Kafrelsheikh University	**Undergraduate Program** **Academic Year** **2018/2019** **Final Enterprise Architecture (IT441)** **(60 marks)** **2 Pages**	College of Computers and Information

Date: *31/12/2018* **Time: 180 minutes**

Question number one: **(40 Marks)**

a. Choose the most correct answer: (30 Marks)

1. A system that approximates the way a human sees, hears, and feels objects known as:

a. Expert Systems,	b. Vision system,	c. Perceptive system,	d. Learning systems,	e. none is true

2. Which conflict rule that, once a rule has fired, it may not fire again until the working memory elements that match its LHS have been modified:

a. Refraction,	b. Recency,	c. Specificity,	d. Heuristic control,	e. none is true

3. Displaying how a result has been achieved, done by which feature of Production System:

a. Modularity,	b. Efficiency,	c. Seperation,	d. Tracing and explanation,	e. none is true

4. Which conflict rule that provide functions to evaluate the strength of each rule:

a. Refraction,	b. Recency,	c. Specificity,	d. Heuristic control,	e. none is true

5. Which features of Production System, that supports the incremental development of production systems by successively adding, deleting, or changing the knowledge (rules) of the system:

a. Modularity,	b. Efficiency,	c. Seperation,	d. Tracing and explanation,	e. none is true

6. Which conflict rule that, matches fewer potential working memory situations:

a. Refraction,	b. Recency,	c. Specificity,	d. Heuristic control,	e. none is true

7. Independency of Rules and the "recognize-act" algorithm done by which feature of Production System:

a. Modularity,	b. Efficiency,	c. Seperation,	d. Tracing and explanation,	e. none is true

8. Compares each rule stored in the knowledge base with facts contained in the database:

a. Rule-based Expert System,	b. Inference Engine,	c. Inference Chain,	d. Tracing and explanation,	e. none is true

9. A system that Explain their reasoning or suggested decisions, draw conclusions from complex relationships:

a. Expert Systems,	b. Vision system,	c. Perceptive system,	d. Learning systems,	e. none is true

10. Which conflict rule that, prefers LHSs matched with the newly added working memory items:

a. Refraction,	b. Recency,	c. Specificity,	d. Heuristic control,	e. none is true

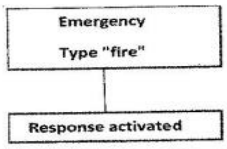
11. Indicates how an expert system applies the rules to reach a conclusion:

a. Rule-based Expert System,	b. Inference Engine,	c. Inference Chain,	d. Tracing and explanation,	e. none is true

b. Describe Zachman framework approaches for describing the elements of enterprise architecture? (10 Marks)

Question number two: **(20 Marks)**

a. Suppose there is a relation called emergency with slot "Type". Then if the emergency "Fire" the system prints "Response activated", assume the rule name is "Danger". Write clips program to solve the following. (10 Marks)



b. EA benefits can be realized in a four different categories, illustrate each of them and graph the relations among them: (5 Marks)

c. Using a graph, highlight the gap analysis between the current and future Technology Architectures. (5 Marks)

Best Regards

Dr/Mai Ramadan

Kafrelsheikh University
Faculty of Computers & Information
Subject: Advanced Database
Time Allowed: 3 Hours
Code: IS411

Full marks: 60
Date: 3 / 1 /2019
Pages (2)

Answer the following questions

Question1: **(20 points)**

Write the difference between:

1- Interleaved and parallel processing of concurrent transactions.
2- The lost update and dirty read problem.
3- OLTP and OLAP.
4- Roll-up and Drill-down operations.
5- Star and Snowflake schema.

Question2: **(10 points)**

Write short notes:

1- ACID properties
2- ETL Manager
3- Supervised Learning
4- Data Mart
5- Transaction States

Question3: **(5 points)**

Test the following schedule for Conflict Serializablity

Transaction T_1
read_item(X);
write_item(X);
read_item(Y);
write_item(Y);

Transaction T_2
read_item(Z);
read_item(Y);
write_item(Y);
read_item(X);
write_item(X);

Transaction T_3
read_item(Y);
read_item(Z);
write_item(Y);
write_item(Z);

(باقى الأسئلة فى الخلف)

Question4: **(10 points)**

Mark the following sentences with True or False and correct the false ones:

1- S: $r_1(x)$; $r_2(x)$; $w_1(x)$; $r_1(y)$; $w_2(x)$; c_2; $w_1(y)$; c_1; is cascadless. ( )

2- S: $r_3(x)$; $r_1(x)$; $w_3(x)$; $r_1(y)$; $w_1(x)$; c3; $r_1(x)$; c_1; is strict. ( )

3- S: $r_1(x)$; $w_1(x)$; $r_1(y)$; $w_1(y)$; $r_2(x)$; $w_2(x)$; is not serializable. ( )

4- S: $r_1(x)$; $w_1(x)$; $r_1(y)$; $r_2(x)$; $w_2(x)$; c_2; $w_1(y)$; c_1; is non recoverable. ( )

5- S: $r_2(x)$; $w_2(x)$; c_2; $r_1(x)$; $w_1(x)$; $r_1(y)$; $w_1(y)$; c_1; is strict ( )

Question5: **(15 points)**

Explain:

1. Categories of OLAP Servers.
2. Different techniques of data mining.
3. How to protect databases against threats?

أنتهت الأسئلة
مع تمنياتى بالتوفيق
Dr. Diana TharwatMosa

Kafrelsheikh University
Faculty of computers and information
4rd level Final Exam
Date: / /

Subject: Computer Vision
Time allowed: 3 Hours
Pages: two Pages

Answer the following questions

Question 1 [Marks]

1. What are the three types of image processing (transformation algorithms)?
2. What are the main factors that determine the good quality of image?
3. Perform Histogram Stretching for the Histogram shown in the following table so that the new image has a dynamic range of 0 to 7 [0, 7].

Gray Levels	0	1	2	3	4	5	6	7
No. of Pixels	0	0	50	60	50	20	10	0

You may use the following equation:

$$v_{new} = (v_{old} - old_{min}) * \left(\frac{new_{max} - new_{min}}{old_{max} - old_{min}}\right) + new_{min}$$

Question 2 [Marks]

1. Design ***one*** perceptron that implements the following Boolean functions:
   1. A V B (V means OR)
   2. ¬A∧¬B (∧ means and, ¬ means not)
2. In the Backpropagation Algorithm what are ***delta rule*** for output layers and hidden layers.
3. **Apply the** Perceptron Learning Rule and Incremental (Stochastic) Gradient Descent using the training examples for the Enjoy Sport concept shown in **Table. 1.**

Table 1

Sky	Temp	Water	Enjoy Sport
Sunny	Warm	Warm	+
Cloudy	Warm	Cool	+
sunny	Cool	Warm	-

Table 2

Sky	Temp	Water	Enjoy Sport
Cloudy	Cool	Cool	?

Assuming η=0.1, w_0= 0.5, w_1= 0.5, w_2=0.5, w_3=0.5

Assuming The max number of iteration =2.

Use The value 1 for Sunny, Warm

Use The value -1 for Cloudy, Cool

***Then** use the output hypothesizes to classify the example in Table 2*

Question 3 **[Marks]**

A- Fill The template for the Gaussian operator such that m = n = 5, σ = 1, the Gaussian relationship is as follows.

$$G_\sigma(x,y) = \frac{1}{2\pi\sigma^2} \exp -\frac{x^2 + y^2}{2\sigma^2}$$

B- **What** is the edge detection, **what** are the different methods for edge detection and **explain one method with an example**?

C- **What is an interest point and what are the A key advantages of them**?

D- **Why we want to extract features?**

E- **What** are the Properties of a good interest points detector?

F- **Explain** in brief the Harris Corner Detector?

with my best wishes Dr: Medhat A. Tawfik

Kafrelsheikh University
Faculty of computers and information
4th level IT Final Exam
Date: 14 /1/2019

Subject: E-Commerce
Time allowed: 3 hrs.
Pages: two Pages

Question 1: [16 Marks]

1.1. What is e-commerce? How does it differ from e-business? Where does it intersect with e-business?

1.2. List Unique Features of E-commerce Technology??

1.3. Write a short note about three Types of E-commerce?

1.4. Give examples of B2C, B2B, C2C, and social, mobile, and local e-commerce?

Question 2: [16 Marks]

2.1. Write a short note with graph about Web Site Systems Development Life Cycle?

2.2. What is a business model? How does it differ from a business plan?

2.3. What are the eight key components of an effective business model?

2.4. What forms of information or content do content providers offer?

Question 3: [16 Marks]

3.1. Discuss the differences between a simple logical and a simple physical Web site design?

3.2. What are the main differences between single-tier and multi-tier site architecture?

3.3. What are the main factors to consider when choosing the best hardware platform for your Web site?

3.4. Discuss Common Online Electronic Payment System?

Question 4: Choose the correct answer **[12 Marks]**

1- ..... Does not include commercial transactions involving an exchange of value across organizational boundaries

a) E-Commerce

b) E-business

c) Mobile Commerce

2- ..... is an online businesses attempt to reach individual consumers.

a) B2C

b) B2B

c) C2C

3- which of the following is not Successful e-commerce value propositions.

a) Personalization

b) customization

c) Advertising revenue

4- ..... is one of Revenue Model types

a) Advertising

b) Facilitation of transactions

c) Reduction of product search

5- ..... is hiring vendors to provide services involved in building site..

a) Hosting

b) Outsourcing

c) Co-location

6- which one of the following is not Components of budget

a) System maintenance

b) Software

c) Dynamic page generation

with my best wishes Dr: Reda M. Hussien

Kafrelsheikh University	Undergraduate Program Academic Year 2018/2019 Network Analysis and Design (IT451) (60 marks) 2 Pages	College of Computers and Information

Date: *17/1/2019* **Time: 180 minutes**

Question number one: **(30 Marks)**

a. Choose the Most Correct Answer: (20 Marks)

1) The ability to adjust configuration and size to fit new conditions is known as:

a. Mobility,	b. Tele-presence,	c. Network Audit,	d. Network Scalability,	e. Application Compatibility,	f. Legacy applications,

2) Which of the following network design approaches, allows a quick solution which may result in inappropriate design:

a. Top-Down Approach,	b. bottom-up approach,	c. none is true,	d. all true,

3) The use of virtual reality technology, especially for remote control of machinery or for apparent participation in distant events is known as:

a. Mobility,	b. Tele-presence,	c. Network Audit,	d. Network Scalability,	e. Application Compatibility,	f. Legacy applications,

4) Which of the following could be an organizational constraint in identifying design requirements:

a. Budget,	b. Personnel,	c. Schedule	d. Policy	e. a & c	f. all true

5) Which of the following is an enterprise edge submodule:

a. E-commerce networks,	b. DMZ,	c. VPN and remote access,	c. none is true,	d. all true,

6) Are obsolete or unstable because of compatibility issues with current operating systems (OSes):

a. Mobility,	b. Tele-presence,	c. Network Audit,	d. Network Scalability,	e. Application Compatibility,	f. Legacy applications,

7) Which of the following network testing ways, leads to proving the design and moving forward with implementation:

a. Pilot Test,	b. Prototype Test,	c. none is true,	d. both are true,

8) Provide information such as: Network device list, Hardware models, Software versions, Configuration of network devices:

a. Mobility,	b. Tele-presence,	c. Network Audit,	d. Network Scalability,	e. Application Compatibility,	f. Legacy applications,

9) Which of the following network design approaches, meets current and future requirement which may result time consuming:

a. Top-Down Approach,	b. bottom-up approach,	c. none is true,	d. all true,

10) In Which of the following network testing ways, A failure leads to correcting the design and repeating the tests to correct any deficiencies:

a. Pilot Test,	b. Prototype Test,	c. none is true,	d. both are true,

b. Using a graph illustrate the multi-homing solutions to provide redundancy or failover for Internet service: (10 Marks)

Question number two: **(30 Marks)**

a. Case Study: PHARMA drug Store Network Design: (15 Marks)

PHARMA store has two buildings separated by 20 meter. The two buildings have two floors each. PHARMA has 100 severs.

1. What is the application communication should be used:
   a. Peer to peer
   b. Client server
   c. Server Farm
   d. Enterprise Edge
2. What is the geographical consideration of this system?
   a. Intrabuilding
   b. Interbuilding
   c. Remote Distance
3. As a network designer, List the specifications of media cables that should be used to increase performance, assume the budget limited to 16,000 for cables.

b. Discuss how VSS solves the STP looping problem, stating benefits of VSS using a graph. (10 Marks)

c. Give examples to NetFlow fields? (5 Marks)

Best Regards

Dr/Mai Ramadan