DU Mphil Phd in Economics

Topic:- DU_J18_MPHIL_ECO_Topic01

1) Suppose A and B are square matrices that satisfy AB + BA = 0, where 0 is a square matrix of zeros. Then it must be that [Question ID = 5365]

1. $A^2B^3 = B^2A^3$ [Option ID = 21458]
2. None of the above is necessarily true. [Option ID = 21460]
3. $A^2B^3 = BA^4$ [Option ID = 21459]
4. $A^2B^3 = B^3A^2$ [Option ID = 21457]

Correct Answer :-

- $A^2B^3 = B^3A^2$ [Option ID = 21457]

2) Suppose a real valued function f is defined for all real numbers except 0, and satisfies the following condition: f(xy) = f(x) + f(y) for all x, y in the domain. Consider the statements:
f(1) = f(–1) = 0 - (i)
f(x) = f(–x) for every x - (ii) [Question ID = 5363]

1. (i) is true and (ii) is false. [Option ID = 21449]
2. (i) is false and (ii) is true. [Option ID = 21450]
3. Both are true. [Option ID = 21451]
4. Both are false [Option ID = 21452]

Correct Answer :-

- Both are true. [Option ID = 21451]

3) Suppose Frank can either hunt for birds (b) or forage for wild berries (w) on his isolated island property. He can catch two birds or gather three pounds of berries in an hour. He only has 12 hours a week to devote to these activities. His utility function for birds and berries is $u(w,b) = bw^{0.5}$. What is the slope of his production possibilities frontier? [Question ID = 5338]

1. 2/3 [Option ID = 21351]
2. -3/2 [Option ID = 21350]
3. -2/3 [Option ID = 21352]
4. 3/2 [Option ID = 21349]

Correct Answer :-

- -2/3 [Option ID = 21352]

4) Suppose the net cost of undertaking a venture is rupees 1800 if beta ≤ 1 and the net profit is rupees Q if beta is greater than 1. Your posterior distribution of beta is normal with mean 2.28 and variance unity. Any value of Q bigger than what number entices you to take this venture? Note that the critical values (z) corresponding to the following tail areas (alpha) under a standard normal are: alpha=0.10 then z=1.28; alpha=0.05 then z=1.645; alpha=0.025 then z=1.96; alpha=0.01 then z=2.33 [Question ID = 5376]

1. 450 [Option ID = 21504]
2. 300 [Option ID = 21503]
3. 200 [Option ID = 21502]
4. 100 [Option ID = 21501]

Correct Answer :-

- 200 [Option ID = 21502]

5) Suppose you have a random sample of 100 observations on a variable x which is distributed normally with mean 14 and variance 8. The sample average, xbar, is 15 and the sample variance is 7. Then the mean and variance of the sampling distribution of xbar is [Question ID = 5369]

1. 14 and 0.08, respectively [Option ID = 21476]
2. 14 and 8, respectively [Option ID = 21475]
3. 15 and 7, respectively [Option ID = 21473]
4. 15 and 0.07, respectively [Option ID = 21474]

Correct Answer :-

- 14 and 0.08, respectively [Option ID = 21476]

6) Strategy A has an expected value of 10 and a standard deviation of 3. Strategy B has an expected value of 10 and a standard deviation of 5. Strategy C has an expected value of 15 and a standard deviation of 10. Which one of the following statements is true? [Question ID = 5340]

1. A risk neutral decision maker will always prefer C to A or B. [Option ID = 21358]
2. A risk seeking decision maker will always prefer C to A or B. [Option ID = 21359]
3. A risk averse decision maker will always prefer A to B, but may prefer C to A. [Option ID = 21357]
4. All of these [Option ID = 21360]

Correct Answer :-

- All of these [Option ID = 21360]

7) An n – gon is a regular polygon with n equal sides. Find the number of diagonals (edges of an n – gon are not considered as diagonals) of a 10 – gon. [Question ID = 5366]

1. 45 diagonals [Option ID = 21464]
2. 25 diagonals [Option ID = 21462]
3. 20 diagonals [Option ID = 21461]
4. 35 diagonals [Option ID = 21463]

Correct Answer :-

- 35 diagonals [Option ID = 21463]

8) The Nintari Company produces video game playing machines and a second firm, Necsega, owns exclusive rights to manufacture games that can be used with the Nintari game machine. Both of these imperfectly competitive firms are maximizing profits. If Nintari buys Necsega and nothing else changes, then profits will be maximized if Nintari [Question ID = 5343]

1. does not change the prices of game machines or games. [Option ID = 21370]
2. decreases the prices of game machines and games. [Option ID = 21369]
3. increases the prices of game machines and games. [Option ID = 21371]
4. All of these [Option ID = 21372]

Correct Answer :-

- decreases the prices of game machines and games. [Option ID = 21369]

9) Consider an otherwise Solovian economy with one exception: the production function does not exhibit decreasing marginal returns with respect to capital. In this case, which of the following statement is NOT true? [Question ID = 5378]

1. The economy would grow perpetually over time and the capital -labour ratio will not converge to a unique steady state. [Option ID = 21511]
2. Per capita consumption would remain constant over time. [Option ID = 21512]
3. An increase in the rate of saving could lead to a permanent increase in the rate of growth of per capita income. [Option ID = 21509]
4. An increase in the rate of growth of population could lead to a permanent decrease in the rate of growth of per capita income. [Option ID = 21510]

Correct Answer :-

- Per capita consumption would remain constant over time. [Option ID = 21512]

10) Consider the function f mapping points of the plane into the plane defined by f(x, y) = (x – y, x + y). The range of this function is [Question ID = 5359]

1. the 45 degree line. [Option ID = 21433]
2. a ray through the origin but not the 45 degree line. [Option ID = 21434]
3. the entire plane. [Option ID = 21435]
4. the first and third quadrants. [Option ID = 21436]

Correct Answer :-

- the entire plane. [Option ID = 21435]

11) Consider a firm using two inputs to produce its output. It is known that greater use of both inputs increases output. Moreover, for any combination of positive input prices, the firm employs an input combination of the form (x, y=αx) where α > 0 is a constant. Which of the following functions represents this firm's technology? [Question ID = 5353]

1. $f(x, y) = \min\{x^{<\alpha>}, y\}$ [Option ID = 21409]
2. $f(x, y) = \min\{\alpha x, y\}$ [Option ID = 21410]
3. $f(x, y) = \min\{x, y^{<\alpha>}\}$ [Option ID = 21412]
4. $f(x, y) = \min\{x, \alpha y\}$ [Option ID = 21411]

Correct Answer :-

- $f(x, y) = \min\{\alpha x, y\}$ [Option ID = 21410]

12) The optimal combination of joint products that are produced in variable proportions is found where [Question ID = 5345]

1. the isorevenue line is tangent to the relevant total cost curve. [Option ID = 21379]
2. the isorevenue line is tangent to the product transformation curve. [Option ID = 21378]
3. None of these [Option ID = 21380]
4. the marginal revenue from each product is equal to the marginal cost of producing each product. [Option ID = 21377]

Correct Answer :-

- the isorevenue line is tangent to the product transformation curve. [Option ID = 21378]

13) The J curve describes the following phenomenon: [Question ID = 5383]

1. A change in nominal exchange rates will affect relative prices only in the short run but the effect will peter out in the long run. [Option ID = 21529]
2. Depreciation of the domestic currency will worsen the trade balance in the short run but will then gradually improve later as volume effects come to dominate. [Option ID = 21530]
3. An appreciation of the domestic currency will always worsen the trade balance. [Option ID = 21531]
4. An increase in price level will reduce the aggregate demand only in the short but the effect will peter out in the long run. [Option ID = 21532]

Correct Answer :-

- Depreciation of the domestic currency will worsen the trade balance in the short run but will then gradually improve later as volume effects come to dominate. [Option ID = 21530]

14) A profit maximising firm operating in a perfectly competitive market has the cost function $c(q) = 100 + q^{<2>}$ for any $q > 0$. If the firm decides to produce $q = 0$, however, its cost is 0. The market price is p. If $p = 40$, the firm's optimum output is [Question ID = 5348]

1. 0 [Option ID = 21389]
2. 30 [Option ID = 21392]
3. 10 [Option ID = 21390]
4. 20 [Option ID = 21391]

Correct Answer :-Full Marks Given to all the candidates

15) For a system of linear equations Ax = b with m equations and n variables where m > n and b is a given vector, the following is true. [Question ID = 5362]

1. It can never have a unique solution. [Option ID = 21445]
2. It has at least a one-dimensional solution space. [Option ID = 21447]
3. If Rank(A) = n and a solution exists it must be unique. [Option ID = 21448]
4. It always has at least one solution. [Option ID = 21446]

Correct Answer :-

- If Rank(A) = n and a solution exists it must be unique. [Option ID = 21448]

16) Given below are the equations that characterise an economy in the short term.

Y=C+I+G
C=1000+0.8(Y-T)
I=1500
G=2000
T=1000
A reduction in lump sum taxes from 1000 to 500 will have the following effect on equilibrium output: [Question ID = 5384]

1. it will increase by 1000 units. [Option ID = 21535]
2. it will increase by 2000 units. [Option ID = 21534]
3. it will increase by 500 units. [Option ID = 21536]
4. it will increase by 2500 units. [Option ID = 21533]

Correct Answer :-

- it will increase by 2000 units. [Option ID = 21534]

17) The optimal output of joint products that are produced in fixed proportions is found where [Question ID = 5344]

1. the marginal cost is equal to the corresponding price of each product. [Option ID = 21376]
2. the horizontal sum of marginal revenue from each product is equal to marginal cost. [Option ID = 21374]
3. the vertical sum of the marginal revenue from each product is equal to marginal cost. [Option ID = 21373]
4. the marginal revenue from each product is equal to the marginal cost of producing each product. [Option ID = 21375]

Correct Answer :-

- the vertical sum of the marginal revenue from each product is equal to marginal cost. [Option ID = 21373]

18) Conditional convergence hypothesis states that [Question ID = 5387]

1. poorer countries will always grow slower than richer countries. [Option ID = 21546]
2. a country will grow slower the further away it is from its own steady state. [Option ID = 21548]
3. a country will grow faster the further away it is from its own steady state. [Option ID = 21547]
4. poorer countries will always grow faster than richer countries. [Option ID = 21545]

Correct Answer :-

- a country will grow faster the further away it is from its own steady state. [Option ID = 21547]

19)

A society has 3 individuals and 3 alternatives A, B and C. Individuals 1 and 2 strictly prefer A to B and B to C. Individual 3 strictly prefers C to B and B to A. A Rawlsian social planner would therefore choose [Question ID = 5355]

1. B. [Option ID = 21418]
2. A or C [Option ID = 21420]
3. C. [Option ID = 21419]
4. A. [Option ID = 21417]

Correct Answer :-

- B. [Option ID = 21418]

20) You estimate the multiple regression Y = a+b1(X1) +b2(X2) +u with a large sample. Let t1 be the test statistic for testing the null hypothesis b1 = 0 and t2 be the test statistic for testing the null hypothesis b2 = 0. Suppose you test the joint null hypothesis that b1 = b2 = 0 using the principle 'reject the null if either t1 or t2 exceeds 1.96 in absolute value', taking t1 and t2 to be independently distributed. [Question ID = 5374]

1. The probability of Type I error is less than or equal to 5 percent in this case. [Option ID = 21495]
2. The probability of Type I error is less than 5 percent in this case. [Option ID = 21496]
3. The probability of Type I error is 5 percent in this case. [Option ID = 21493]
4. The probability of Type I error is more than 5 percent but less than 10 percent in this case [Option ID = 21494]

Correct Answer :-

- The probability of Type I error is more than 5 percent but less than 10 percent in this case [Option ID = 21494]

21) For the real-valued function $f(x) = x^4 - 4x^3 + 6x^2 - 4x + 1$, defined for all real numbers x), the point $x = 1$ is

[Question ID = 5358]

1. a point of inflection. [Option ID = 21431]
2. a local minimum. [Option ID = 21429]
3. a local maximum. [Option ID = 21430]
4. None of these. [Option ID = 21432]

Correct Answer :-

- a local maximum. [Option ID = 21430]

22)

A firm has an order to supply 20 units of output. It can divide its production across two different plants, 1 and 2, with cost functions $c_1(q_1) = {q_1}^2$ and $c_2(q_2) = 3{q_2}^2$, respectively. The total order must be produced, i.e., $q_1 + q_2 = 20$. To meet the total production target at minimum cost, the amount of output the firm should produce in its first plant is

[Question ID = 5350]

1. 20 units. [Option ID = 21397]
2. 10 units. [Option ID = 21399]
3. 5 units. [Option ID = 21400]
4. 15 units. [Option ID = 21398]

Correct Answer :-

- 15 units. [Option ID = 21398]

23)

A consumer has utility function $u(x_1, x_2) = \min\{2x_1 + x_2 ; x_1 + 2x_2\}$. Her income is y = 100, the prices are $p_1 = 20$ and $p_2 = 30$. The amount of x_1 in the utility maximizing bundle is

[Question ID = 5351]

1. 0 [Option ID = 21404]
2. 7 [Option ID = 21401]
3. 5 [Option ID = 21402]
4. 2 [Option ID = 21403]

Correct Answer :-

- 2 [Option ID = 21403]

24) The closest point on the parabola $y = \frac{1}{4}x^2$ from a given point $(0, b)$ on the vertical axis, with $b > 0$, is the origin if and only if

[Question ID = 5364]

1. b > 3 [Option ID = 21454]
2. b > 2 [Option ID = 21456]
3. b < 2 2=""> [Option ID = 21455]
4. b < 3 3=""> [Option ID = 21453]

Correct Answer :-Full Marks Given to all the candidates

25) Assume that an economy has the following production, saving, labour growth functions and the equation of motions with usual meanings and notations:

$Y_t = B\,K_t^{\alpha} L_t^{1-\alpha}$

$I_t \equiv S_t = sY_t$

$K_{t+1} = (1-\delta)K_t + I_t$

$L_{t+1} = (1+n)L_t$

Given this environment (where small case letters represent per capita values) the steady state is characterised by

[Question ID = 5379]

1. $k^* = \left(\frac{Bs}{n+\delta}\right)^{\frac{1}{1-\alpha}}$ & $y^* = 0$ [Option ID = 21516]
2. $k^* = \left(\frac{Bs}{n+\delta}\right)^{\frac{1}{1-\alpha}}$ & $y^* = B\left(\frac{Bs}{n+\delta}\right)^{\frac{1}{1-\alpha}}$ [Option ID = 21514]
3. $y^* = k^* = \left(\frac{Bs}{n+\delta}\right)^{\frac{1}{1-\alpha}}$ [Option ID = 21513]
4. $k^* = \left(\frac{Bs}{n+\delta}\right)^{\frac{1}{1-\alpha}}$ & $y^* = B\left(\frac{Bs}{n+\delta}\right)^{\frac{\alpha}{1-\alpha}}$ [Option ID = 21515]

Correct Answer :-

- $k^* = \left(\frac{Bs}{n+\delta}\right)^{\frac{1}{1-\alpha}}$ & $y^* = B\left(\frac{Bs}{n+\delta}\right)^{\frac{\alpha}{1-\alpha}}$ [Option ID = 21515]

26)

Suppose the following equation holds for an economy at every time t:

$$P_t = (1 + a)\frac{W_t N_t}{Y_t}$$

That is, the price of output is a fixed mark-up over unit labour cost where Pt is the nominal price level, Wt is the nominal wage rate, Nt is employment and Yt is output. Let π be the inflation rate, ω be the wage inflation rate, and λ be the rate of growth in labour productivity $(\frac{Y_t}{N_t})$. Which of the following is true?

[Question ID = 5385]

1. $\pi = \omega + \lambda$ [Option ID = 21538]
2. $\pi = \omega - \lambda$ [Option ID = 21539]
3. $\omega = \lambda - \pi$ [Option ID = 21540]
4. $\omega = \pi - \lambda$ [Option ID = 21537]

Correct Answer :-

- $\pi = \omega - \lambda$ [Option ID = 21539]

27)

Assume that wages and prices are determined in the labour market using the following functions:

$W = P^e F(u); F_u < 0$

$P = (1 + \mu)W$

where $u \equiv \frac{N-L}{N}$ represents the unemployment rate. Suppose that one unit of labour produces one unit of output (Y), then

[Question ID = 5380]

1. $Y \uparrow \Rightarrow W \downarrow \& P \uparrow$ [Option ID = 21519]
2. $Y \uparrow \Rightarrow W \uparrow \& P \uparrow$ [Option ID = 21517]
3. $Y \uparrow \Rightarrow W \uparrow \& P \downarrow$ [Option ID = 21518]
4. $Y \uparrow \Rightarrow W \downarrow \& P \downarrow$ [Option ID = 21520]

Correct Answer :-

- $Y \uparrow \Rightarrow W \uparrow \& P \uparrow$ [Option ID = 21517]

28) An economy has two agents, 1 and 2, and two goods, x and y. They have utility functions $U_1 = x_1^2 y_1$ and $U_2 = x_2 y_2^2$ respectively, where x_i and y_i denote agent i's consumption of good x and y respectively. Which of the following allocations is Pareto efficient (assume no wastage)?

[Question ID = 5347]

1. (x1; y1) = (30; 20), (x2; y2) = (30; 40) [Option ID = 21388]
2. (x1; y1) = (30; 30), (x2; y2) = (30; 30) [Option ID = 21386]
3. (x1; y1) = (40; 20), (x2; y2) = (20; 40) [Option ID = 21387]
4. (x1; y1) = (20; 40), (x2; y2) = (40; 20) [Option ID = 21385]

Correct Answer :-

- (x1; y1) = (40; 20), (x2; y2) = (20; 40) [Option ID = 21387]

29)

A representative consumer's planning horizon is divided into two periods – the present (period 1) and the future (period 2). The lifetime utility function is $U = u(c_1) + \frac{u(c_2)}{1+\rho}$. Assume that $u(c_t) = \frac{(C)^{\sigma-1}}{\sigma-1}; \sigma > 1$ and $MRS(c_2 : c_1) = 1 + r$. Suppose $r = \rho$. Then which of the following statement is true?

[Question ID = 5381]

1. $c_1 > c_2$ [Option ID = 21521]
2. $c_1 < c_2$ [Option ID = 21522]
3. $c_1 = c_2$ [Option ID = 21523]
4. None of these [Option ID = 21524]

Correct Answer :-

- $c_1 = c_2$ [Option ID = 21523]

30)

Sunita wants to estimate the marginal productivity of labour and runs a regression: $\ln Y = \beta_0 + \beta_1 \ln L + \varepsilon$ using ordinary least squares where Y refers to ouput, L refers to labour, and ln refers to the natural logarithm. The production of Y also needs capital, where labour are capital are substitutes and also higher use of capital means higher output. Sunita, however, does not have information on capital use. By ignoring the role of capital which of the following is true?

[Question ID = 5372]

1. The estimated β_1 will have upward bias (higher than what it should be). [Option ID = 21485]
2. The estimated β_1 will be unbiased. [Option ID = 21488]
3. The estimated β_1 will be biased but it is not possible to determine the direction of bias. [Option ID = 21487]
4. The estimated β_1 will have downward bias (lower than what it should be). [Option ID = 21486]

Correct Answer :-

- The estimated β_1 will have downward bias (lower than what it should be). [Option ID = 21486]

31)

Suppose the non-zero $n \times 1$ column vector x solves the system of equations $Ax = b$, where A is a $m \times n$ matrix whose columns are the vectors $a_1, a_2, \ldots, a_n$, and b is a $m \times 1$ column vector. Then the set of vectors $\{a_1, a_2, \ldots, a_n, b\}$ is

[Question ID = 5361]

1. linearly dependent only if a1, a2,..., an are linearly dependent. [Option ID = 21443]
2. linearly dependent. [Option ID = 21442]
3. linearly independent. [Option ID = 21441]
4. linearly dependent only if m = n. [Option ID = 21444]

Correct Answer :-

- linearly dependent. [Option ID = 21442]

32)

Suppose the government follows interest rate targeting accompanied by an accommodating monetary policy such that it always supplies whatever amount nominal money is demanded so as to keep the interest rate fixed at $\bar{r}$. In this case,

[Question ID = 5386]

1. There does not exist any money market equilibrating relationship between interest rate and income. [Option ID = 21544]
2. The LM curve is horizontal. [Option ID = 21542]
3. The LM curve is downward sloping. [Option ID = 21543]
4. The LM curve is vertical. [Option ID = 21541]

Correct Answer :-

- There does not exist any money market equilibrating relationship between interest rate and income. [Option ID = 21544]

33)

Assume that aggregate production of an economy is $Y_t = \sqrt{K_t L_t}$ where $K_{t+1} = (1-\delta)K_t + I_t$, $S_t = sY_t$ and $L_t = 1$. The steady state capital stock at which consumption is maximised is given by:

[Question ID = 5382]

1. $\sqrt{\frac{s}{\delta}}$ [Option ID = 21527]
2. $\left(\frac{1}{2\delta}\right)^2$ [Option ID = 21528]
3. $\left(\frac{1}{\delta}\right)^2$ [Option ID = 21525]
4. $\left(\frac{s}{\delta}\right)^2$ [Option ID = 21526]

Correct Answer :-

- $\left(\frac{1}{2\delta}\right)^2$ [Option ID = 21528]

34)

Consider the game below. Given that p is the probability that Player 1 will choose N and q is the probability Player 2 will choose Y, which of the following is a pure strategy Nash equilibrium?

		Player 2	
		Y	Z
Player 1	N	1,5	0,0
	M	0,0	5,1

[Question ID = 5342]

1. p=0 and q=0 [Option ID = 21365]
2. p=0 and q=1 [Option ID = 21367]
3. p=1 and q=0 [Option ID = 21366]
4. p=0.5 and q=0.5 [Option ID = 21368]

Correct Answer :-

- p=0 and q=0 [Option ID = 21365]

35) Suppose you estimate the following equation using ordinary least squares:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3(3X_2 - 2X_1) + \beta_4 X_1 X_2 + \varepsilon$$

Which of the following statements is true?

[Question ID = 5371]

1. It is possible to estimate β_0, β_1, β_2 and β_3 but not β_4. [Option ID = 21482]
2. It is possible to estimate β_0, β_1, β_2 and β_4 but not β_3. [Option ID = 21481]
3. All the parameters can be estimated. [Option ID = 21484]
4. It is possible to estimate β_0 and β_4 but not β_1, β_2 and β_3. [Option ID = 21483]

Correct Answer :-

- It is possible to estimate β_0 and β_4 but not β_1, β_2 and β_3. [Option ID = 21483]

36) Sania and Saina are bargaining over how to split 10 rupees. Both claimants simultaneously name shares they would like to have, s_1 and s_2, where $0 \leq s_1, s_2 \leq 10$. If $s_1 + s_2 \leq 10$ then the claimants receive the shares they name, otherwise both receive zero. Find **all** pure strategy Nash equilibria of this game.

[Question ID = 5356]

1. $\{(s_1, s_2) \mid s_1 + s_2 = 10\}$ [Option ID = 21422]
2. There is no pure strategy Nash equilibria. [Option ID = 21424]
3. $s_1 = 5, s_2 = 5$ [Option ID = 21421]
4. $\{(s_1, s_2) \mid s_1 + s_2 \leq 10\}$ [Option ID = 21423]

Correct Answer :-Full Marks Given to all the candidates

37)

Suppose $\{v_1, v_2, \ldots, v_n\}$ is a set of linearly dependent vectors, none of them being the zero vector. Suppose $c_1, c_2, \ldots, c_n$ are scalars, not all zero, such that $\sum_{i=1}^{n} c_i v_i = 0$. Then the minimum number of non-zero scalars is

[Question ID = 5360]

1. 1 [Option ID = 21437]
2. Cannot be determined. [Option ID = 21440]
3. 2 [Option ID = 21438]
4. n – 1 [Option ID = 21439]

Correct Answer :-

- 2 [Option ID = 21438]

38) Which of the following are plausible approaches to dealing with a model that exhibits heteroscedasticity? [Question ID = 5375]

1. Both Take logarithms of each of the variables. and Add lagged values of the variables to the regression equation. [Option ID = 21500]
2. Neither Take logarithms of each of the variables. not Add lagged values of the variables to the regression equation. [Option ID = 21499]
3. Add lagged values of the variables to the regression equation. [Option ID = 21498]
4. Take logarithms of each of the variables. [Option ID = 21497]

Correct Answer :-

- Take logarithms of each of the variables. [Option ID = 21497]

39) A firm has two products and two customers. Customer 1 is willing to pay $9 for Product A and $4 for Product B. Customer 2 is willing to pay $7 for Product A and $5 for Product B. Can the firm increase revenue by bundling and, if so, how much should be charged for the bundle? [Question ID = 5346]

1. The firm can increase profits by bundling. The bundle should sell for $10. [Option ID = 21383]
2. The firm can increase profits by bundling. The bundle should sell for $7. [Option ID = 21384]
3. The firm can increase profits by bundling. The bundle should sell for $12. [Option ID = 21382]
4. The firm cannot increase profits by bundling. [Option ID = 21381]

Correct Answer :-

- The firm can increase profits by bundling. The bundle should sell for $12. [Option ID = 21382]

40) The equation $x^{<7>} = x + 1$ [Question ID = 5367]

1. has no positive real solution. [Option ID = 21466]
2. has no real solution. [Option ID = 21465]
3. has a real solution but not within (0, 2). [Option ID = 21468]
4. has a real solution in the interval (0, 2). [Option ID = 21467]

Correct Answer :-Full Marks Given to all the candidates

41) A friend tells you her multiple regression has a very high R square but all the coefficients of the regression slopes are insignificantly different from zero on the basis of ttests of significance. This has probably happened because [Question ID = 5373]

1. explanatory variables are highly collinear. [Option ID = 21491]
2. the dependent variable does not vary by much. [Option ID = 21492]
3. the intercept has been omitted. [Option ID = 21489]
4. explanatory variables are highly orthogonal. [Option ID = 21490]

Correct Answer :-

- explanatory variables are highly collinear. [Option ID = 21491]

42) You have 100 observations on y (average value 15) and on x (average value 8) and and from an OLS regression have estimated the slope on x to be 2. Your estimate of the mean of y conditioned on x is [Question ID = 5368]

1. None of these. [Option ID = 21472]
2. 16 [Option ID = 21470]
3. 15 [Option ID = 21469]
4. 17 [Option ID = 21471]

Correct Answer :-

- None of these. [Option ID = 21472]

43) A profit maximising firm operating in a perfectly competitive market has the cost function $c(q) = 100 + q^{<2>}$ for any $q > 0$. If the firm decides to produce q = 0, however, its cost is 0. The market price is p. If p = 10, the .firm's optimum output is [Question ID = 5349]

1. 0 [Option ID = 21393]

2. 5 [Option ID = 21394]
3. 10 [Option ID = 21395]
4. 20 [Option ID = 21396]

Correct Answer :-Full Marks Given to all the candidates

44) The saddle point in a payoff matrix is always the [Question ID = 5341]

1. largest number in the matrix. [Option ID = 21361]
2. largest number in its column and the smallest number in its row [Option ID = 21364]
3. smallest number in the matrix. [Option ID = 21363]
4. smallest number in its column and the smallest number in its row. [Option ID = 21362]

Correct Answer :-

- largest number in its column and the smallest number in its row [Option ID = 21364]

45) Suppose you have programmed a computer as follows:
(i) Draw 50 values of a random variable X from a distribution that is Uniform between 10 and 20.
(ii) Count the number 'g' of values of X that are greater than 18.
(iii)Divide 'g' by 50 to get 'h'
(iv) Repeat this procedure to get 1000 'h' values.
(v) Calculate the average of these 1000 'h' values.

(v) Calculate the average of these 1000 'h' values. [Question ID = 5370]

1. 1 [Option ID = 21480]
2. 0.1 [Option ID = 21477]
3. 0.2 [Option ID = 21478]
4. 2 [Option ID = 21479]

Correct Answer :-Full Marks Given to all the candidates

46) Suppose you are a Bayesian and your posterior distribution for next month's unemployment rate is a normal distribution with mean 8.0 and variance 0.25. If this month's unemployment rate is 8.1%, what would you say is the probability that unemployment will increase from this month to the next month? [Question ID = 5377]

1. 5% [Option ID = 21507]
2. 42% [Option ID = 21506]
3. 2.30% [Option ID = 21508]
4. 50% [Option ID = 21505]

Correct Answer :-

- 42% [Option ID = 21506]

47) Suppose Frank can either hunt for birds (b) or forage for wild berries (w) on his isolated island property. He can catch two birds or gather three pounds of berries in an hour. He only has 12 hours a week to devote to these activities. His utility function for birds and berries is $u(w,b) = bw^{0.5}$. Which point is not Pareto efficient? [Question ID = 5339]

1. (12, 16) [Option ID = 21356]
2. (9, 18) [Option ID = 21355]
3. (0, 24) [Option ID = 21353]
4. (3, 21) [Option ID = 21354]

Correct Answer :-

- (3, 21) [Option ID = 21354]

48) A consumer spends Rs. 100 on only two goods, A and B. Assume non satiation, i.e., more of any good is preferred to less. Suppose the price of B is fixed at Rs. 20. When the price of A is Rs. 10, the consumer buys 3 units of B. When the price of A is Rs. 20, she buys 5 units of A. From this we can conclude that for the relevant price range [Question ID = 5352]

1. A is a Giffen good. [Option ID = 21407]
2. B is a complement of A. [Option ID = 21406]
3. All of these [Option ID = 21408]
4. A is an inferior good. [Option ID = 21405]

Correct Answer :-

- All of these [Option ID = 21408]

49) Consider a duopoly market in which both firms choose quantities. Suppose we have the reaction curve of each firm, i.e., the curve that yields the firm's optimal quantity choice in response to a quantity chosen by the other firm. If one firm is the Stackelberg leader and the other is the Stackelberg follower, then which of the following conditions characterises the quantity chosen by the leader? [Question ID = 5354]

1. The quantity where the two reaction curves intersect. [Option ID = 21416]
2. The quantity where the leader's isoprofit curve attains a maximum. [Option ID = 21415]
3. The quantity at which the follower's isoprofit curve is tangential to the leader's reaction curve. [Option ID = 21414]

4. The quantity at which the leader's isoprofit curve is tangential to the follower's reaction curve. [Option ID = 21413]

Correct Answer :-

- The quantity at which the leader's isoprofit curve is tangential to the follower's reaction curve. [Option ID = 21413]

50) Consider the following two-player game. The players simultaneously draw one sample each from a continuous random variable X, which follows Uniform[0,100]. After observing the value of her own sample, which is private information (that is, the opponent does not observe it), players simultaneously and independently choose one of the following: SWAP, RETAIN. If both the players choose SWAP then they exchange their initially drawn numbers. Otherwise if at least one person chooses RETAIN both of them retain their numbers. A player earns as many rupees as the number she is holding at the end of the game. Find the probability that the players will exchange their initially drawn numbers. [Question ID = 5357]

1. 0 [Option ID = 21428]
2. ⅓ [Option ID = 21427]
3. 1 [Option ID = 21425]
4. ½ [Option ID = 21426]

Correct Answer :-

- 0 [Option ID = 21428]