probability model?
A) The error term may not be normally distributed.

B) The variance of the error term may not be constant.

C) The predicted probabilities might lie outside the logical band of probability.

D) All

ANSWER: D

In the context of simultaneous equations modelling, which of the following statements is true concerning an endogenous variable?
A) Reduced form equations will contain only endogenous variables on the RHS.

B) The values of endogenous variables are determined outside the system.

C) Reduced form equations will not contain any endogenous variables on the RHS.

D) There can be fewer equations in the system than there are endogenous variables.

ANSWER: C

In which of the following panel data that each cross-sectional unit has the same number of time series observations?

A) Unbalanced panel data

B) Balanced panel data

C) Long panel data

D) Macro panel data

ANSWER: B

Logistic regression is used when you want to:
A) Predict a dichotomous variable from continuous or dichotomous variables.

B) Predict a continuous variable from dichotomous variables.

C) Predict any continuous variable from several other categorical variables.

D) Predict a continuous variable from dichotomous or continuous variables.

ANSWER: A

The odds ratio is:
A) The ratio of the probability of an event not happening to the probability of the event happening.

B) The probability of an event occurring.

C) The ratio of the odds after a unit change in the dependent variable for a unit change in the independent variable.

D) The ratio of the probability of an event happening to the probability of the event not happening.

ANSWER: C

Which of the following statement is less likely true.

A) The disadvantage of differencing is that the process loses one observation each time.

B) A non-stationary process with a deterministic trend has become stationary after detrending.

C) Dickey-Fuller unit root test is valid only if the series is an AR (1) process.

D) Many time series macroeconomic variables are non-stationary after first differencing.

ANSWER: D