Universidad Autónoma de Coahuila

Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14137625***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***JESUS EMMANUEL MORALES MENUIOLA***		

Answers

1.

Figure 1

(a) $I = (1.0113 - \text{j}0.491\,31)\,\text{A}$
(b) $V_R = (40.4527 - \text{j}19.6523)\,\text{V}$
(c) $V_L = (13.8914 + \text{j}28.5943)\,\text{V}$
(d) $V_C = (-4.3441 - \text{j}8.942)\,\text{V}$
(e) $v(0.05) = -1.7328 \times 10^{-13}\,\text{V}$
(f) $i(0.05) = 0.694\,81\,\text{A}$
(g) $v_R(0.05) = 27.7926\,\text{V}$
(h) $v_L(0.05) = -40.4385\,\text{V}$
(i) $v_C(0.05) = 12.6459\,\text{V}$

Figure 2

(a) $V_{R1} = (42.6831 + \text{j}11.3748)\,\text{V}$
(b) $V_{R2} = V_L = V_C = (7.316\,89 - \text{j}11.3748)\,\text{V}$
(c) $I_{R1} = (1.0671 + \text{j}0.284\,37)\,\text{A}$
(d) $I_{R2} = (0.182\,92 - \text{j}0.284\,37)\,\text{A}$
(e) $I_L = (-0.4023 - \text{j}0.258\,78)\,\text{A}$
(f) $I_C = (1.2865 + \text{j}0.827\,52)\,\text{A}$
(g) $v(0.05) = -1.7328 \times 10^{-13}\,\text{V}$
(h) $v_{R1}(0.05) = -16.0863\,\text{V}$
(i) $v_{R2}(0.05) = v_L(0.05) = v_C(0.05) = 16.0863\,\text{V}$
(j) $i_{R1}(0.05) = -0.402\,16\,\text{A}$
(k) $i_{R2}(0.05) = 0.402\,16\,\text{A}$
(l) $i_L(0.05) = 0.365\,97\,\text{A}$
(m) $i_C(0.05) = -1.1703\,\text{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	4.9497	4.4563	1.4142	1.1107
b	3.5	2.2282	2	1.5708
c	2.1213	1.9099	1.4142	1.1107
d	1.7321	1.5	1.7321	1.1547
e	1.1547	1	1.7321	1.1547
f	9	9	1	1
g	2.8284	2	1.4142	1.4142

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Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14121732***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***JOEL GERARDO AGUERO LLANAS***		

Answers

1.

Figure 1

(a) $I = (1.3979 + \text{j}0.054\,606)\,\text{A}$
(b) $V_R = (69.8933 + \text{j}2.730\,28)\,\text{V}$
(c) $V_L = (-0.617\,576 + \text{j}15.8095)\,\text{V}$
(d) $V_C = (0.724\,23 - \text{j}18.5398)\,\text{V}$
(e) $v(0.07) = 58.1878\,\text{V}$
(f) $i(0.07) = 1.0995\,\text{A}$
(g) $v_R(0.07) = 54.9753\,\text{V}$
(h) $v_L(0.07) = -18.6014\,\text{V}$
(i) $v_C(0.07) = 21.8138\,\text{V}$

Figure 2

(a) $V_{R1} = (38.3536 - \text{j}10.3019)\,\text{V}$
(b) $V_{R2} = V_L = V_C = (31.6464 + \text{j}10.3019)\,\text{V}$
(c) $I_{R1} = (0.767\,07 - \text{j}0.206\,04)\,\text{A}$
(d) $I_{R2} = (0.632\,93 + \text{j}0.206\,04)\,\text{A}$
(e) $I_L = (0.910\,88 - \text{j}2.7982)\,\text{A}$
(f) $I_C = (-0.776\,74 + \text{j}2.3861)\,\text{A}$
(g) $v(0.07) = 58.1878\,\text{V}$
(h) $v_{R1}(0.07) = 43.6681\,\text{V}$
(i) $v_{R2}(0.07) = v_L(0.07) = v_C(0.07) = 14.5196\,\text{V}$
(j) $i_{R1}(0.07) = 0.873\,36\,\text{A}$
(k) $i_{R2}(0.07) = 0.290\,39\,\text{A}$
(l) $i_L(0.07) = 3.9586\,\text{A}$
(m) $i_C(0.07) = -3.3756\,\text{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	6.364	5.7296	1.4142	1.1107
b	1	0.636 62	2	1.5708
c	2.8284	2.5465	1.4142	1.1107
d	2.8868	2.5	1.7321	1.1547
e	4.6188	4	1.7321	1.1547
f	5	5	1	1
g	2.6833	1.2	2.2361	2.2361

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Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14124427***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***JERSON CHAVEZ ORTIZ***		

Answers

1.

Figure 1

(a) $I = (1.1666 + \text{j}0.004\,661\,9)\,\text{A}$
(b) $V_R = (69.9989 + \text{j}0.279\,716)\,\text{V}$
(c) $V_L = (-0.026\,363 + \text{j}6.5972)\,\text{V}$
(d) $V_C = (0.027\,48 - \text{j}6.877)\,\text{V}$
(e) $v(0.07) = 3.637 \times 10^{-14}\,\text{V}$
(f) $i(0.07) = -0.006\,593\,\text{A}$
(g) $v_R(0.07) = -0.395\,58\,\text{V}$
(h) $v_L(0.07) = -9.3299\,\text{V}$
(i) $v_C(0.07) = 9.7255\,\text{V}$

Figure 2

(a) $V_{R1} = (36.5572 - \text{j}7.216\,44)\,\text{V}$
(b) $V_{R2} = V_L = V_C = (33.4428 + \text{j}7.216\,44)\,\text{V}$
(c) $I_{R1} = (0.609\,29 - \text{j}0.120\,27)\,\text{A}$
(d) $I_{R2} = (0.557\,38 + \text{j}0.120\,27)\,\text{A}$
(e) $I_L = (1.2761 - \text{j}5.914)\,\text{A}$
(f) $I_C = (-1.2242 + \text{j}5.6734)\,\text{A}$
(g) $v(0.07) = 3.637 \times 10^{-14}\,\text{V}$
(h) $v_{R1}(0.07) = 10.2056\,\text{V}$
(i) $v_{R2}(0.07) = v_L(0.07) = v_C(0.07) = -10.2056\,\text{V}$
(j) $i_{R1}(0.07) = 0.170\,09\,\text{A}$
(k) $i_{R2}(0.07) = -0.170\,09\,\text{A}$
(l) $i_L(0.07) = 8.3636\,\text{A}$
(m) $i_C(0.07) = -8.0235\,\text{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	4.2426	3.8197	1.4142	1.1107
b	2	1.2732	2	1.5708
c	4.9497	4.4563	1.4142	1.1107
d	4.6188	4	1.7321	1.1547
e	4.6188	4	1.7321	1.1547
f	5	5	1	1
g	1.8974	1.2	1.5811	1.5811

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Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14156040***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***LUIS ANTNONIO FERNENDEZ CARRASCO***		

Answers

1.

Figure 1

(a) $I = (0.688\,77 - \mathrm{j}0.205\,37)\,\mathrm{A}$
(b) $V_R = (55.1013 - \mathrm{j}16.4294)\,\mathrm{V}$
(c) $V_L = (5.806\,63 + \mathrm{j}19.4744)\,\mathrm{V}$
(d) $V_C = (-0.907\,92 - \mathrm{j}3.045)\,\mathrm{V}$
(e) $v(0.06) = 80.6998\,\mathrm{V}$
(f) $i(0.06) = 1.0161\,\mathrm{A}$
(g) $v_R(0.06) = 81.291\,\mathrm{V}$
(h) $v_L(0.06) = -0.700\,73\,\mathrm{V}$
(i) $v_C(0.06) = 0.109\,57\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (59.4938 + \mathrm{j}3.863\,95)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (0.506\,21 - \mathrm{j}3.8639)\,\mathrm{V}$
(c) $I_{R1} = (0.743\,67 + \mathrm{j}0.048\,299)\,\mathrm{A}$
(d) $I_{R2} = (0.006\,327\,6 - \mathrm{j}0.048\,299)\,\mathrm{A}$
(e) $I_L = (-0.136\,66 - \mathrm{j}0.017\,904)\,\mathrm{A}$
(f) $I_C = (0.874 + \mathrm{j}0.1145)\,\mathrm{A}$
(g) $v(0.06) = 80.6998\,\mathrm{V}$
(h) $v_{R1}(0.06) = 78.3304\,\mathrm{V}$
(i) $v_{R2}(0.06) = v_L(0.06) = v_C(0.06) = 2.3695\,\mathrm{V}$
(j) $i_{R1}(0.06) = 0.979\,13\,\mathrm{A}$
(k) $i_{R2}(0.06) = 0.029\,618\,\mathrm{A}$
(l) $i_L(0.06) = -0.175\,98\,\mathrm{A}$
(m) $i_C(0.06) = 1.1255\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	2.1213	1.9099	1.4142	1.1107
b	4	2.5465	2	1.5708
c	5.6569	5.093	1.4142	1.1107
d	2.3094	2	1.7321	1.1547
e	1.1547	1	1.7321	1.1547
f	4	4	1	1
g	5.02	4.2	1.1952	1.1952

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Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14156037***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***MICHAEL MURILLO MENDEZ***		

Answers

1.

Figure 1

(a) $I = (0.208\,44 - \mathrm{j}0.053\,596)\,\mathrm{A}$
(b) $V_R = (18.7597 - \mathrm{j}4.823\,61)\,\mathrm{V}$
(c) $V_L = (1.4144 + \mathrm{j}5.5006)\,\mathrm{V}$
(d) $V_C = (-0.174\,08 - \mathrm{j}0.677\,03)\,\mathrm{V}$
(e) $v(0.02) = 26.8999\,\mathrm{V}$
(f) $i(0.02) = 0.256\,93\,\mathrm{A}$
(g) $v_R(0.02) = 23.1238\,\mathrm{V}$
(h) $v_L(0.02) = 4.3062\,\mathrm{V}$
(i) $v_C(0.02) = -0.530\,01\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (19.9327 + \mathrm{j}0.817\,561)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (0.067\,293 - \mathrm{j}0.817\,56)\,\mathrm{V}$
(c) $I_{R1} = (0.221\,47 + \mathrm{j}0.009\,084)\,\mathrm{A}$
(d) $I_{R2} = (0.000\,747\,71 - \mathrm{j}0.009\,084)\,\mathrm{A}$
(e) $I_L = (-0.030\,981 - \mathrm{j}0.002\,55)\,\mathrm{A}$
(f) $I_C = (0.251\,71 + \mathrm{j}0.020\,718)\,\mathrm{A}$
(g) $v(0.02) = 26.8999\,\mathrm{V}$
(h) $v_{R1}(0.02) = 27.1667\,\mathrm{V}$
(i) $v_{R2}(0.02) = v_L(0.02) = v_C(0.02) = -0.266\,78\,\mathrm{V}$
(j) $i_{R1}(0.02) = 0.301\,85\,\mathrm{A}$
(k) $i_{R2}(0.02) = -0.002\,964\,2\,\mathrm{A}$
(l) $i_L(0.02) = -0.042\,783\,\mathrm{A}$
(m) $i_C(0.02) = 0.3476\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	5.6569	5.093	1.4142	1.1107
b	1.5	0.954 93	2	1.5708
c	2.1213	1.9099	1.4142	1.1107
d	2.8868	2.5	1.7321	1.1547
e	2.3094	2	1.7321	1.1547
f	2	2	1	1
g	5.6921	5.4	1.0541	1.0541

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Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***11073892***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***JOSUE AMADOR SIFUENTES***		

Answers

1.

Figure 1

(a) $I = (0.398\,95 - \mathrm{j}0.134\,72)\,\mathrm{A}$
(b) $V_R = (35.9055 - \mathrm{j}12.125)\,\mathrm{V}$
(c) $V_L = (4.571\,03 + \mathrm{j}13.536)\,\mathrm{V}$
(d) $V_C = (-0.476\,48 - \mathrm{j}1.411)\,\mathrm{V}$
(e) $v(0.04) = -53.7999\,\mathrm{V}$
(f) $i(0.04) = -0.595\,46\,\mathrm{A}$
(g) $v_R(0.04) = -53.5916\,\mathrm{V}$
(h) $v_L(0.04) = -0.232\,56\,\mathrm{V}$
(i) $v_C(0.04) = 0.024\,242\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (39.8472 + \mathrm{j}1.741\,42)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (0.152\,79 - \mathrm{j}1.7414)\,\mathrm{V}$
(c) $I_{R1} = (0.442\,75 + \mathrm{j}0.019\,349)\,\mathrm{A}$
(d) $I_{R2} = (0.001\,697\,7 - \mathrm{j}0.019\,349)\,\mathrm{A}$
(e) $I_L = (-0.051\,325 - \mathrm{j}0.004\,503\,3)\,\mathrm{A}$
(f) $I_C = (0.492\,37 + \mathrm{j}0.043\,201)\,\mathrm{A}$
(g) $v(0.04) = -53.7999\,\mathrm{V}$
(h) $v_{R1}(0.04) = -52.8333\,\mathrm{V}$
(i) $v_{R2}(0.04) = v_L(0.04) = v_C(0.04) = -0.966\,53\,\mathrm{V}$
(j) $i_{R1}(0.04) = -0.587\,04\,\mathrm{A}$
(k) $i_{R2}(0.04) = -0.010\,739\,\mathrm{A}$
(l) $i_L(0.04) = 0.067\,064\,\mathrm{A}$
(m) $i_C(0.04) = -0.643\,36\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	3.5355	3.1831	1.4142	1.1107
b	3.5	2.2282	2	1.5708
c	4.2426	3.8197	1.4142	1.1107
d	4.0415	3.5	1.7321	1.1547
e	2.8868	2.5	1.7321	1.1547
f	9	9	1	1
g	5.0596	3.2	1.5811	1.5811

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Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***11268436***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***EDUARDO ZALDIVAR MARTINEZ***		

Answers

1.

Figure 1

(a) $I = (0.713\,04 + \mathrm{j}0.029\,858)\,\mathrm{A}$
(b) $V_R = (49.9125 + \mathrm{j}2.090\,05)\,\mathrm{V}$
(c) $V_L = (-0.150\,08 + \mathrm{j}3.5841)\,\mathrm{V}$
(d) $V_C = (0.2376 - \mathrm{j}5.6742)\,\mathrm{V}$
(e) $v(0.05) = -41.5627\,\mathrm{V}$
(f) $i(0.05) = -0.626\,87\,\mathrm{A}$
(g) $v_R(0.05) = -43.8812\,\mathrm{V}$
(h) $v_L(0.05) = -3.9759\,\mathrm{V}$
(i) $v_C(0.05) = 6.2944\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (46.7011 - \mathrm{j}8.461\,12)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (3.2989 + \mathrm{j}8.4611)\,\mathrm{V}$
(c) $I_{R1} = (0.667\,16 - \mathrm{j}0.120\,87)\,\mathrm{A}$
(d) $I_{R2} = (0.047\,128 + \mathrm{j}0.120\,87)\,\mathrm{A}$
(e) $I_L = (1.6833 - \mathrm{j}0.6563)\,\mathrm{A}$
(f) $I_C = (-1.0633 + \mathrm{j}0.414\,56)\,\mathrm{A}$
(g) $v(0.05) = -41.5627\,\mathrm{V}$
(h) $v_{R1}(0.05) = -29.1399\,\mathrm{V}$
(i) $v_{R2}(0.05) = v_L(0.05) = v_C(0.05) = -12.4228\,\mathrm{V}$
(j) $i_{R1}(0.05) = -0.416\,28\,\mathrm{A}$
(k) $i_{R2}(0.05) = -0.177\,47\,\mathrm{A}$
(l) $i_L(0.05) = -0.648\,35\,\mathrm{A}$
(m) $i_C(0.05) = 0.409\,53\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	5.6569	5.093	1.4142	1.1107
b	2.5	1.5915	2	1.5708
c	2.8284	2.5465	1.4142	1.1107
d	4.6188	4	1.7321	1.1547
e	4.0415	3.5	1.7321	1.1547
f	2	2	1	1
g	6.6408	6.3	1.0541	1.0541

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Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14140390***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***LUIS DAVID MARENTES REYES***		

Answers

1.

Figure 1

(a) $I = (0.776\,12 - \mathrm{j}0.277\,02)\,\mathrm{A}$
(b) $V_R = (62.0898 - \mathrm{j}22.1617)\,\mathrm{V}$
(c) $V_L = (9.747\,23 + \mathrm{j}27.3085)\,\mathrm{V}$
(d) $V_C = (-1.8371 - \mathrm{j}5.1468)\,\mathrm{V}$
(e) $v(0.07) = 58.1878\,\mathrm{V}$
(f) $i(0.07) = 0.9621\,\mathrm{A}$
(g) $v_R(0.07) = 76.9681\,\mathrm{V}$
(h) $v_L(0.07) = -23.1419\,\mathrm{V}$
(i) $v_C(0.07) = 4.3615\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (68.5978 + \mathrm{j}6.863\,65)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (1.4022 - \mathrm{j}6.8637)\,\mathrm{V}$
(c) $I_{R1} = (0.857\,47 + \mathrm{j}0.085\,796)\,\mathrm{A}$
(d) $I_{R2} = (0.017\,527 - \mathrm{j}0.085\,796)\,\mathrm{A}$
(e) $I_L = (-0.195\,07 - \mathrm{j}0.039\,85)\,\mathrm{A}$
(f) $I_C = (1.035 + \mathrm{j}0.211\,44)\,\mathrm{A}$
(g) $v(0.07) = 58.1878\,\mathrm{V}$
(h) $v_{R1}(0.07) = 49.1694\,\mathrm{V}$
(i) $v_{R2}(0.07) = v_L(0.07) = v_C(0.07) = 9.0184\,\mathrm{V}$
(j) $i_{R1}(0.07) = 0.614\,62\,\mathrm{A}$
(k) $i_{R2}(0.07) = 0.112\,73\,\mathrm{A}$
(l) $i_L(0.07) = -0.116\,56\,\mathrm{A}$
(m) $i_C(0.07) = 0.618\,44\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	2.1213	1.9099	1.4142	1.1107
b	4.5	2.8648	2	1.5708
c	2.1213	1.9099	1.4142	1.1107
d	2.3094	2	1.7321	1.1547
e	1.1547	1	1.7321	1.1547
f	8	8	1	1
g	1.7889	1.6	1.118	1.118

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Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***12068799***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***JESUS ANTONIO ROBLESREYES***		

Answers

1.

Figure 1

(a) $I = (1.363 + \text{j}0.224\,53)\,\text{A}$
(b) $V_R = (68.1507 + \text{j}11.2263)\,\text{V}$
(c) $V_L = (-1.1286 + \text{j}6.8513)\,\text{V}$
(d) $V_C = (2.977\,86 - \text{j}18.0775)\,\text{V}$
(e) $v(0.07) = -4.8494 \times 10^{-14}\,\text{V}$
(f) $i(0.07) = 0.317\,53\,\text{A}$
(g) $v_R(0.07) = 15.8764\,\text{V}$
(h) $v_L(0.07) = 9.6891\,\text{V}$
(i) $v_C(0.07) = -25.5655\,\text{V}$

Figure 2

(a) $V_{R1} = (66.6792 - \text{j}10.2567)\,\text{V}$
(b) $V_{R2} = V_L = V_C = (3.320\,79 + \text{j}10.2567)\,\text{V}$
(c) $I_{R1} = (1.3336 - \text{j}0.205\,13)\,\text{A}$
(d) $I_{R2} = (0.066\,416 + \text{j}0.205\,13)\,\text{A}$
(e) $I_L = (2.0405 - \text{j}0.660\,65)\,\text{A}$
(f) $I_C = (-0.773\,34 + \text{j}0.250\,38)\,\text{A}$
(g) $v(0.07) = -4.8494 \times 10^{-14}\,\text{V}$
(h) $v_{R1}(0.07) = -14.5052\,\text{V}$
(i) $v_{R2}(0.07) = v_L(0.07) = v_C(0.07) = 14.5052\,\text{V}$
(j) $i_{R1}(0.07) = -0.2901\,\text{A}$
(k) $i_{R2}(0.07) = 0.2901\,\text{A}$
(l) $i_L(0.07) = -0.9343\,\text{A}$
(m) $i_C(0.07) = 0.354\,09\,\text{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	4.2426	3.8197	1.4142	1.1107
b	4.5	2.8648	2	1.5708
c	6.364	5.7296	1.4142	1.1107
d	3.4641	3	1.7321	1.1547
e	4.0415	3.5	1.7321	1.1547
f	2	2	1	1
g	6.1968	4.8	1.291	1.291

Universidad Autónoma de Coahuila

Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14150725***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***LILIANA VERA GLZ***		

Answers

1.

Figure 1

(a) $I = (2.9615 - \text{j}0.337\,77)\,\text{A}$
(b) $V_R = (88.8443 - \text{j}10.1331)\,\text{V}$
(c) $V_L = (3.395\,64 + \text{j}29.772)\,\text{V}$
(d) $V_C = (-2.239\,91 - \text{j}19.6389)\,\text{V}$
(e) $v(0.09) = -6.2349 \times 10^{-14}\,\text{V}$
(f) $i(0.09) = -0.477\,68\,\text{A}$
(g) $v_R(0.09) = -14.3304\,\text{V}$
(h) $v_L(0.09) = 42.104\,\text{V}$
(i) $v_C(0.09) = -27.7736\,\text{V}$

Figure 2

(a) $V_{R1} = (61.7461 + \text{j}21.7518)\,\text{V}$
(b) $V_{R2} = V_L = V_C = (28.2539 - \text{j}21.7518)\,\text{V}$
(c) $I_{R1} = (2.0582 + \text{j}0.725\,06)\,\text{A}$
(d) $I_{R2} = (0.9418 - \text{j}0.725\,06)\,\text{A}$
(e) $I_L = (-2.1637 - \text{j}2.8105)\,\text{A}$
(f) $I_C = (3.2801 + \text{j}4.2606)\,\text{A}$
(g) $v(0.09) = -6.2349 \times 10^{-14}\,\text{V}$
(h) $v_{R1}(0.09) = 30.7617\,\text{V}$
(i) $v_{R2}(0.09) = v_L(0.09) = v_C(0.09) = -30.7617\,\text{V}$
(j) $i_{R1}(0.09) = 1.0254\,\text{A}$
(k) $i_{R2}(0.09) = -1.0254\,\text{A}$
(l) $i_L(0.09) = -3.9746\,\text{A}$
(m) $i_C(0.09) = 6.0254\,\text{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	3.5355	3.1831	1.4142	1.1107
b	2	1.2732	2	1.5708
c	2.8284	2.5465	1.4142	1.1107
d	5.1962	4.5	1.7321	1.1547
e	5.1962	4.5	1.7321	1.1547
f	4	4	1	1
g	5.4222	4.2	1.291	1.291

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Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14125016***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***DAVID OTHONIEL SALDIVAR PEREZ***		

Answers

1.

Figure 1

(a) $I = (1.4799 - \text{j}0.525\,78)\,\text{A}$
(b) $V_R = (44.3959 - \text{j}15.7734)\,\text{V}$
(c) $V_L = (7.928\,56 + \text{j}22.3158)\,\text{V}$
(d) $V_C = (-2.3245 - \text{j}6.5424)\,\text{V}$
(e) $v(0.05) = -67.2499\,\text{V}$
(f) $i(0.05) = -2.2202\,\text{A}$
(g) $v_R(0.05) = -66.6056\,\text{V}$
(h) $v_L(0.05) = -0.911\,53\,\text{V}$
(i) $v_C(0.05) = 0.267\,24\,\text{V}$

Figure 2

(a) $V_{R1} = (46.297 + \text{j}8.880\,42)\,\text{V}$
(b) $V_{R2} = V_L = V_C = (3.703 - \text{j}8.8804)\,\text{V}$
(c) $I_{R1} = (1.5432 + \text{j}0.296\,01)\,\text{A}$
(d) $I_{R2} = (0.123\,43 - \text{j}0.296\,01)\,\text{A}$
(e) $I_L = (-0.5889 - \text{j}0.245\,56)\,\text{A}$
(f) $I_C = (2.0087 + \text{j}0.837\,59)\,\text{A}$
(g) $v(0.05) = -67.2499\,\text{V}$
(h) $v_{R1}(0.05) = -58.3885\,\text{V}$
(i) $v_{R2}(0.05) = v_L(0.05) = v_C(0.05) = -8.8613\,\text{V}$
(j) $i_{R1}(0.05) = -1.9463\,\text{A}$
(k) $i_{R2}(0.05) = -0.295\,38\,\text{A}$
(l) $i_L(0.05) = 0.684\,76\,\text{A}$
(m) $i_C(0.05) = -2.3357\,\text{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	3.5355	3.1831	1.4142	1.1107
b	1.5	0.954 93	2	1.5708
c	1.4142	1.2732	1.4142	1.1107
d	4.0415	3.5	1.7321	1.1547
e	1.1547	1	1.7321	1.1547
f	7	7	1	1
g	3.2863	1.8	1.8257	1.8257

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Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***1205596***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***ALBERTO VAZQUEZ MEDINA***		

Answers

1.

Figure 1

(a) $I = (1.3286 - \text{j}0.600\,51)\,\text{A}$
(b) $V_R = (66.4284 - \text{j}30.0256)\,\text{V}$
(c) $V_L = (15.8471 + \text{j}35.0601)\,\text{V}$
(d) $V_C = (-2.2756 - \text{j}5.0345)\,\text{V}$
(e) $v(0.08) = -107.5998\,\text{V}$
(f) $i(0.08) = -2.0494\,\text{A}$
(g) $v_R(0.08) = -102.4677\,\text{V}$
(h) $v_L(0.08) = -5.9925\,\text{V}$
(i) $v_C(0.08) = 0.8605\,\text{V}$

Figure 2

(a) $V_{R1} = (78.785 + \text{j}6.864\,61)\,\text{V}$
(b) $V_{R2} = V_L = V_C = (1.215 - \text{j}6.8646)\,\text{V}$
(c) $I_{R1} = (1.5757 + \text{j}0.137\,29)\,\text{A}$
(d) $I_{R2} = (0.0243 - \text{j}0.137\,29)\,\text{A}$
(e) $I_L = (-0.260\,13 - \text{j}0.046\,04)\,\text{A}$
(f) $I_C = (1.8115 + \text{j}0.320\,62)\,\text{A}$
(g) $v(0.08) = -107.5998\,\text{V}$
(h) $v_{R1}(0.08) = -102.9657\,\text{V}$
(i) $v_{R2}(0.08) = v_L(0.08) = v_C(0.08) = -4.6341\,\text{V}$
(j) $i_{R1}(0.08) = -2.0593\,\text{A}$
(k) $i_{R2}(0.08) = -0.092\,682\,\text{A}$
(l) $i_L(0.08) = 0.329\,75\,\text{A}$
(m) $i_C(0.08) = -2.2964\,\text{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	5.6569	5.093	1.4142	1.1107
b	2	1.2732	2	1.5708
c	4.2426	3.8197	1.4142	1.1107
d	4.0415	3.5	1.7321	1.1547
e	4.0415	3.5	1.7321	1.1547
f	4	4	1	1
g	2.6833	1.2	2.2361	2.2361

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Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***12666518***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***SAMUEL ROSAS GONZALEZ***		

Answers

1.

Figure 1

(a) $I = (0.757\,87 - \mathrm{j}0.428\,37)\,\mathrm{A}$
(b) $V_R = (37.8937 - \mathrm{j}21.4185)\,\mathrm{V}$
(c) $V_L = (13.1885 + \mathrm{j}23.3331)\,\mathrm{V}$
(d) $V_C = (-1.0822 - \mathrm{j}1.9146)\,\mathrm{V}$
(e) $v(0.05) = 41.5627\,\mathrm{V}$
(f) $i(0.05) = 0.139\,88\,\mathrm{A}$
(g) $v_R(0.05) = 6.9938\,\mathrm{V}$
(h) $v_L(0.05) = 37.6589\,\mathrm{V}$
(i) $v_C(0.05) = -3.0901\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (49.7007 + \mathrm{j}2.719\,14)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (0.299\,33 - \mathrm{j}2.7191)\,\mathrm{V}$
(c) $I_{R1} = (0.994\,01 + \mathrm{j}0.054\,383)\,\mathrm{A}$
(d) $I_{R2} = (0.005\,986\,7 - \mathrm{j}0.054\,383)\,\mathrm{A}$
(e) $I_L = (-0.088\,319 - \mathrm{j}0.009\,722\,5)\,\mathrm{A}$
(f) $I_C = (1.0763 + \mathrm{j}0.118\,49)\,\mathrm{A}$
(g) $v(0.05) = 41.5627\,\mathrm{V}$
(h) $v_{R1}(0.05) = 44.4249\,\mathrm{V}$
(i) $v_{R2}(0.05) = v_L(0.05) = v_C(0.05) = -2.8622\,\mathrm{V}$
(j) $i_{R1}(0.05) = 0.8885\,\mathrm{A}$
(k) $i_{R2}(0.05) = -0.057\,244\,\mathrm{A}$
(l) $i_L(0.05) = -0.084\,539\,\mathrm{A}$
(m) $i_C(0.05) = 1.0303\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	2.8284	2.5465	1.4142	1.1107
b	1	0.636 62	2	1.5708
c	6.364	5.7296	1.4142	1.1107
d	2.3094	2	1.7321	1.1547
e	4.6188	4	1.7321	1.1547
f	6	6	1	1
g	3.3466	2.8	1.1952	1.1952

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Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***12064655***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***EDSON ORLANDONAVARRO RAMIREZ***		

Answers

1.

Figure 1

(a) $I = (1.222 - \text{j}0.2791)\,\text{A}$
(b) $V_R = (85.5378 - \text{j}19.5368)\,\text{V}$
(c) $V_L = (6.313\,04 + \text{j}27.6403)\,\text{V}$
(d) $V_C = (-1.8508 - \text{j}8.1034)\,\text{V}$
(e) $v(0.09) = -121.0497\,\text{V}$
(f) $i(0.09) = -1.7655\,\text{A}$
(g) $v_R(0.09) = -123.586\,\text{V}$
(h) $v_L(0.09) = 3.5882\,\text{V}$
(i) $v_C(0.09) = -1.052\,\text{V}$

Figure 2

(a) $V_{R1} = (86.9833 + \text{j}11.254)\,\text{V}$
(b) $V_{R2} = V_L = V_C = (3.016\,71 - \text{j}11.254)\,\text{V}$
(c) $I_{R1} = (1.2426 + \text{j}0.160\,77)\,\text{A}$
(d) $I_{R2} = (0.043\,096 - \text{j}0.160\,77)\,\text{A}$
(e) $I_L = (-0.497\,53 - \text{j}0.133\,37)\,\text{A}$
(f) $I_C = (1.6971 + \text{j}0.454\,91)\,\text{A}$
(g) $v(0.09) = -121.0497\,\text{V}$
(h) $v_{R1}(0.09) = -112.0741\,\text{V}$
(i) $v_{R2}(0.09) = v_L(0.09) = v_C(0.09) = -8.9756\,\text{V}$
(j) $i_{R1}(0.09) = -1.6011\,\text{A}$
(k) $i_{R2}(0.09) = -0.128\,22\,\text{A}$
(l) $i_L(0.09) = 0.6109\,\text{A}$
(m) $i_C(0.09) = -2.0837\,\text{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	2.8284	2.5465	1.4142	1.1107
b	2.5	1.5915	2	1.5708
c	3.5355	3.1831	1.4142	1.1107
d	1.7321	1.5	1.7321	1.1547
e	4.0415	3.5	1.7321	1.1547
f	3	3	1	1
g	4.9295	2.7	1.8257	1.8257

Universidad Autónoma de Coahuila

Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***11126870***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***JUAN GAEL GONZALEZ RODRIGUEZ***		

Answers

1.

Figure 1

(a) $I = (0.990\,56 - \mathrm{j}0.710\,37)\,\mathrm{A}$
(b) $V_R = (59.4338 - \mathrm{j}42.6224)\,\mathrm{V}$
(c) $V_L = (32.1365 + \mathrm{j}44.812)\,\mathrm{V}$
(d) $V_C = (-1.5703 - \mathrm{j}2.1896)\,\mathrm{V}$
(e) $v(0.09) = 74.8128\,\mathrm{V}$
(f) $i(0.09) = 1.6362\,\mathrm{A}$
(g) $v_R(0.09) = 98.1698\,\mathrm{V}$
(h) $v_L(0.09) = -24.5568\,\mathrm{V}$
(i) $v_C(0.09) = 1.1999\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (89.7316 + \mathrm{j}3.465\,27)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (0.268\,45 - \mathrm{j}3.4653)\,\mathrm{V}$
(c) $I_{R1} = (1.4955 + \mathrm{j}0.057\,754)\,\mathrm{A}$
(d) $I_{R2} = (0.004\,474\,1 - \mathrm{j}0.057\,754)\,\mathrm{A}$
(e) $I_L = (-0.076\,599 - \mathrm{j}0.005\,934)\,\mathrm{A}$
(f) $I_C = (1.5677 + \mathrm{j}0.121\,44)\,\mathrm{A}$
(g) $v(0.09) = 74.8128\,\mathrm{V}$
(h) $v_{R1}(0.09) = 70.625\,\mathrm{V}$
(i) $v_{R2}(0.09) = v_L(0.09) = v_C(0.09) = 4.1878\,\mathrm{V}$
(j) $i_{R1}(0.09) = 1.1771\,\mathrm{A}$
(k) $i_{R2}(0.09) = 0.069\,797\,\mathrm{A}$
(l) $i_L(0.09) = -0.056\,884\,\mathrm{A}$
(m) $i_C(0.09) = 1.1642\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	3.5355	3.1831	1.4142	1.1107
b	4.5	2.8648	2	1.5708
c	2.8284	2.5465	1.4142	1.1107
d	5.1962	4.5	1.7321	1.1547
e	1.7321	1.5	1.7321	1.1547
f	6	6	1	1
g	5.02	4.2	1.1952	1.1952

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Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14155580***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***LUIS ALEJANDRO URBINA GONZALEZ***		

Answers

1.

Figure 1

(a) $I = (0.664\,88 - \mathrm{j}0.034\,489)\,\mathrm{A}$
(b) $V_R = (39.8927 - \mathrm{j}2.069\,33)\,\mathrm{V}$
(c) $V_L = (0.303\,38 + \mathrm{j}5.8486)\,\mathrm{V}$
(d) $V_C = (-0.196\,04 - \mathrm{j}3.7792)\,\mathrm{V}$
(e) $v(0.04) = -33.2502\,\mathrm{V}$
(f) $i(0.04) = -0.592\,14\,\mathrm{A}$
(g) $v_R(0.04) = -35.5285\,\mathrm{V}$
(h) $v_L(0.04) = 6.4393\,\mathrm{V}$
(i) $v_C(0.04) = -4.161\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (35.5429 + \mathrm{j}8.323\,23)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (4.4571 - \mathrm{j}8.3232)\,\mathrm{V}$
(c) $I_{R1} = (0.592\,38 + \mathrm{j}0.138\,72)\,\mathrm{A}$
(d) $I_{R2} = (0.074\,285 - \mathrm{j}0.138\,72)\,\mathrm{A}$
(e) $I_L = (-0.9462 - \mathrm{j}0.506\,69)\,\mathrm{A}$
(f) $I_C = (1.4643 + \mathrm{j}0.784\,13)\,\mathrm{A}$
(g) $v(0.04) = -33.2502\,\mathrm{V}$
(h) $v_{R1}(0.04) = -20.0224\,\mathrm{V}$
(i) $v_{R2}(0.04) = v_L(0.04) = v_C(0.04) = -13.2278\,\mathrm{V}$
(j) $i_{R1}(0.04) = -0.333\,71\,\mathrm{A}$
(k) $i_{R2}(0.04) = -0.220\,46\,\mathrm{A}$
(l) $i_L(0.04) = 0.206\,82\,\mathrm{A}$
(m) $i_C(0.04) = -0.320\,06\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	2.8284	2.5465	1.4142	1.1107
b	4.5	2.8648	2	1.5708
c	3.5355	3.1831	1.4142	1.1107
d	2.3094	2	1.7321	1.1547
e	2.3094	2	1.7321	1.1547
f	2	2	1	1
g	1.5492	1.2	1.291	1.291

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Facultad de Ingeniería Mecánica y Eléctrica

Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	15/09/2016
Exam / Homework	Homework 2: A.C. Fundementals	Registration #	***14629184***
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***JOSE WALDO QUINTANA ARANDA***		

Answers

1.

Figure 1

(a) $I = (0.746\,18 - \mathrm{j}0.200\,39)\,\mathrm{A}$
(b) $V_R = (37.3092 - \mathrm{j}10.0196)\,\mathrm{V}$
(c) $V_L = (3.399\,58 + \mathrm{j}12.6587)\,\mathrm{V}$
(d) $V_C = (-0.708\,74 - \mathrm{j}2.6391)\,\mathrm{V}$
(e) $v(0.04) = -1.3862 \times 10^{-13}\,\mathrm{V}$
(f) $i(0.04) = 0.2834\,\mathrm{A}$
(g) $v_R(0.04) = 14.1699\,\mathrm{V}$
(h) $v_L(0.04) = -17.9021\,\mathrm{V}$
(i) $v_C(0.04) = 3.7322\,\mathrm{V}$

Figure 2

(a) $V_{R1} = (39.3809 + \mathrm{j}3.464\,01)\,\mathrm{V}$
(b) $V_{R2} = V_L = V_C = (0.619\,13 - \mathrm{j}3.464)\,\mathrm{V}$
(c) $I_{R1} = (0.787\,62 + \mathrm{j}0.069\,28)\,\mathrm{A}$
(d) $I_{R2} = (0.012\,383 - \mathrm{j}0.069\,28)\,\mathrm{A}$
(e) $I_L = (-0.204\,19 - \mathrm{j}0.036\,496)\,\mathrm{A}$
(f) $I_C = (0.979\,42 + \mathrm{j}0.175\,06)\,\mathrm{A}$
(g) $v(0.04) = -1.3862 \times 10^{-13}\,\mathrm{V}$
(h) $v_{R1}(0.04) = -4.8988\,\mathrm{V}$
(i) $v_{R2}(0.04) = v_L(0.04) = v_C(0.04) = 4.8988\,\mathrm{V}$
(j) $i_{R1}(0.04) = -0.097\,977\,\mathrm{A}$
(k) $i_{R2}(0.04) = 0.097\,977\,\mathrm{A}$
(l) $i_L(0.04) = 0.051\,613\,\mathrm{A}$
(m) $i_C(0.04) = -0.247\,57\,\mathrm{A}$

2.

	RMS	**ARV**	**Peak factor**	**Form factor**
a	4.9497	4.4563	1.4142	1.1107
b	4	2.5465	2	1.5708
c	1.4142	1.2732	1.4142	1.1107
d	2.3094	2	1.7321	1.1547
e	2.8868	2.5	1.7321	1.1547
f	3	3	1	1
g	2.2361	1	2.2361	2.2361