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Examination: 1. Course Code - Ph.D.

2. Field of Study - REGIONAL DEVELOPMENT:

Economics (ECNH)

SECTION 1 - SECTION 1**Question No.1 (Question Id - 95)**

The IS curve will not shift when there is a :

- (A) reduction in government spending.
- (B) reduction in consumer confidence.
- (C) **reduction in the interest rate. (Correct Answer)**
- (D) increase in the interest rate.

Question No.2 (Question Id - 43)

If the function $f(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$, $-\infty < x < +\infty$ is symmetrically distributed about 0, then :

- (A) **$f(x) = f(-x)$ (Correct Answer)**
- (B) $f(x) = xf(-x)$
- (C) $f(x) = \int x dx$
- (D) $f(x) = e^{1/2x^2}$

Question No.3 (Question Id - 70)

In a situation of perfect income inequality, the Gini coefficient in a country would be :

- (A) Infinity
- (B) **1 (Correct Answer)**
- (C) 5
- (D) 0

Question No.4 (Question Id - 1)

Suppose there are two players with same initial wealth $W = 50$. The players' utility function for the money outcome are as follows : Player 1 : $U_1(M) = \sqrt{M}$; Player 2 : $U_2(M) = M^2$. Examine whether the players (1 and 2) will play the lottery. The players are both offered an option of playing a fair lottery with two possible outcomes as follows.

Outcome	Probabilities
- ₹ 10	0.75
₹ 30	0.25

- (A) Both the players will play the lottery
- (B) Player 1 will play the lottery and player 2 will not
- (C) **Player 1 will not play the lottery and player 2 will play the lottery (Correct Answer)**
- (D) Both the players will not play the lottery

Question No.5 (Question Id - 5)

The expenditure function of a Cobb Douglas preference relation consisting of two commodities (x and y) are given by :

$$E(P_1, P_2, U) = 2\sqrt{P_1 P_2} U$$

By using the derivative property of expenditure function (Shephard's Lemma) the demand equation is given by :

- (A) $\frac{\sqrt{P_2}}{\sqrt{P_1}} U$: measures the Hicksian demand function for commodity x **(Correct Answer)**
- (B)

$\sqrt{\frac{P_2}{P_1}}$ U : measures the Marshallian demand function for commodity y

(C) $2\sqrt{P_1 P_2}$: measures the compensated demand function for commodity x

(D) $\sqrt{\frac{P_2}{P_1}}$ U : measures the Hicksian demand function for commodity y

Question No.6 (Question Id - 96)

The components of aggregate demand is/are :

- A. Household consumption expenditure
- B. Government final consumption expenditure
- C. Private and public investment expenditure

Select the code given below.

- (A) A and C
- (B) A and B
- (C) B and C
- (D) **A, B and C (Correct Answer)**

Question No.7 (Question Id - 87)

If nominal GDP is ₹ 1100 lakh and real GDP is ₹ 1000 lakh, the GDP deflator is :

- (A) **1.11 (Correct Answer)**
- (B) 9.09
- (C) 90.91
- (D) 110

Question No.8 (Question Id - 44)

Innovation in production process leads to :

- (A) **Downward shift in isoquant (Correct Answer)**
- (B) Upward shift in isoquant
- (C) Movement along the isoquant
- (D) No shift in isoquant

Question No.9 (Question Id - 100)

Suppose there are two commodities X and Y and the consumer's expenditure function is given by :

$e(P_X, P_Y, U) = \frac{U(P_X P_Y)}{P_X + P_Y}$. What would be the indirect utility function ?

- (A) $v(P_X, P_Y, M) = \frac{M(P_X + P_Y)}{(P_X P_Y)}$ **(Correct Answer)**
- (B) $v(P_X, P_Y, M) = M(P_X + P_Y)$
- (C) $v(P_X, P_Y, M) = M(P_X^\alpha P_Y^{1-\alpha})$
- (D) $(P_X, P_Y, M) = \frac{M(P_X P_Y)}{P_X + P_Y}$

Question No.10 (Question Id - 66)

Horizontal LM curve implies the situation :

- (A) Weak response of demand for money to interest rates
- (B) **Liquidity trap (Correct Answer)**
- (C) Money market equilibrium
- (D) Product market equilibrium

Question No.11 (Question Id - 98)

Calculate the dead weight loss to monopoly when the demand function is given by $Q = 100 - P$ and $C(Q) = 4Q$:

- (A) 576

- (B) 2204
(C) 4608
(D) **1152 (Correct Answer)**

Question No.12 (Question Id - 47)

Under the conditions of full employment and positively sloped aggregate supply curve, an increase in government spending will lead to :

- (A) Decrease in output and price level
(B) Decrease in output and real wage
(C) Increase in output and real wage
(D) **Increase in output and price level (Correct Answer)**

Question No.13 (Question Id - 62)

Suppose a linear consumption function is given as $C = 70 + 0.8Y$. Investment (I) is 120 and net exports is zero. Find the equilibrium output.

- (A) 980
(B) **950 (Correct Answer)**
(C) 920
(D) 910

Case Study - 14 to 15 (Question Id - 17)

Suppose A and B are two events and $P(A) = \frac{1}{2}$; $P(B) = \frac{1}{3}$; $P(AB) = \frac{1}{4}$.

Question No.14 (Question Id - 18)

State whether the events A and B are independent events ?

- (A) Information provided is not sufficient to conclude.
(B) The events A and B are independent events provided their conditional probabilities are not equal.
(C) **No (Correct Answer)**
(D) Yes

Question No.15 (Question Id - 19)

What is the conditional probability (A/B) ?

- (A) $\frac{3}{4}$ **(Correct Answer)**
(B) $\frac{2}{3}$
(C) $\frac{1}{2}$
(D) $\frac{1}{3}$

Question No.16 (Question Id - 53)

In the Solow model of economic growth :

- (A) Technical progress is exogenous and capital augmenting
(B) Technical progress is endogenous and labour augmenting
(C) **Technical progress is exogenous and labour augmenting (Correct Answer)**
(D) Technical progress is endogenous and capital augmenting

Question No.17 (Question Id - 81)

Which of the following will occur if there is an increase in taxes ?

- (A) **The IS curve shifts and the economy moves along the LM curve. (Correct Answer)**
(B) The LM curve shifts and the economy moves along the IS curve.
(C) Output will change causing a change in money demand and a shift of the LM curve.
(D) Neither the IS nor the LM curve shifts.

Question No.18 (Question Id - 7)

If the cost function is $C(w, r, Q) = Qw^\alpha r^\beta$, where w, r are the input prices and Q is the output. Following is

true about the parameters of the cost function :

- (A) $0 \leq \alpha, \beta \leq 1 ; \alpha + \beta = 1$
(B) $\alpha < 1, \beta < 1 ; \alpha + \beta < 1$
(C) $\alpha > 1, \beta < 1 ; \alpha + \beta = 1$
(D) $0 < \alpha, \beta < 1 ; \alpha + \beta = 1$ (Correct Answer)

Question No.19 (Question Id - 82)

As per the Say's Law of Markets :

- A. The ability to purchase something depends on the ability to produce and thereby generate income
B. To have the means to buy, a buyer must first have produced something to sell. Thus, the source of demand is production, not money itself
C. Production is the key to economic growth and prosperity and the government policy should encourage (but not control) production rather than promoting consumption

Choose the **correct** option.

- (A) A and B
(B) A and C
(C) B and C
(D) **A, B and C (Correct Answer)**

Question No.20 (Question Id - 42)

Consider the following function :

$$\ln y = \beta_0 + \sum_{p=1}^m \beta_p \ln x_p + \sum_{p=1}^m \sum_{q=1}^m \beta_{pq} 1/2 \ln x_p \ln x_q + u$$

If $\beta_{pq} = 0, \forall p, q$, then the above function becomes :

- (A) Linear production function
(B) **Cobb-Douglas production function (Correct Answer)**
(C) Transcendental production function
(D) CES production function

Question No.21 (Question Id - 24)

The Jarque Bera test is a :

- (A) Model specification test
(B) **Residual Normality test (Correct Answer)**
(C) Test of unbiasedness of estimators
(D) Test of goodness of fit for the model

Question No.22 (Question Id - 49)

Consider the following statements.

- A. Most woman workers in India are engaged in low paying and low productive works
B. Woman workers constitute a high proportion of informal workers category
C. India has the lowest gender gap in median earnings of employees

Which of the above statement(s) is/are **incorrect** ?

- (A) **A and B (Correct Answer)**
(B) B only
(C) C only
(D) B and C

Question No.23 (Question Id - 51)

In state capitalism, which among the following features are **true** ?

- A. All means of production are owned by the state
B. Institutions of private property and inheritance are shrunk to the minimum necessary
C. Market mechanism is nearly frozen

D. Objective of state planning is maximization of social welfare

Select the **correct** option given below.

- (A) A, C and D
- (B) B, D and A
- (C) B, C and D
- (D) **A, B, C and D (Correct Answer)**

Question No.24 (Question Id - 27)

One should probably avoid log log specification in the regression model if :

- (A) **If it is possible for Y or X to take on zero or negative values. (Correct Answer)**
- (B) The elasticity of Y with respect to X is one.
- (C) You have values of Y which are large and values which are small.
- (D) If you desire results using linear model.

Question No.25 (Question Id - 20)

Is the following function $f(x)$ a probability density function (pdf) ?

$$f(x) = \begin{cases} 2x; & 0 < x \leq 1 \\ 4-2x; & 1 < x \leq 2 \\ 0; & \text{elsewhere} \end{cases}$$

- (A) **No (Correct Answer)**
- (B) Yes
- (C) Yes, because the conditions of pdf are satisfied
- (D) The second condition of pdf is satisfied but the first condition is not.

Question No.26 (Question Id - 74)

If 's' is the saving rate and 'v' is the capital output ratio, then 'g' the rate of growth in Harrod Domar model is represented by :

- (A) v/s
- (B) sv
- (C) none
- (D) **s/v (Correct Answer)**

Question No.27 (Question Id - 16)

The probability density function (pdf) of a continuous random variable is :

$$f(x) = \gamma(x - 1)(2 - x); 1 \leq x \leq 2$$

What would be the value of γ ?

- (A) 4
- (B) 5
- (C) **6 (Correct Answer)**
- (D) 7

Question No.28 (Question Id - 50)

Given that high powered money is ₹ 800, reserve ratio is 0.1 and currency deposit ratio is 0.8, the value of money multiplier and money supply will be :

- (A) 5 and 4000
- (B) **2 and 1600 (Correct Answer)**
- (C) 2.5 and 2000
- (D) 5.5 and 4400

Question No.29 (Question Id - 89)

If all prices in one country (country X) are higher than all prices in another country (Y) when compared at the wage rates that happen to prevail in the two countries, and if the countries share the same currency, then if the nominal wage rate in country Y remains fixed :

- (A) **The nominal wage rate in country X will have to fall (Correct Answer)**
- (B) Unemployment must be higher in country Y than in country X
- (C) The real wage in country X must be higher than in country Y

(D) Workers in country X must be less productive than workers in country Y

Question No.30 (Question Id - 23)

When the estimated slope coefficient in the simple regression model $\hat{\beta}_1$ is equal to zero then :

- (A) $R^2 = 0$ (Correct Answer)
(B) $R^2 = 1$
(C) $R^2 = Y$
(D) $0 \leq R^2 \leq 1$

Question No.31 (Question Id - 25)

Chi square test is used for the significance of the test statistics for :

- (A) Mean for large sample test
(B) Comparison of Mean of two groups
(C) Mean for small sample test
(D) Goodness of fit (Correct Answer)

Question No.32 (Question Id - 94)

Let the net domestic product at market prices is ₹ 25,000 crores, indirect taxes is ₹ 1,500 crores and subsidy is ₹ 500 crores. Calculate net domestic product at factor cost.

- (A) ₹ 25,000 crores
(B) ₹ 20,000 crores
(C) ₹ 24,000 crores (Correct Answer)
(D) None of the above

Question No.33 (Question Id - 60)

Which of the following statement violates the assumptions of classical linear regression model ?

- A. $u \sim N(0, \sigma_u^2)$
B. Error term in one period is related to its value in any other period
C. Variance of error term is constant in each period and for all values of X
D. Independent variable is correlated with error term

Choose the **correct** choice from given below.

- (A) A and B
(B) B and C
(C) C and D
(D) B and D (Correct Answer)

Question No.34 (Question Id - 101)

Suppose the Von Neumann-Morgenstein utility function of an individual is given by : $U(w) = \alpha + \beta w + \gamma w^2$, w is the wealth of the individual. Following which restrictions would be appropriate on parameters α , β , and γ if the individual is risk averse ?

- (A) $\alpha > 0, \beta > 0$ and $\gamma > 0$
(B) $\beta < 0$ and $\gamma > 0$
(C) $\alpha < 0, \beta > 0$ and $\gamma > 0$
(D) $\beta > 0$ and $\gamma < 0$ (Correct Answer)

Question No.35 (Question Id - 86)

The inverse demand curve for good A is given by the equation $PA = 10 - QA/10$, and the supply curve is perfectly elastic (horizontal) at \$1. Good A is taxed at \$2 per unit. Good B (which is independent of good A) has an inverse demand curve $PB = 5 - QB/20$, and is also perfectly elastically supplied at \$1. Good B is untaxed. Calculate how much tax revenue is collected and what is the excess burden of the \$2 tax on A ?

- (A) Tax revenue 150 and excess burden 30
(B) Tax revenue 140 and excess burden 20 (Correct Answer)

- (C) Tax revenue 130 and excess burden 10
(D) Tax revenue 110 and excess burden 40

Question No.36 (Question Id - 90)

Movement from an inefficient allocation to an efficient allocation in Edgeworth Box will :

- (A) Increase the utility of all individuals
(B) Increase the utility of atleast one individual, but may decrease the level of utility of another person
(C) **Increase the utility of atleast one individual, but cannot decrease the utility of any individual (Correct Answer)**
(D) Decrease the utility of all individuals

Question No.37 (Question Id - 83)

If international trade takes place as a result of comparative advantage, the following effect is true among the participating countries :

- (A) Inequality among households will be reduced
(B) All individuals in each country will be better off
(C) **The average well-being of people in both countries will increase (Correct Answer)**
(D) Both countries will grow faster over time

Question No.38 (Question Id - 9)

Consider the two variable regression equation, where the regression coefficients are β_0 and β_1 and standard errors are $se(\beta_0)$, $se(\beta_1)$. What is the implication on the estimated coefficients β_0 and β_1 if the error variance σ^2 is very large ?

- (A) The estimated values of β_0 and β_1 are not influenced by the larger error variance σ^2 .
(B) The estimated values of β_0 and β_1 will be more precise.
(C) The estimated values of β_0 will not be affected but the estimated values of β_1 will be less precise.
(D) **The estimated values of β_0 and β_1 will be less precise. (Correct Answer)**

Question No.39 (Question Id - 40)

The weather forecasts say that there is 60% chance of rain today and 30% of chance of rain tomorrow. What is the chance of rain on both the days ?

- (A) 0.12
(B) **0.18 (Correct Answer)**
(C) 0.90
(D) 0.21

Question No.40 (Question Id - 61)

Which of the following are true about R^2 and \bar{R}^2 in a linear regression model ?

- (a) When $k=1$, $R^2 = \bar{R}^2$
(b) When $k > 1$, $R^2 > \bar{R}^2$
(c) When $k > 1$, $\bar{R}^2 > R^2$
(d) When n is large, R^2 and \bar{R}^2 differ very much

Choose the correct answer.

- (A) A and C
(B) B, C and D
(C) **A and B (Correct Answer)**
(D) C and D

Question No.41 (Question Id - 37)

Find the solution to the system of linear homogeneous equations :

$$\begin{aligned} 6x + 3y - z &= 0 \\ -4x + 3y + z &= 0 \\ 5x - z &= 0 \end{aligned}$$

- (A) Trivial solution : $x = y = z = 0$
- (B) Unique solution exists : $x = \frac{1}{2}$; $y = -1$; $z = 0$
- (C) No solution exists
- (D) **x, y, z are having infinite number of solutions (Correct Answer)**

Case Study - 42 to 46 (Question Id - 29)

Assume that the inverse demand function faced by two Cournot duopolists : $P(q_1 + q_2) = 100 - Q = 100 - (q_1 + q_2)$. Assume that the firms are symmetric with equal constant marginal cost of 25, so that $C_1(q_1) = 25q_1$ and $C_2(q_2) = 25q_2$.

Question No.42 (Question Id - 30)

What is the optimal output of the two firms ?

- (A) $q_1 = q_2 = 45$
- (B) **$q_1 = q_2 = 25$ (Correct Answer)**
- (C) $q_1 = 75$; $q_2 = 30$
- (D) $q_1 = q_2 = 30$

Question No.43 (Question Id - 31)

What is the equilibrium market price faced by the two firms ?

- (A) $P = 10$
- (B) **$P = 50$ (Correct Answer)**
- (C) $P = 13$
- (D) $P = 48$

Question No.44 (Question Id - 32)

What is the firm level equilibrium profit ?

- (A) (550, 550)
- (B) (750, 750)
- (C) (725, 725)
- (D) **(625, 625) (Correct Answer)**

Question No.45 (Question Id - 33)

Suppose both the duopolists collude in order to maximize joint profit and decide to share equally between them. What would be the equilibrium output under collusion ?

- (A) $Q = 40$
- (B) $Q = 35$
- (C) **$Q = 37.5$ (Correct Answer)**
- (D) $Q = 42.5$

Question No.46 (Question Id - 34)

Suppose the duopolists collude in order to maximize joint profit, and decide to share equally between them. What would be the equilibrium price under collusion ?

- (A) **$P = 62.5$ (Correct Answer)**
- (B) $P = 58.5$
- (C) $P = 45.5$
- (D) $P = 65.5$

Question No.47 (Question Id - 35)

Does the following system of linear equations are linearly independent, linearly dependent or inconsistent ?

$$\begin{array}{r} 2x + y - z = 10 \\ y + 2z = 4 \\ -x = 0 \end{array}$$

- (A) **Linearly independent (Correct Answer)**
- (B) Linearly dependent
- (C) Inconsistent system of equation
- (D) Linearly dependent and having infinite number of solutions

Question No.48 (Question Id - 38)

The estimated production function for sample of wheat farmers is given as $Y = aX_1^{0.7} X_2^{0.5}$. Where, Y is wheat yield, X_1 is fertilizer and X_2 is labour. Some characteristics of the above production function are given below.

- A. Constant returns to scale
- B. Increasing returns to scale
- C. Constant elasticity of substitution
- D. Decreasing returns to scale
- E. Varying elasticity of substitution

Choose the correct options given below.

- (A) A and B
- (B) B and C (Correct Answer)
- (C) C and D
- (D) C and E

Question No.49 (Question Id - 71)

If the distribution of income in country A is (1, 2, 2, 3, 5), and in country B is (1, 1, 2, 3, 5), the poverty line in both countries is 2.5, going by Lorenz curve, which country has more inequality ?

- (A) Country A
- (B) Country B
- (C) Inequality is the same in A and B
- (D) Cannot say from the given information (Correct Answer)

Question No.50 (Question Id - 6)

The relationship between the coefficient of determination R^2 (unadjusted) and \bar{R}^2 (adjusted) in the K variable multiple regression case, with sample size of n is given by :

- (A) $\bar{R}^2 = 1 - \frac{n-1}{n-k}(1-R^2)$ (Correct Answer)
- (B) $\bar{R}^2 = 1 - \frac{n-1}{n-k}(R^2)$
- (C) $\bar{R}^2 = (1-R^2) \frac{n-1}{n-k} - (k-1)$
- (D) $\bar{R}^2 = \frac{n-1}{n-k}(1-R^2)$

Question No.51 (Question Id - 8)

Suppose the utility function : $U(x, y) = x^{1/2} y^{1/2}$, with income $M = 72$ and prices of two commodities P_x, P_y . The price of y $P_y = 1$ and the price of x P_x changes from 9 to 4. The Marshallian or the ordinary demand functions are : $x(P_x, P_y, M) = \frac{M}{2P_x}$ and $y(P_x, P_y, M) = \frac{M}{2P_y}$. Calculate the income effect (IE) and the substitution effect (SE).

- (A) SE = 3 ; IE = 2
- (B) SE = 6 ; IE = 6
- (C) SE = 6 ; IE = 3
- (D) SE = 2.5 ; IE = 2.5 (Correct Answer)

Question No.52 (Question Id - 21)

Suppose a continuous random variable x follows uniform distribution in the range (2, 7). What is the probability of

$P(x = 4.5)$?

- (A) 0.38
- (B) 0.33
- (C) 0.45

(D) 0.00 (Correct Answer)

Question No.53 (Question Id - 97)

If the Marginal Propensity to Consume (MPC) is 0.50, the value of the spending multiplier is :

- (A) 0.5
(B) 1.0
(C) 2.0 (Correct Answer)
(D) 5.0

Question No.54 (Question Id - 69)

A supply side vicious circle of poverty suggests that poor nations remain poor because :

- A. Savings remains low
B. Investment remains low
C. There is a lack of effective government

Choose the **correct** option.

- (A) C only
(B) A and B (Correct Answer)
(C) B and C
(D) A and C

Question No.55 (Question Id - 56)

Consider the following four regression equations. Which regression equation of the following has the elasticity of Y w.r.t. X is 0.25 ?

- (A) $Y = 25 + 0.25X$
(B) $Y = 25 + 0.25\ln X$
(C) $\ln Y = 25 + 0.25\ln X$ (Correct Answer)
(D) $\ln Y = 0.25 + 2.5\ln X$

Question No.56 (Question Id - 75)

The supply curve of labour to industry is horizontal as long as :

- (A) The marginal product of labour in agriculture is less than the average product of Labour
(B) The marginal product of labour in agriculture is less than the average product of labour in industry
(C) There are diminishing returns to labour in agriculture
(D) The marginal product of labour in agriculture is zero (Correct Answer)

Question No.57 (Question Id - 46)

Which of the followings is the source of market failure ?

- A. Under pricing
B. Presence of externalities
C. Presence of government interventions
D. Oversupply of goods

Select the appropriate codes given below.

- (A) A only
(B) B only (Correct Answer)
(C) C only
(D) A and D

Question No.58 (Question Id - 10)

Suppose $z = f(x, y) = (x^2 - 3y)(x - 4)$, what would be the definiteness of the Hessian matrix H ?

- (A) Positive definite
(B) Positive semi-definite
(C) Negative definite

(D) Indefinite (Correct Answer)

Question No.59 (Question Id - 58)

A time series is said to be stationary if its :

- (A) Mean, variance and covariance vary overtime
(B) Mean, variance and covariance are constant overtime (Correct Answer)
(C) Mean reversion is not observable
(D) Variance vary overtime

Question No.60 (Question Id - 103)

For a stratified random sampling procedure, which of the following should hold true ?

- A. Units within the group are heterogeneous
B. Units within the group are homogenous
C. Mean of the groups same
D. Means of the groups are widely different

Choose the correct option.

- (A) A and B
(B) B and C
(C) A and C
(D) B and D (Correct Answer)

Case Study - 61 to 62 (Question Id - 13)

Consider a prisoner's dilemma game where the two convicts are simultaneously deciding on whether to confess or not confess a crime, which has no direct eye witness. So the convicts' strategies are 'Confess' and 'Not to Confess'. The payoffs are negative numbers in terms of years of imprisonment. The payoff matrix is given as follows which would yield Nash equilibrium at (Confess, Confess) :

Convict 1	Convict 2	
	Not Confess	Confess
Not Confess	$(-x, -x)$	$(-z, 0)$
Confess	$(0, -z)$	$(-y, -y)$

Question No.61 (Question Id - 14)

What would be the appropriate parametric restrictions on (x, y and z) for a Nash equilibrium (Confess, Confess) to exist (consider the absolute values) ?

- (A) $x > z > y$
(B) $y > z > x$
(C) $z > x > y$
(D) $z > y$ (Correct Answer)

Question No.62 (Question Id - 15)

Suggest the numerical values for payoff (- y, - y) and (- z, 0), which would yield a Nash equilibrium at (Confess, Confess).

- (A) (- 6, - 6), (- 13, - 13)
(B) (- 5, - 5) and (- 3, 0)
(C) (- 5, - 5) and (- 9, 0) (Correct Answer)
(D) (- 2, - 2) and (0, - 9)

Question No.63 (Question Id - 28)

The assumption of multicollinearity means that :

- (A) There should be no correlation among regressors
(B) There should be linear relationship among regressors (Correct Answer)
(C) There should be no non-linear relationship among the regressors.
(D) None of the statement is correct.

Question No.64 (Question Id - 84)

The following equations describe an economy :

$$C = 10 + 0.5Y;$$

$$I = 190 - 20r.$$

The equation for IS curve will be :

- (A) **Y = 400 - 40r (Correct Answer)**
 (B) Y = 500 - 60r
 (C) Y = 600 - 80r
 (D) None of the above

Question No.65 (Question Id - 2)

You are given the following three utility functions.

(i) $U_1(M) = M$

(ii) $U_2(M) = M^2$

(iii) $U_3(M) = \sqrt{M}$

What can you say about their nature of the riskiness ?

- (A) All the three utility functions are examples of risk averse utility
 (B) The first two are the example of risk averse and the third one is an example of risk lover
 (C) **The first one is the risk neutral, the second one is risk lover and the third one is risk averse (Correct Answer)**
 (D) The first one is the risk neutral, the second and the third one are risk averse

Question No.66 (Question Id - 59)

A research has run a linear regression of paddy yield (y) on fertilizer use (x). Let, $\sum e_i^2 = 47.31$ and $\sum y_i^2 = 1634$. Find the proportion of variation in paddy yield explained by fertilizer use.

- (A) 0.9854
 (B) **0.9710 (Correct Answer)**
 (C) 0.9631
 (D) 0.9560

Question No.67 (Question Id - 68)

Which among the following is also known as 'base money' or 'high powered money' or Reserve money ?

- (A) **M0 (Correct Answer)**
 (B) M1
 (C) M2
 (D) M3

Question No.68 (Question Id - 104)

Demand functions of commodity x_1 and x_2 are given below.

$$x_1 = p_1^{-1.3} p_2^{0.5}; \quad x_2 = p_1^{0.3} p_2^{-0.5};$$

Where, p_1 and p_2 are prices of commodity x_1 and x_2 , respectively. Find whether these two commodities are :

- (A) **Substitutes (Correct Answer)**
 (B) Complementary
 (C) Superior goods
 (D) Inferior goods

Question No.69 (Question Id - 3)

A has an asset of ₹ 10000 and face a loss of ₹ 3600 with a probability of 0.02. A is indifferent between paying ₹ G for insurance premium and assuming a risk loss personally. She values total assets of amount ₹ $W \geq 0$, according to her utility function $(W) = \sqrt{W}$. Determine G.

- (A) ₹ 82.16
 (B) ₹ 77.56
 (C) **₹ 79.84 (Correct Answer)**
 (D) ₹ 81.84

Question No.70 (Question Id - 76)

According to W.W. Rostow, which of the following does not belong to the 'precondition for takeoff' ?

- (A) Increased agricultural productivity
- (B) Political stability
- (C) Development of social overhead capital
- (D) **Growth of the durable consumer goods industry (Correct Answer)**

Question No.71 (Question Id - 26)

The lowest significance level (α) at which a null hypothesis can be rejected is determined by :

- (A) t value
- (B) **p value (Correct Answer)**
- (C) Level of Significance
- (D) Confidence interval

Question No.72 (Question Id - 39)

Demand function is given as $Q_d = -4P + 0.01Y - 5P_r$, where P is the price of the good, Y is income and P_r is the price of related good. What is the type of the related good ?

- (A) Substitute good
- (B) **Complementary good (Correct Answer)**
- (C) Inferior good
- (D) Giffen good

Question No.73 (Question Id - 22)

The regression model includes a random error or disturbance term for a variety of reasons. Which of the following is NOT one of them ?

- (A) Individual Y observations are intrinsically random even if they are measured correctly.
- (B) Influence of variables other than X (omitted variables)
- (C) Unavailability of measurable data based on theory
- (D) **Approximation errors in the calculation of the least squares estimates (Correct Answer)**

Question No.74 (Question Id - 4)

Suppose the indirect utility function of a Cobb Douglas preference consisting of two commodities x and y are given by (with M as income and P_1 and P_2 are the prices of two commodities) :

$$V(P_1, P_2, M) = \frac{M}{2\sqrt{P_1 P_2}}$$

The Roy's Identity for the second commodity y is given by :

- (A) $\frac{\partial V(P_1, P_2, M)}{\partial P_1} = -y(P_1, P_2, M)$
- (B) $\frac{\partial V(P_1, P_2, M)}{\partial P_2} = y(P_1, P_2, M)$
- (C) $\frac{\partial V(P_1, P_2, M)}{\partial M} = y(P_1, P_2, M)$
- (D) $\frac{\partial V(P_1, P_2, M)}{\partial P_2} = -y(P_1, P_2, M)$ **(Correct Answer)**

Question No.75 (Question Id - 85)

Which is/are the advantages of redemption of debt ?

- (A) Saves the government from bankruptcy
- (B) Reduces Cost
- (C) Saves future generation from the pressure of public debt
- (D) **All of the above (Correct Answer)**

Case Study - 76 to 77 (Question Id - 91)

An Indian company initially owns a factory worth 45 million rupees, that it has borrowed 1 million US dollars to finance its construction, and that these are its only assets and liabilities.

Question No.76 (Question Id - 92)

What is the initial value of the company if the exchange rate is initially 40 rupees per dollar ?

- (A) 10 million rupees
 (B) **5 million rupees (Correct Answer)**
 (C) 1 million rupees
 (D) 15 million rupees

Question No.77 (Question Id - 93)

What is the value of the company if the rupee depreciates by 20% ?

- (A) **₹ 3.0 million (Correct Answer)**
 (B) ₹ 3.5 million
 (C) ₹ 2.5 million
 (D) ₹ 2.0 million

Question No.78 (Question Id - 77)

Let $A = \begin{bmatrix} 1 & 3 \\ 4 & 5 \end{bmatrix}$, its characteristic polynomial is :

- (A) **$\lambda^2 - 6\lambda - 7$ (Correct Answer)**
 (B) $\lambda^2 - 3\lambda - 5$
 (C) $\lambda^2 - 4\lambda - 3$
 (D) $\lambda^2 - \lambda - 7$

Question No.79 (Question Id - 64)

The condition above the golden-rule level of capital stock states that :

- (A) Increase future consumption by reducing current consumption
 (B) **Consume more now and in future (Correct Answer)**
 (C) Decrease future consumption by increasing current consumption
 (D) Increase saving and investment

Question No.80 (Question Id - 11)

Suppose you have a semi-log regression model $Y_i = \beta_0 + \beta_1 \ln X_i + e_i$. How would you interpret β_1 ?

- (A) The average incremental change of Y due to one unit change in X
 (B) The average proportionate change in Y with respect to proportionate change in X
 (C) **The average incremental change of Y due to a proportionate change in X (Correct Answer)**
 (D) The average proportionate change in Y with respect to one unit change in X

Question No.81 (Question Id - 12)

The Slutsky substitution matrix for three commodities is defined by :

- (A) Jacobian determinant of order (3 x 3)
 (B) **Hessian determinant of order (3 x 3) which is negative definite or negative semi-definite (Correct Answer)**
 (C) Hessian determinant of order (3 x 3) which is positive definite
 (D) A square symmetric matrix of own price, cross price effects of Marshallian demand functions

Question No.82 (Question Id - 88)

Output per labour hour is given in the production table for country A and B Country :

Output per Labour Hour

	A	B
Product X	3	9
Product Y	4	2

Find whether Country A has an absolute advantage in :

- (A) Product X
 (B) **Product Y (Correct Answer)**
 (C) Neither X nor Y
 (D) Both X and Y

Question No.83 (Question Id - 102)

The supply of good (x) is given as : $a\sqrt{p - b}$, where p is the price, and a and b are positive constants. The elasticity of supply is unity when :

- (A) $P = 10b$
- (B) $P = 3b$
- (C) **$P = 2b$ (Correct Answer)**
- (D) $P = 5b$

Question No.84 (Question Id - 36)

Find the stationary values of the following function.

$$y = 3x^4 - 10x^3 + 6x^2 + 1$$

- (A) Either $x = 0$, or $x = 1$ or $x = 2$
- (B) **Either $x = 0$, or $x = 2$ or $x = 1/2$ (Correct Answer)**
- (C) Either $x = 1$, or $x = 2$ or $x = 1/2$
- (D) Either $x = -1$, or $x = 2$ or $x = 1/3$

Question No.85 (Question Id - 79)

If the birth rate is 6% and the death rate is 2%, the natural rate of population increase is :

- (A) 0.3%
- (B) 3.0%
- (C) **4.0% (Correct Answer)**
- (D) 8.0%

Question No.86 (Question Id - 78)

Which one of the following is true for the Harris-Todaro model to be in equilibrium ?

- (A) Expected urban wage rate is greater than rural wage rate
- (B) **Expected urban wage rate is equal to rural wage rate (Correct Answer)**
- (C) Expected urban wage rate is less than rural wage rate
- (D) Rural wage rate is greater than urban wage rate

Question No.87 (Question Id - 80)

The Ricardo–Sraffa trade theory :

- (A) Is much more general and plausible than the Heckscher–Ohlin model
- (B) Escapes the logical problems such as capital as endowments, which is in reality produced goods
- (C) Permits different production processes to coexist in an industry of a country, and hence can give a theoretical bases for the New Trade Theory
- (D) **All of the above (Correct Answer)**

Question No.88 (Question Id - 63)

Impact of monetary or fiscal policy on output is more when :

- (A) **Aggregate supply curve is flat (Correct Answer)**
- (B) Aggregate supply curve is steeply sloped
- (C) Aggregate supply is equal to aggregate demand
- (D) Aggregate supply curve is vertical as compared to aggregate demand curve

Question No.89 (Question Id - 57)

Experimental research falls under which of the following research design ?

- (A) Qualitative
- (B) **Quantitative (Correct Answer)**
- (C) Mixed methods
- (D) Sequential mixed methods

Question No.90 (Question Id - 52)

According to Heckscher-Ohlin theory, labour abundant country will :

- A. Export labour intensive commodity
- B. Import labour intensive commodity

- C. Export capital intensive commodity
- D. Import capital intensive commodity

Which of the following is **correct** ?

- (A) C only
- (B) **A and D (Correct Answer)**
- (C) B only
- (D) B and C

Question No.91 (Question Id - 48)

A linear regression of student's test score (y) against gender ($D = 1$ if female, 0 if male) produced the following result.

$$\hat{y} = 650 + 7.4D$$

standard errors of the respective coefficients is 1.3 and 1.8.

Average test score of the male students is :

- (A) 657.0
- (B) 657.4
- (C) **650.0 (Correct Answer)**
- (D) 642.6

Question No.92 (Question Id - 55)

The concept of technical efficiency refers to :

- (A) Minimum output from maximum inputs
- (B) **Maximum output from given set of inputs (Correct Answer)**
- (C) Combining inputs to produce output at given input prices
- (D) Maximum output from maximum inputs

Question No.93 (Question Id - 73)

Which of the following is considered as a measure of the production possibility frontier ?

- (A) Real GNP
- (B) Nominal GNP
- (C) **Potential GNP (Correct Answer)**
- (D) None of the above

Question No.94 (Question Id - 72)

The population growth will outpace food production in the long run is an assumption shared by :

- (A) Ricardian-Todaro model
- (B) Lewis-Todaro model
- (C) Ricardian-Lewis model
- (D) **None of the above (Correct Answer)**

Question No.95 (Question Id - 41)

Hourly earnings (Y) of random sample of 200 recent college graduates are collected. Let $\bar{Y} = 22.64$ and $SE(\bar{Y}) = 1.28$.

The 95% confidence interval for mean hourly earnings is :

- (A) **[20.13, 25.15] (Correct Answer)**
- (B) [20.50, 25.68]
- (C) [20.00, 25.38]
- (D) [20.25, 25.35]

Question No.96 (Question Id - 99)

Consider the utility function : $U(X, Y) = \ln(X) + \ln(Y)$. Is it quasi-concave ?

- (A) **Yes, it is quasi-concave (Correct Answer)**
- (B) No, it is not quasi-concave
- (C) It is weakly quasi-concave
- (D) The provided information is not sufficient to conclude about quasi-concavity

Question No.97 (Question Id - 67)

Which is Reverse Repo Rate ?

- (A) **The rate at which banks place their surplus funds with the RBI (Correct Answer)**
- (B) The rate at which banks can borrow against their excess SLR securities to meet additional liquidity requirement
- (C) The rate at which the Reserve Bank is prepared to buy or re-discount bills of exchange or other commercial paper eligible for purchase
- (D) The rate at which banks borrow funds from the Reserve Bank against eligible collaterals

Question No.98 (Question Id - 54)

The backward bending labour supply curve occurs when :

- (A) Income effect is less than substitution effect
- (B) **Income effect is greater than substitution effect (Correct Answer)**
- (C) Real wage is less than nominal wage
- (D) Shortage of labour arises

Question No.99 (Question Id - 45)

A necessary condition for existence of third-degree price discrimination by a monopolist is that :

- (A) Price elasticity of demand in two or more markets should be same
- (B) **Price elasticity of demand in two or more markets should be different (Correct Answer)**
- (C) Income elasticity of demand in two or more markets should be same
- (D) Cross price elasticity of demand in different markets is same

Question No.100 (Question Id - 65)

In the Phillips Curve, output is at full employment level when :

- (A) Actual inflation > Expected inflation
- (B) Actual inflation < Expected inflation
- (C) **Actual inflation = Expected inflation (Correct Answer)**
- (D) Expected inflation > actual inflation