

Topic:- DU\_J19\_MPHIL\_ECO

1)

Two people meet at a party and are from the same neighborhood of 1000 people. They each have 50 friends. Assume that knowing one person's friends does not give us any information about who the other person's friends are. The expected number of their mutual friends they have is

[Question ID = 2094]

1. 50 [Option ID = 8375]
2. 2.5 [Option ID = 8374]
3. 5 [Option ID = 8373]
4. 25 [Option ID = 8376]

**Correct Answer :-**

- 2.5 [Option ID = 8374]

2)

Consider **Scenario 2 (this scenario appears in multiple questions):**

Trader 1 is endowed with 100 identical Left shoes. Trader 2 is endowed with 99 identical Right shoes. Each trader's utility from her allocation of shoes is equal to the number of complete pairs of shoes in the allocation. Traders 1 and 2 trade shoes in competitive markets and arrive at a competitive equilibrium. Assume that shoes are infinitely divisible.

**Question:** An equilibrium allocation of shoes gives trader 2

[Question ID = 2112]

1. at least 99 Left shoes [Option ID = 8446]
2. at most 50 Right shoes [Option ID = 8448]
3. at most 99 Left shoes [Option ID = 8447]
4. at most 50 Left shoes [Option ID = 8445]

**Correct Answer :-**

at least 99 Left shoes

- [Option ID = 8446]

3)

Consider Scenario 1 (this scenario appears in multiple questions):

Consider utility functions

$$u_1(x, y) = \begin{cases} 2x, & \text{if } y/x > 2 \\ \max\{x, y\}, & \text{if } y/x \in [1/2, 2] \\ 2y, & \text{if } y/x < 1/2 \end{cases}$$

and

$$u_2(x, y) = \begin{cases} 2x, & \text{if } y/x > 2 \\ x + y, & \text{if } y/x \in [1/2, 2] \\ 2y, & \text{if } y/x < 1/2 \end{cases}$$

Let  $p_x > 0$  and  $p_y > 0$  be the prices of goods  $x$  and  $y$  respectively. Let  $w > 0$  denote wealth (or income).

**Question:** For  $i = 1, 2$ , let  $h_i(p_x, p_y, U)$  denote the set of solutions of the problem: choose  $x > 0$  and  $y > 0$  to minimise  $p_x x + p_y y$  subject to  $u_i(x, y) \geq U$ . Let  $e_i(p_x, p_y, U) = p_x X + p_y Y$ , where  $(X, Y) \in h_i(p_x, p_y, U)$ .

[Question ID = 2110]

1. None of the above hold necessarily. [Option ID = 8440]
2.  $h_1(p_x, p_y, U) \supset h_2(p_x, p_y, U)$  [Option ID = 8438]
3.  $h_1(p_x, p_y, U) \subset h_2(p_x, p_y, U)$  [Option ID = 8437]
4.  $h_1(p_x, p_y, U) = h_2(p_x, p_y, U)$  [Option ID = 8439]

**Correct Answer :-**

- None of the above hold necessarily. [Option ID = 8440]

4)

In a roll of two fair dice,  $X$  is the number on the first die and  $Y$  is the number on the second die. Which of the following statements is true

[Question ID = 2093]

1.  $X - Y$  and  $X + Y$  are dependent random variables [Option ID = 8370]

2. All of the above [Option ID = 8372]
3.  $X^2$  and  $Y^2$  are independent random variables [Option ID = 8371]
4.  $X^2$  and  $Y$  are independent random variables. [Option ID = 8369]

**Correct Answer :-**

- All of the above [Option ID = 8372]

5)

What is the probability that at least one 6 appears when 6 fair dice are rolled?

**[Question ID = 2091]**

1.  $1 - \left(\frac{5}{6}\right)^6$  [Option ID = 8363]
2.  $\left(\frac{5}{6}\right)^6$  [Option ID = 8361]
3.  $\frac{1}{6}$  [Option ID = 8362]
4.  $\frac{5}{6}$  [Option ID = 8364]

**Correct Answer :-**

- $1 - \left(\frac{5}{6}\right)^6$  [Option ID = 8363]

6)

The price-setting relation determines the real wage paid by firms depending on the level of technology ( $A$ ) and mark-up  $m$ , and is represented by  $\frac{W}{P} = \frac{A}{1+m}$ . Under the wage-setting relation, the real wage is determined by the level of productivity ( $A$ ) and the unemployment  $u$ . This is represented by  $\frac{W}{P} = A(1-u)$ . The effect of an increase in the level of technology on the unemployment is:

**[Question ID = 2133]**

1. Zero [Option ID = 8531]
2. Ambiguous [Option ID = 8532]
3. Negative [Option ID = 8530]
4. Positive [Option ID = 8529]

**Correct Answer :-**

- Zero [Option ID = 8531]

7) Consider a two-equation system of simultaneous equations:

The demand function:  $q_t = \alpha_1 P_t + \alpha_2 X_t + \varepsilon_{dt}$

The supply function:  $q_t = \beta_1 P_t + \varepsilon_{st}$

Which of the following statements are true?

[Question ID = 2108]

1.  $\alpha_1$  and  $\alpha_2$  are not identified but  $\beta_1$  is identified [Option ID = 8429]
2. Without further restrictions  $\alpha_1$ ,  $\alpha_2$  and  $\beta_1$  cannot be identified [Option ID = 8432]
3.  $\alpha_2$  is not identified but  $\alpha_1$  and  $\beta_1$  are identified [Option ID = 8431]
4.  $\alpha_1$  and  $\beta_1$  are not identified but  $\alpha_2$  is identified [Option ID = 8430]

**Correct Answer :-**

- $\alpha_1$  and  $\alpha_2$  are not identified but  $\beta_1$  is identified [Option ID = 8429]

8) The efficiency wage theory argues that

[Question ID = 2136]

1. Firms choose to pay a lower wage than the classical equilibrium wage, thus the real wage is higher than the wage at which the labor market clears. [Option ID = 8543]

2. Firms choose to pay a lower wage than the classical equilibrium wage, thus the real wage is higher than the wage at which the labor market clears. [Option ID = 8544]

3. Firms choose to pay a higher wage than the classical equilibrium wage, thus the real wage is higher than the wage at which the labor market clears. [Option ID = 8541]

4. Firms choose to pay a higher wage than the classical equilibrium wage, thus the real wage is lower than the wage at which the labor market clears. [Option ID = 8542]

**Correct Answer :-**

Firms choose to pay a

- [Option ID = 8541]

9) The range of the function  $f(x) = \frac{x^2 - 4}{x^2 + 4}$

[Question ID = 2123]

1. [Option ID = 8490]
2. [Option ID = 8492]
3. [Option ID = 8489]
4. [Option ID = 8491]

Correct Answer :-

10) [Question ID = 2107]

1. [Option ID = 8427]
2. [Option ID = 8428]
3. [Option ID = 8425]
4. [Option ID = 8426]

Correct Answer :-

- [Option ID = 8428]

11) [Question ID = 2114]

1. [Option ID = 8453]
2. [Option ID = 8454]
3. [Option ID = 8455]
4. [Option ID = 8456]

Correct Answer :-

- [Option ID = 8453]

12) [Question ID = 2130]

1. [Option ID = 8517]
2. [Option ID = 8519]
3. [Option ID = 8518]
4. [Option ID = 8520]

Correct Answer :-

- [Option ID = 8518]

13) [Question ID = 2092]

1. [Option ID = 8367]

2. [Option ID = 8366]
3. [Option ID = 8368]
4. [Option ID = 8365]

**Correct Answer :-**

- [Option ID = 8366]

**14)**  
**[Question ID = 2138]**

1. [Option ID = 8552]
2. [Option ID = 8551]
3. [Option ID = 8549]
4. [Option ID = 8550]

**Correct Answer :-**

- [Option ID = 8551]

**15)**  
**[Question ID = 2132]**

1. [Option ID = 8528]
2. [Option ID = 8526]
3. [Option ID = 8527]
4. [Option ID = 8525]

**Correct Answer :-**

- [Option ID = 8526]

**16)**  
**[Question ID = 2111]**

1. [Option ID = 8442]
2. [Option ID = 8441]
3. [Option ID = 8443]
4. [Option ID = 8444]

**Correct Answer :-**

- [Option ID = 8444]

**17)**  
**[Question ID = 2109]**

1. [Option ID = 8436]
2. [Option ID = 8434]
3. [Option ID = 8433]
4. [Option ID = 8435]

**Correct Answer :-**

- [Option ID = 8435]

**18)**  
**[Question ID = 2121]**

1. [Option ID = 8484]
2. [Option ID = 8481]
3. [Option ID = 8482]
4. [Option ID = 8483]

**Correct Answer :-**

- [Option ID = 8484]

**19)**

**[Question ID = 2116]**

1. [Option ID = 8461]
2. [Option ID = 8462]
3. [Option ID = 8464]
4. [Option ID = 8463]

**Correct Answer :-**

- [Option ID = 8464]

**20)**

**[Question ID = 2097]**

1. [Option ID = 8386]
2. [Option ID = 8388]
3. [Option ID = 8387]
4. [Option ID = 8385]

**Correct Answer :-**

- [Option ID = 8386]

**21)**

**[Question ID = 2139]**

1. [Option ID = 8556]
2. [Option ID = 8555]
3. [Option ID = 8553]
4. [Option ID = 8554]

**Correct Answer :-**

- [Option ID = 8555]

**22)**

**[Question ID = 2102]**

1. [Option ID = 8408]
2. [Option ID = 8405]
3. [Option ID = 8406]
4. [Option ID = 8407]

**Correct Answer :-**

- [Option ID = 8405]

**23)**

**[Question ID = 2099]**

1. [Option ID = 8394]
2. [Option ID = 8393]
3. [Option ID = 8395]
4. [Option ID = 8396]

**Correct Answer :-**

- [Option ID = 8394]

**24) [Question ID = 2100]**

1. [Option ID = 8400]
2. [Option ID = 8397]
3. [Option ID = 8398]
4. [Option ID = 8399]

**Correct Answer :-**

- [Option ID = 8400]

**25) [Question ID = 2096]**

1. [Option ID = 8384]
2. [Option ID = 8383]
3. [Option ID = 8381]
4. [Option ID = 8382]

**Correct Answer :-**

- [Option ID = 8383]

**26) [Question ID = 2119]**

1. [Option ID = 8475]
2. [Option ID = 8474]
3. [Option ID = 8473]
4. [Option ID = 8476]

**Correct Answer :-**

- [Option ID = 8476]

**27) [Question ID = 2095]**

1. [Option ID = 8377]
2. [Option ID = 8379]
3. [Option ID = 8380]
4. [Option ID = 8378]

**Correct Answer :-**

- [Option ID = 8378]

**28) [Question ID = 2101]**

1. [Option ID = 8401]
2. [Option ID = 8404]
3. [Option ID = 8403]
4. [Option ID = 8402]

**Correct Answer :-**

- [Option ID = 8403]

**29) [Question ID = 2104]**

1. [Option ID = 8415]
2. [Option ID = 8413]



3. [Option ID = 8416]
4. [Option ID = 8414]

**Correct Answer :-**

- [Option ID = 8416]

**30)**  
**[Question ID = 2106]**

1. [Option ID = 8421]
2. [Option ID = 8423]
3. [Option ID = 8422]
4. [Option ID = 8424]

**Correct Answer :-**

- [Option ID = 8424]

**31)**  
**[Question ID = 2129]**

1. [Option ID = 8516]
2. [Option ID = 8513]
3. [Option ID = 8515]
4. [Option ID = 8514]

**Correct Answer :-**

- [Option ID = 8515]

**32)**  
**[Question ID = 2124]**

1. [Option ID = 8495]
2. [Option ID = 8496]
3. [Option ID = 8494]
4. [Option ID = 8493]

**Correct Answer :-**

- [Option ID = 8496]

**33)**  
**[Question ID = 2103]**

1. [Option ID = 8412]
2. [Option ID = 8409]
3. [Option ID = 8411]
4. [Option ID = 8410]

**Correct Answer :-**

- [Option ID = 8411]

**34)**  
**[Question ID = 2117]**

1. [Option ID = 8466]
2. [Option ID = 8465]
3. [Option ID = 8467]
4. [Option ID = 8468]

**Correct Answer :-**

- [Option ID = 8466]

**35)**

**[Question ID = 2115]**

1. [Option ID = 8459]
2. [Option ID = 8457]
3. [Option ID = 8460]
4. [Option ID = 8458]

**Correct Answer :-**

- [Option ID = 8458]

**36)**

**[Question ID = 2125]**

1. [Option ID = 8498]
2. [Option ID = 8497]
3. [Option ID = 8499]
4. [Option ID = 8500]

**Correct Answer :-**

- [Option ID = 8497]

**37)**

**[Question ID = 2098]**

1. [Option ID = 8391]
2. [Option ID = 8390]
3. [Option ID = 8392]
4. [Option ID = 8389]

**Correct Answer :-**

- [Option ID = 8391]

**38)**

**[Question ID = 2135]**

1. [Option ID = 8540]
2. [Option ID = 8537]
3. [Option ID = 8538]
4. [Option ID = 8539]

**Correct Answer :-**

- [Option ID = 8537]

**39)**

**[Question ID = 2134]**

1. [Option ID = 8535]
2. [Option ID = 8533]
3. [Option ID = 8534]
4. [Option ID = 8536]

**Correct Answer :-**

- [Option ID = 8533]

**40) [Question ID = 2137]**

1. [Option ID = 8545]
2. [Option ID = 8548]
3. [Option ID = 8546]
4. [Option ID = 8547]

**Correct Answer :-**

- [Option ID = 8545]

**41) [Question ID = 2131]**

1. [Option ID = 8521]
2. [Option ID = 8524]
3. [Option ID = 8523]
4. [Option ID = 8522]

**Correct Answer :-**

- [Option ID = 8522]

**42) [Question ID = 2122]**

1. [Option ID = 8485]
2. [Option ID = 8488]
3. [Option ID = 8487]
4. [Option ID = 8486]

**Correct Answer :-**

- [Option ID = 8488]

**43) [Question ID = 2127]**

1. [Option ID = 8508]
2. [Option ID = 8505]
3. [Option ID = 8507]
4. [Option ID = 8506]

**Correct Answer :-**

- [Option ID = 8508]

**44) [Question ID = 2128]**

1. [Option ID = 8510]
2. [Option ID = 8511]
3. [Option ID = 8509]
4. [Option ID = 8512]

**Correct Answer :-**

- [Option ID = 8510]

**45) [Question ID = 2126]**

1. [Option ID = 8503]
2. [Option ID = 8504]

3. [Option ID = 8501]
4. [Option ID = 8502]

**Correct Answer :-**

- [Option ID = 8502]

**46)**  
**[Question ID = 2113]**

1. [Option ID = 8449]
2. [Option ID = 8451]
3. [Option ID = 8452]
4. [Option ID = 8450]

**Correct Answer :-**

- [Option ID = 8452]

**47)**  
**[Question ID = 2120]**

1. [Option ID = 8477]
2. [Option ID = 8480]
3. [Option ID = 8478]
4. [Option ID = 8479]

**Correct Answer :-**

- [Option ID = 8480]

**48)**  
**[Question ID = 2140]**

1. [Option ID = 8557]
2. [Option ID = 8559]
3. [Option ID = 8558]
4. [Option ID = 8560]

**Correct Answer :-**

- [Option ID = 8559]

**49)**  
**[Question ID = 2118]**

1. [Option ID = 8472]
2. [Option ID = 8470]
3. [Option ID = 8469]
4. [Option ID = 8471]

**Correct Answer :-**

- [Option ID = 8471]

**50)**  
**[Question ID = 2105]**

1. [Option ID = 8418]
2. [Option ID = 8420]
3. [Option ID = 8417]
4. [Option ID = 8419]

**Correct Answer :-**

- [Option ID = 8420]