

فيلسوف



Tanta University
Faculty of Science
Mathematics Department
(Computer Science Deviation)



Computer Security Final Term Exam (4th year)

2014-2015

Second Term

Time Allowed: 2 Hours

Solve the following questions

Question 1:

- a- Construct a Playfair matrix with the key "keyword" to encrypt the message "The Meeting was canceled".
- b- Encrypt the message "Top Secret" using the Hill cipher with the key $\begin{pmatrix} 1 & 4 \\ 5 & 3 \end{pmatrix}$. Show your calculations and the result.

Question 2:

- a- Draw steps of DES algorithm from plain text to cipher text.
- b- Mention how the subkey generated for each round in DES algorithm?
- c- What are the operations performed in each round in DES algorithm?

Question 3:

- a- "The number of rounds depends on the block size and the length of the key in AES algorithm". Explain this statement?
- b- What are the operations performed in each round in AES algorithm?

Good luck

TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF MATHEMATICS				
EXAMINATION FOR SENIORS STUDENTS (FOURTH YEAR) STUDENTS OF COMPUTER SCIENCE				
COURSE TITLE: TIME SERIES			COURSE CODE: ST4204	
DATE: 23-5-2015	JON,...	TERM: SECOND	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions (each question of 20 marks):

1- A- Define: 1- Irregular variation 2- Cyclic variation

B- Deduce the parameters estimates \hat{a} , \hat{b} for the exponential trend model $y = ae^{bt}$.

2- For the following data calculate the quadratic model and the trend value of 1990 :

t	1980	1981	1982	1983	1984
y	12	10	11	13	9

3- A - Using the method of semi average to obtain the trend values for the following data by taking the average as the mean :

year	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
data	9.74	9.26	8.86	8.25	7.81	8.01	7.55	7.24	7.01	6.88	7.03

B- Consider the following data:

time	1990	1991	1992	1993	1994	1995	1996
sales	2	4	7	1	2	3	5

1- Obtain the fourth order moving average. 2- Find the third order moving median.

4- For the following data calculate the seasonal index and the adjusted data:

season	1994	1995	1996
Summer	6.2	6.5	6.4
Winter	8.1	7.9	8.3
Autumn	8	8.2	7.9
Spring	7.2	7.7	7.5

5- Calculate the weighted index number for the following data :

item	1995		2000	
	price	quantity	price	quantity
A	2	20	3	21
B	18	3	36	2
C	3	18	4	23

EXAMINERS	PROF. DR./	DR/ ADEL EDRESS
	DR/	DR/

With my best wishes

