

بحاول أذكر لكم الفاينل حقنا..

Courses > [IS 466](#)

وتجدون كل الملفات المتعلقة بالمادة على [الدرايف](#)

### السؤال الأول:

a- جاب لنا نفس الفكرة هذي وكانت One unit

**Question No. 1.** An Ontario company receives two units of a product at the beginning of each week. There is no cost of placing orders as production is done in-house. The weekly demand for the product has the following probability distribution:

<u>Demand</u>	<u>Probability</u>	<u>Random Number</u>
0	.12	
1	.20	
2	.45	
3	.23	

Simulate 10 weeks of the inventory system:



<u>Week</u>	<u>Random Number</u>	<u>Beginning Inventory</u>	<u>Demand</u>	<u>Ending Inventory</u>	<u>Lost Sales</u>
1	82	_____	_____	_____	_____
2	46	_____	_____	_____	_____
3	09	_____	_____	_____	_____
4	28	_____	_____	_____	_____
5	55	_____	_____	_____	_____
6	77	_____	_____	_____	_____
7	84	_____	_____	_____	_____
8	51	_____	_____	_____	_____
9	86	_____	_____	_____	_____
10	89	_____	_____	_____	_____



The cost of a lost sale is \$5.00 and the cost of holding inventory is \$0.04 per unit per week (based on average inventory). Assuming a 50-week year, find the total annual cost of this inventory policy. What recommendation would you make for reducing the total annual cost?

b- نفس السؤال الثاني في الأسايمنت الخامس.

ملاحظة: في السؤال الأول حدد ال Scale : 99-00 وهذي نقطة مهمة لان ال Random number interval راح يبدأ من 00 بدلا من 01.

## السؤال الثاني:

نفس الفكرة الموجودة في الاسئلة السابقة:

Question No. 5. (6 marks) Suppose we have five symbols A B C D E with probabilities:

$$P_A = 1/4 \quad P_B = 1/8 \quad P_C = 1/8 \quad P_D = 1/4 \quad P_E = 1/4$$

Calculate (i) entropy (H) and (ii) information quantity (I) ?

وهذي:

If code (A) = 01, code (B) = 001, code (C) = 101, code (D) = 10, code (E) = 11

So string of 5 symbols **ADDCBE** is 01101010100111 (14 bits)

For **ADDCBE** symbols we need 14 bits, the average bits per symbol is 2.33

الفقرة الثانية جاب جدول مشابه لهذا حتى ممكن يكون نفسه:

Outlook	Temperature	Humidity	Windy	Play
sunny	hot	high	FALSE	no
sunny	hot	high	TRUE	no
overcast	hot	high	FALSE	yes
rainy	mild	high	FALSE	yes
rainy	cool	normal	FALSE	yes
rainy	cool	normal	TRUE	no
overcast	cool	normal	TRUE	yes
sunny	mild	high	FALSE	no
sunny	cool	normal	FALSE	yes
rainy	mild	normal	FALSE	yes
sunny	mild	normal	TRUE	yes
overcast	mild	high	TRUE	yes
overcast	hot	normal	FALSE	yes
rainy	mild	high	TRUE	no

المطلوب كان:

- a. Calculate the information quantity  $\{ I(p,n) \}$  needed to decide whether  $s$  belongs to  $P$  or  $N$ ?
  - b. Find Entropy ( $E$ ) attribute Windy
  - c. Find gain ( $G$ ) for attribute Windy
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السؤال الثالث: مقالي

- a. Describe the components of Expert System (ES)
  - b. What is the purpose of reason maintenance?
  - c. Is there any difference between knowledge base and ES, if yes what is the difference?
  - d. Describe the main type of inference in ES
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السؤال الرابع:

a- جدول فيه transactions وعطانا  $2 = \text{min\_support}$   
Association rules Apriori algorithm

b- الفقرة الثانية عطانا itemset  $\{A B C E\}$  وطلب كل rules (subset) التي تتوافق مع  
 $\text{min\_Confidence} = 70\%$

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## السؤال الخامس:

Question No. 5: Circle the correct answer for True/False and MCQs.

1. In random number mapping, the number assigned correspond to the outcome of an event must be chosen randomly.  
(a) True (b) False
2. Monte Carlo simulation are applied to scenarios in which a random process generates relevant occurrences.  
(a) True (b) False
3. Apriori pruning principle states that for any frequent item set, its superset should not be generated.  
(a) True (b) False
4. The information quantity of two independent variables X and Y is  $h(X,Y)$   
(a) True (b) False
5. The ID3 algorithm is a greedy algorithm states that a tree is constructed in a top-down, recursive, divide and conquer manner.  
(a) True (b) False
6. In induction tree technique, attributes are categorical. Whereas, if they are continuous-valued, they are discretized in advance.  
(a) True (b) False
7. One of the advantage of expert system is we can apply expert system on judgement and institution.  
(a) True (b) False
8. One of the limitation of expert system is it works well only in a narrow domain of knowledge.  
(a) True (b) False
9. Unlike human experts, expert systems do not need to explain their views, recommendations, or decisions.  
(a) True (b) False
10. Inference is a collection of specialized facts, procedures, and judgment usually expressed as rules.  
(a) True (b) False
11. Knowledge rules, or declarative rules, state all the facts and relationships about a problem.  
(a) True (b) False
12. The information quantity (H) associated to an event is directly proportional with its probability.  
(a) True (b) False
13. Which of the following type of probabilities is computed by summing all the previous probabilities up to the current random variable value?  
a) Cumulative c) Conditional  
b) Marginal d) Joint
14. A simulation study \_\_\_\_\_.  
a) evaluates options. c) generates optimal solutions.  
b) generates options. d) evaluates parameters.
15. Which of the following module is not the core component expert systems?  
a) inference engine c) knowledge refinement subsystem  
b) user interface subsystem d) knowledge base subsystem
16. One way to increase the probability of identifying the optimal decision when using a simulation is to:  
a) use a discrete instead of continuous random variable.  
b) change the assignment of the random numbers.  
c) increase the number of iterations of the simulation.  
d) include more random variables in the simulation.