Mid Term Exam.

NAME: الورقة الثانية صينية

A – If an applied voltage to a capacitive reactance of
$C = 5$ UF is given by:
$V(t) = 10 \sin 314\, t + 15 \cos 942t + 50 \sin(1570\, t + 30°)$
Find and write the equation of the resultant current.

B – For the circuit shown in Fig.1, calculate the power
in the load of 10 Ω using Thevenin theorem.

C – For the circuit shown in Fig.2, Determine the
average power delivered by $500\angle 0°$ voltage source
and also by dependent source.

Fig.1
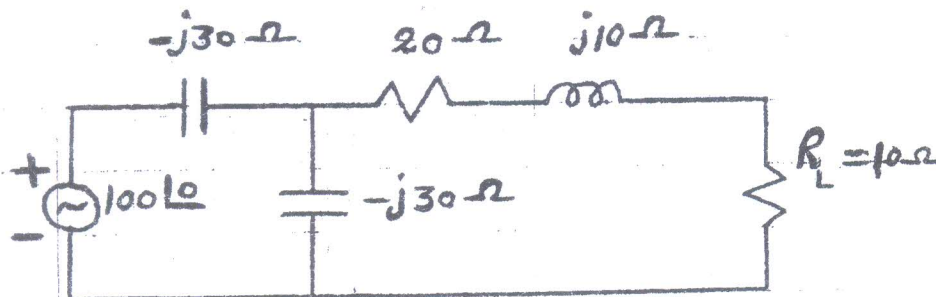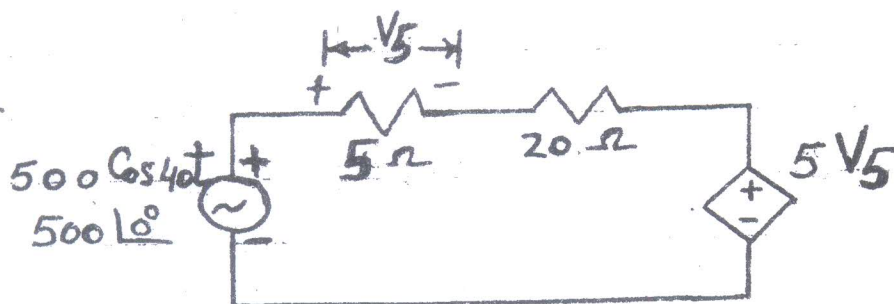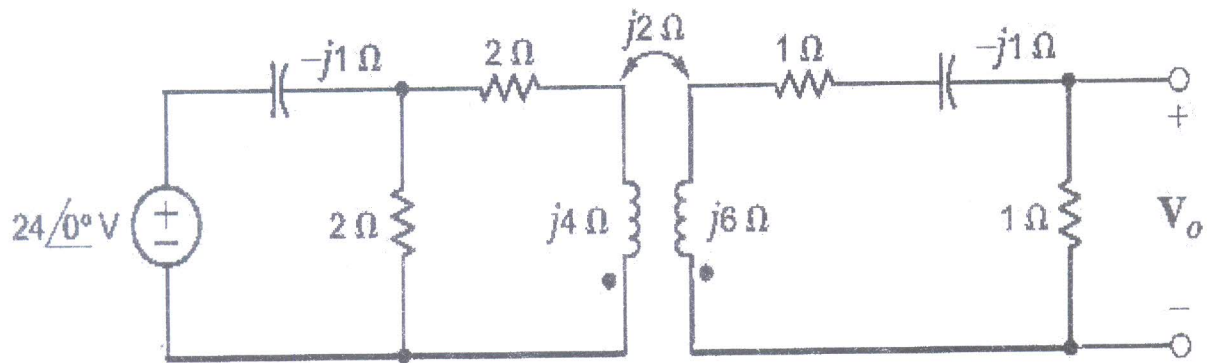

Fig. 2
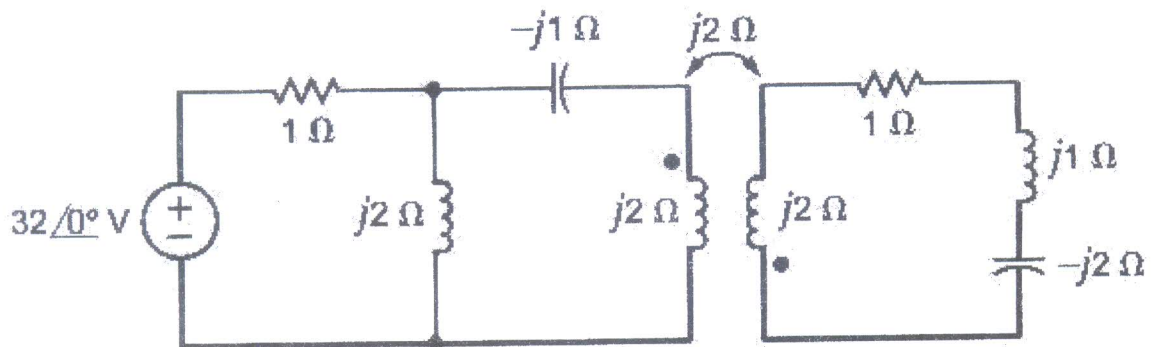
Question [Part 2]

A. Find the output voltage V₀ in the network in Fig. (A1)

Fig. (A1)

B. Find the impedance seen by the source in the circuit in Fig. (A2)

Fig. (A2)

MENOUFIA UNIVERSITY
Menouf, Faculty of Electronic Eng.
Department of Phys. & Eng. Math.
Eng. Math 6, Med_Term exam
Second Year

جامعة المنوفية
كلية الهندسة الإلكترونية بمنوف
قسم الفيزيقا والرياضيات الهندسية
اختبار ريض٥ (نصف الفصل)
الفرقة الثانية

الأحد ٣ نوفمبر ٢٠١٩

Answer four questions

1) Find the missing entry in the following table

x	0	1	2	3	4	5
y	0	2.71828	14.7781	--	218.393	742.066

2. a) Redraw the table in your answer paper and complete the table as the example which given in first row.

Number	Significant figures	No. of Significant figures
37.89	3, 7, 8, 9	4
35.800		
3.50×10^5		
60×10^2		
45500		

2. b) If we assume that $\pi = \dfrac{22}{7}$ such that the exact decimal representation of π is 3.141592654 then find the value of π correctly rounded to 4 decimal places.

3) Find the least squares line approximating the data in the following Table

i	1	2	3	4	5
x_i	1	3	5	7	9
y_i	1.3	4.2	7.0	10.1	13.0

4) Determine the Padé approximant [1/1] of the exponential function e^{-2x}.

5) Use data in the following table to evaluate $f(0.6)$.

x	0	1	2	3	5
y	0	2.824	8.588	16.24	32.94

Faculty of Electronic Engineering
Electrical Comm. Engineering Dept.
  1st term- (2nd year)

Name:

Subject: *Fields and Waves*
Midterm Exam
Allowed Time: 1 Hour

Sec.:

Answer as much as you can

[1] Question One:

A) If $\bar{D} = e^{-x} sin y \, \hat{a}_x - e^{-x} cos y \, \hat{a}_y + 2z \, \hat{a}_z$ (C/m^2) at the point P located at the center of a volume element ΔV. Find the charge enclosed if $\Delta V = 2 \times 10^{-9}$ m^3.

B) Given the point A(x=2 ,y=3 ,z=-1) and B(r=4 , θ=250 ,Φ=1200), Find

  (1) The spherical co-ordinates of A   (2) The Cartesian co-ordinates of B

  (3) The distance from A to B.

C) Potential is given by V= 2(x+1)^2 (y+2)^2 (z+3)^2 V in free space. At point P (2,1,4) calculate:

  (1) The potential at point P,   (2) electric field intensity E at point P,

  (3) volume charge density at P.

D) In a field $\bar{E} = -50y \, \hat{a}_x - 50x \, \hat{a}_y + 30 \, \hat{a}_z$ V/m, calculate the amount of work done in moving 2 μC charge from A(1,2,3) to B(2,4,1).