Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*14137625*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ $/10$
Student's name	*JESUS EMMANUEL MORALES MENUIOLA*		

Answers

1. (a) $297 + \text{j}908$

   (b) $63.0328 + \text{j}22.3607$

   (c) $6.8276 + \text{j}6.069$

   (d) $1.0265 + \text{j}0.503\,87$

2. $67.5\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.100\,85 - \text{j}0.238\,88)\,\text{A}$

       ii. $V_R = (9.076\,83 - \text{j}21.4993)\,\text{V}$

       iii. $V_L = (72.0449 + \text{j}30.4167)\,\text{V}$

       iv. $V_C = (-21.1217 - \text{j}8.917\,42)\,\text{V}$

       v. $P_R = 6.0512\,\text{W}$

       vi. $P_L = 20.2778\,\text{VAR}$

       vii. $P_C = -5.9449\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (33.4374 + \text{j}9.555\,38)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (26.5626 - \text{j}9.555\,38)\,\text{V}$

       iii. $I_{R1} = (0.371\,53 + \text{j}0.106\,17)\,\text{A}$

       iv. $I_{R2} = (0.295\,14 - \text{j}0.106\,17)\,\text{A}$

       v. $I_L = (0.108\,07 + \text{j}0.300\,42)\,\text{A}$

       vi. $I_C = (-0.031\,683 - \text{j}0.088\,074)\,\text{A}$

       vii. $P_{R1} = 13.4374\,\text{W}$

       viii. $P_{R2} = 8.8542\,\text{W}$

       ix. $P_L = 2.6422\,\text{VAR}$

       x. $P_C = -9.0125\,\text{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*14121732*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***JOEL GERARDO AGUERO LLANAS***		

Answers

1. (a) $-142 - \text{j}65$

   (b) $-26 + \text{j}51$

   (c) $2.4779 + \text{j}5.1681$

   (d) $0.168\,37 + \text{j}0.518\,18$

2. $7.5\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.096\,035 - \text{j}0.388\,38)\,\text{A}$

       ii. $V_R = (2.881\,04 - \text{j}11.6513)\,\text{V}$

       iii. $V_L = (58.5656 + \text{j}14.4817)\,\text{V}$

       iv. $V_C = (-11.4466 - \text{j}2.830\,45)\,\text{V}$

       v. $P_R = 4.8017\,\text{W}$

       vi. $P_L = 24.1362\,\text{VAR}$

       vii. $P_C = -4.7174\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (28.5897 + \text{j}8.766\,79)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (21.4103 - \text{j}8.766\,79)\,\text{V}$

       iii. $I_{R1} = (0.952\,99 + \text{j}0.292\,23)\,\text{A}$

       iv. $I_{R2} = (0.713\,68 - \text{j}0.292\,23)\,\text{A}$

       v. $I_L = (0.297\,45 + \text{j}0.726\,43)\,\text{A}$

       vi. $I_C = (-0.058\,137 - \text{j}0.141\,98)\,\text{A}$

       vii. $P_{R1} = 29.8076\,\text{W}$

       viii. $P_{R2} = 17.8419\,\text{W}$

       ix. $P_L = 3.5495\,\text{VAR}$

       x. $P_C = -18.1609\,\text{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*14124427*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***JERSON CHAVEZ ORTIZ***		

Answers

1. (a) $-1001 + \text{j}664$

   (b) $-3.494\,118 + \text{j}116.2235$

   (c) $3.0333 + \text{j}8.5667$

   (d) $0.765\,24 + \text{j}0.895\,55$

2. $12.5\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.398\,79 - \text{j}0.610\,48)\,\text{A}$

       ii. $V_R = (11.9637 - \text{j}18.3144)\,\text{V}$

       iii. $V_L = (46.0291 + \text{j}30.0679)\,\text{V}$

       iv. $V_C = (-17.9928 - \text{j}11.7535)\,\text{V}$

       v. $P_R = 15.9515\,\text{W}$

       vi. $P_L = 40.0906\,\text{VAR}$

       vii. $P_C = -15.6714\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (21.7534 + \text{j}5.656\,33)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (18.2466 - \text{j}5.656\,33)\,\text{V}$

       iii. $I_{R1} = (0.725\,11 + \text{j}0.188\,54)\,\text{A}$

       iv. $I_{R2} = (0.608\,22 - \text{j}0.188\,54)\,\text{A}$

       v. $I_L = (0.191\,91 + \text{j}0.619\,09)\,\text{A}$

       vi. $I_C = (-0.075\,019 - \text{j}0.242)\,\text{A}$

       vii. $P_{R1} = 16.8402\,\text{W}$

       viii. $P_{R2} = 12.1644\,\text{W}$

       ix. $P_L = 4.8401\,\text{VAR}$

       x. $P_C = -12.3818\,\text{VAR}$

5. This question is moved to Homework #2.

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*14156040*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	*LUIS ANTNONIO FERNENDEZ CARRASCO*		

Answers

1. (a) $-835 + j88$

    (b) $-33.2787 + j64.9344$

    (c) $6.4634 + j6.1707$

    (d) $0.5686 + j0.906\,01$

2. $10\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

    i. $I = (0.082\,454 - j0.275\,05)\,\mathrm{A}$

    ii. $V_R = (2.4736 - j8.2516)\,\mathrm{V}$

    iii. $V_L = (51.8465 + j15.5421)\,\mathrm{V}$

    iv. $V_C = (-24.3202 - j7.2905)\,\mathrm{V}$

    v. $P_R = 2.4736\,\mathrm{W}$

    vi. $P_L = 15.5421\,\mathrm{VAR}$

    vii. $P_C = -7.2905\,\mathrm{VAR}$

    (b) Figure 4

    i. $V_{R1} = (15.1207 + j1.340\,16)\,\mathrm{V}$

    ii. $V_{R2} = V_L = V_C = (14.8793 - j1.340\,16)\,\mathrm{V}$

    iii. $I_{R1} = (0.504\,02 + j0.044\,672)\,\mathrm{A}$

    iv. $I_{R2} = (0.495\,98 - j0.044\,672)\,\mathrm{A}$

    v. $I_L = (0.015\,157 + j0.168\,28)\,\mathrm{A}$

    vi. $I_C = (-0.007\,109\,7 - j0.078\,937)\,\mathrm{A}$

    vii. $P_{R1} = 7.6811\,\mathrm{W}$

    viii. $P_{R2} = 7.4396\,\mathrm{W}$

    ix. $P_L = 1.1841\,\mathrm{VAR}$

    x. $P_C = -2.5242\,\mathrm{VAR}$

5. This question is moved to Homework #2.

Answers

1. (a) $-432 + \text{j}432$

   (b) $63.6923 + \text{j}66.4615$

   (c) $4.7765 + \text{j}6.4941$

   (d) $0.599\,86 + \text{j}0.731\,88$

2. $8.3333\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.074\,66 - \text{j}0.337\,46)\,\text{A}$

       ii. $V_R = (3.733\,02 - \text{j}16.8732)\,\text{V}$

       iii. $V_L = (89.0549 + \text{j}19.7024)\,\text{V}$

       iv. $V_C = (-12.7879 - \text{j}2.829\,19)\,\text{V}$

       v. $P_R = 5.9728\,\text{W}$

       vi. $P_L = 31.5239\,\text{VAR}$

       vii. $P_C = -4.5267\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (49.6792 + \text{j}17.1313)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (30.3208 - \text{j}17.1313)\,\text{V}$

       iii. $I_{R1} = (0.993\,58 + \text{j}0.342\,63)\,\text{A}$

       iv. $I_{R2} = (0.606\,42 - \text{j}0.342\,63)\,\text{A}$

       v. $I_L = (0.452\,08 + \text{j}0.800\,15)\,\text{A}$

       vi. $I_C = (-0.064\,917 - \text{j}0.1149)\,\text{A}$

       vii. $P_{R1} = 55.23\,\text{W}$

       viii. $P_{R2} = 24.2567\,\text{W}$

       ix. $P_L = 4.5959\,\text{VAR}$

       x. $P_C = -32.0059\,\text{VAR}$

5. This question is moved to Homework #2.

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*11073892*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ $/10$
Student's name	***JOSUE AMADOR SIFUENTES***		

Answers

1. (a) $-72 + \mathrm{j}368$

   (b) $56.4 + \mathrm{j}27.2$

   (c) $3.3103 + \mathrm{j}4.2759$

   (d) $0.628\,68 + \mathrm{j}0.505\,95$

2. $26.6667\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.100\,98 - \mathrm{j}0.200\,73)\,\mathrm{A}$

       ii. $V_R = (8.078\,73 - \mathrm{j}16.0587)\,\mathrm{V}$

       iii. $V_L = (37.8375 + \mathrm{j}19.0351)\,\mathrm{V}$

       iv. $V_C = (-5.9163 - \mathrm{j}2.9763)\,\mathrm{V}$

       v. $P_R = 4.0394\,\mathrm{W}$

       vi. $P_L = 9.5175\,\mathrm{VAR}$

       vii. $P_C = -1.4882\,\mathrm{VAR}$

   (b) Figure 4

       i. $V_{R1} = (31.3455 + \mathrm{j}9.909\,07)\,\mathrm{V}$

       ii. $V_{R2} = V_L = V_C = (8.6545 - \mathrm{j}9.909\,07)\,\mathrm{V}$

       iii. $I_{R1} = (0.391\,82 + \mathrm{j}0.123\,86)\,\mathrm{A}$

       iv. $I_{R2} = (0.108\,18 - \mathrm{j}0.123\,86)\,\mathrm{A}$

       v. $I_L = (0.336\,21 + \mathrm{j}0.293\,64)\,\mathrm{A}$

       vi. $I_C = (-0.052\,569 - \mathrm{j}0.045\,914)\,\mathrm{A}$

       vii. $P_{R1} = 13.5091\,\mathrm{W}$

       viii. $P_{R2} = 2.1636\,\mathrm{W}$

       ix. $P_L = 0.918\,27\,\mathrm{VAR}$

       x. $P_C = -5.8728\,\mathrm{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*11268436*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***EDUARDO ZALDIVAR MARTINEZ***		

Answers

1. (a) $-936 + j352$

   (b) $-37.169\,23 + j110.9538$

   (c) $7.9888 + j4.382$

   (d) $0.658\,74 + j0.869\,17$

2. $35\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.174\,54 - j0.1393)\,\text{A}$

       ii. $V_R = (12.2178 - j9.750\,96)\,\text{V}$

       iii. $V_L = (26.2573 + j32.9001)\,\text{V}$

       iv. $V_C = (-18.4752 - j23.1492)\,\text{V}$

       v. $P_R = 3.4908\,\text{W}$

       vi. $P_L = 9.4\,\text{VAR}$

       vii. $P_C = -6.614\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (10.0608 + j0.777\,375)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (9.9392 - j0.777\,37)\,\text{V}$

       iii. $I_{R1} = (0.143\,73 + j0.011\,105)\,\text{A}$

       iv. $I_{R2} = (0.141\,99 - j0.011\,105)\,\text{A}$

       v. $I_L = (0.005\,861\,3 + j0.074\,94)\,\text{A}$

       vi. $I_C = (-0.004\,124\,1 - j0.052\,729)\,\text{A}$

       vii. $P_{R1} = 1.4546\,\text{W}$

       viii. $P_{R2} = 1.4199\,\text{W}$

       ix. $P_L = 0.527\,29\,\text{VAR}$

       x. $P_C = -0.7494\,\text{VAR}$

5. This question is moved to Homework #2.

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*14140390*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	*LUIS DAVID MARENTES REYES*		

Answers

1. (a) $154 + j414$

   (b) $36.2162 + j15.2973$

   (c) $6.2941 + j6.8235$

   (d) $0.800\,22 + j0.373\,05$

2. $11.6667\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

   i. $I = (0.101\,52 - j0.218\,41)\,\text{A}$

   ii. $V_R = (7.106\,39 - j15.289)\,\text{V}$

   iii. $V_L = (41.1702 + j19.136)\,\text{V}$

   iv. $V_C = (-8.2766 - j3.847)\,\text{V}$

   v. $P_R = 4.0608\,\text{W}$

   vi. $P_L = 10.9349\,\text{VAR}$

   vii. $P_C = -2.1983\,\text{VAR}$

   (b) Figure 4

   i. $V_{R1} = (27.0514 + j9.5554)\,\text{V}$

   ii. $V_{R2} = V_L = V_C = (12.9486 - j9.5554)\,\text{V}$

   iii. $I_{R1} = (0.386\,45 + j0.136\,51)\,\text{A}$

   iv. $I_{R2} = (0.184\,98 - j0.136\,51)\,\text{A}$

   v. $I_L = (0.252\,16 + j0.341\,71)\,\text{A}$

   vi. $I_C = (-0.050\,693 - j0.068\,695)\,\text{A}$

   vii. $P_{R1} = 11.7583\,\text{W}$

   viii. $P_{R2} = 3.6996\,\text{W}$

   ix. $P_L = 1.3739\,\text{VAR}$

   x. $P_C = -6.8341\,\text{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*12068799*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***JESUS ANTONIO ROBLESREYES***		

Answers

1. (a) $-936 + j352$

    (b) $-23.3425 + j70.2466$

    (c) $4.5 + j7.5$

    (d) $0.689\,38 + j0.9132$

2. $12.5\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

    i. $I = (0.274\,58 - j0.6883)\,\text{A}$

    ii. $V_R = (8.237\,31 - j20.6491)\,\text{V}$

    iii. $V_L = (77.8453 + j31.0539)\,\text{V}$

    iv. $V_C = (-26.0826 - j10.4048)\,\text{V}$

    v. $P_R = 16.4746\,\text{W}$

    vi. $P_L = 62.1079\,\text{VAR}$

    vii. $P_C = -20.8097\,\text{VAR}$

    (b) Figure 4

    i. $V_{R1} = (31.9437 + j7.384\,73)\,\text{V}$

    ii. $V_{R2} = V_L = V_C = (28.0563 - j7.384\,73)\,\text{V}$

    iii. $I_{R1} = (1.0648 + j0.246\,16)\,\text{A}$

    iv. $I_{R2} = (0.935\,21 - j0.246\,16)\,\text{A}$

    v. $I_L = (0.194\,88 + j0.740\,39)\,\text{A}$

    vi. $I_C = (-0.065\,295 - j0.248\,07)\,\text{A}$

    vii. $P_{R1} = 35.8312\,\text{W}$

    viii. $P_{R2} = 28.0563\,\text{W}$

    ix. $P_L = 7.4422\,\text{VAR}$

    x. $P_C = -22.2116\,\text{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*14150725*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***LILIANA VERA GLZ***		

Answers

1. (a) $-198 + j10$

    (b) $-9.0566 + j49.6981$

    (c) $2.5385 + j7.0256$

    (d) $0.292\,42 + j0.545\,13$

2. $15\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

    i. $I = (1.6437 - j1.4931)\,\text{A}$

    ii. $V_R = (32.8744 - j29.862)\,\text{V}$

    iii. $V_L = (225.154 + j247.867)\,\text{V}$

    iv. $V_C = (-198.0284 - j218.005)\,\text{V}$

    v. $P_R = 98.6231\,\text{W}$

    vi. $P_L = 743.6009\,\text{VAR}$

    vii. $P_C = -654.015\,\text{VAR}$

    (b) Figure 4

    i. $V_{R1} = (30.0025 + j0.272\,487)\,\text{V}$

    ii. $V_{R2} = V_L = V_C = (29.9975 - j0.272\,487)\,\text{V}$

    iii. $I_{R1} = (1.5001 + j0.013\,624)\,\text{A}$

    iv. $I_{R2} = (1.4999 - j0.013\,624)\,\text{A}$

    v. $I_L = (0.002\,054\,5 + j0.226\,18)\,\text{A}$

    vi. $I_C = (-0.001\,807 - j0.198\,93)\,\text{A}$

    vii. $P_{R1} = 45.0111\,\text{W}$

    viii. $P_{R2} = 44.9963\,\text{W}$

    ix. $P_L = 5.9678\,\text{VAR}$

    x. $P_C = -6.7853\,\text{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*14125016*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***DAVID OTHONIEL SALDIVAR PEREZ***		

Answers

1. (a) $-414 - j154$

   (b) $-45.76 + j41.32$

   (c) $8.646\,02 + j6.309\,73$

   (d) $0.337\,92 + j0.769\,64$

2. $33.3333\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.321\,65 - j0.158\,75)\,\text{A}$

       ii. $V_R = (16.0823 - j7.937\,58)\,\text{V}$

       iii. $V_L = (17.9544 + j36.3774)\,\text{V}$

       iv. $V_C = (-14.0367 - j28.4398)\,\text{V}$

       v. $P_R = 6.4329\,\text{W}$

       vi. $P_L = 14.551\,\text{VAR}$

       vii. $P_C = -11.3759\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (10.0379 + j0.614\,609)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (9.9621 - j0.614\,61)\,\text{V}$

       iii. $I_{R1} = (0.200\,76 + j0.012\,292)\,\text{A}$

       iv. $I_{R2} = (0.199\,24 - j0.012\,292)\,\text{A}$

       v. $I_L = (0.006\,951\,1 + j0.112\,67)\,\text{A}$

       vi. $I_C = (-0.005\,434\,3 - j0.088\,084)\,\text{A}$

       vii. $P_{R1} = 2.0228\,\text{W}$

       viii. $P_{R2} = 1.9924\,\text{W}$

       ix. $P_L = 0.880\,84\,\text{VAR}$

       x. $P_C = -1.1267\,\text{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*1205596*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	*ALBERTO VAZQUEZ MEDINA*		

Answers

1. (a) $-908 - j297$

   (b) $-29.566 + j30.0189$

   (c) $7.2 + j9.1$

   (d) $0.476\,66 + j1.066$

2. $20.8333\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.036\,112 - j0.1427)\,\text{A}$

       ii. $V_R = (1.8056 - j7.135)\,\text{V}$

       iii. $V_L = (37.6574 + j9.529\,71)\,\text{V}$

       iv. $V_C = (-9.463 - j2.3947)\,\text{V}$

       v. $P_R = 1.0834\,\text{W}$

       vi. $P_L = 5.7178\,\text{VAR}$

       vii. $P_C = -1.4368\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (16.1068 + j3.921\,43)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (13.8932 - j3.921\,43)\,\text{V}$

       iii. $I_{R1} = (0.322\,14 + j0.078\,429)\,\text{A}$

       iv. $I_{R2} = (0.277\,86 - j0.078\,429)\,\text{A}$

       v. $I_L = (0.059\,134 + j0.2095)\,\text{A}$

       vi. $I_C = (-0.014\,86 - j0.052\,647)\,\text{A}$

       vii. $P_{R1} = 5.4962\,\text{W}$

       viii. $P_{R2} = 4.1679\,\text{W}$

       ix. $P_L = 0.7897\,\text{VAR}$

       x. $P_C = -3.1426\,\text{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*12666518*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	*SAMUEL ROSAS GONZALEZ*		

Answers

1. (a) $-236 + j115$

   (b) $-15.7 + j51.1$

   (c) $2.7059 + j5.6765$

   (d) $0.435\,84 + j0.532\,95$

2. $46.6667\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

   i. $I = (0.189\,78 - j0.355\,88)\,\text{A}$

   ii. $V_R = (13.2849 - j24.9119)\,\text{V}$

   iii. $V_L = (93.915\,82 + j50.082\,84)\,\text{V}$

   iv. $V_C = (-47.2007 - j25.1709)\,\text{V}$

   v. $P_R = 11.387\,\text{W}$

   vi. $P_L = 42.9281\,\text{VAR}$

   vii. $P_C = -21.5751\,\text{VAR}$

   (b) Figure 4

   i. $V_{R1} = (30.5082 + j3.871\,24)\,\text{V}$

   ii. $V_{R2} = V_L = V_C = (29.4918 - j3.871\,24)\,\text{V}$

   iii. $I_{R1} = (0.435\,83 + j0.055\,303)\,\text{A}$

   iv. $I_{R2} = (0.421\,31 - j0.055\,303)\,\text{A}$

   v. $I_L = (0.029\,188 + j0.222\,36)\,\text{A}$

   vi. $I_C = (-0.014\,67 - j0.111\,76)\,\text{A}$

   vii. $P_{R1} = 13.5105\,\text{W}$

   viii. $P_{R2} = 12.6394\,\text{W}$

   ix. $P_L = 3.3527\,\text{VAR}$

   x. $P_C = -6.6709\,\text{VAR}$

5. This question is moved to Homework #2.

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*12064655*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	*EDSON ORLANDONAVARRO RAMIREZ*		

Answers

1. (a) $-250 + j250$

   (b) $30 + j60$

   (c) $4.641 + j7.1282$

   (d) $0.505\,88 + j0.576\,47$

2. $5\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (1.7839 - j2.2012)\,\text{A}$

       ii. $V_R = (35.6789 - j44.0241)\,\text{V}$

       iii. $V_L = (248.9501 + j201.7594)\,\text{V}$

       iv. $V_C = (-194.629 - j157.7353)\,\text{V}$

       v. $P_R = 160.555\,\text{W}$

       vi. $P_L = 907.9173\,\text{VAR}$

       vii. $P_C = -709.8091\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (45.0274 + j1.109\,83)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (44.9726 - j1.109\,83)\,\text{V}$

       iii. $I_{R1} = (2.2514 + j0.055\,492)\,\text{A}$

       iv. $I_{R2} = (2.2486 - j0.055\,492)\,\text{A}$

       v. $I_L = (0.012\,552 + j0.508\,63)\,\text{A}$

       vi. $I_C = (-0.009\,813\,1 - j0.397\,65)\,\text{A}$

       vii. $P_{R1} = 101.4349\,\text{W}$

       viii. $P_{R2} = 101.1884\,\text{W}$

       ix. $P_L = 17.894\,\text{VAR}$

       x. $P_C = -22.8883\,\text{VAR}$

5. This question is moved to Homework #2.

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*11126870*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	*JUAN GAEL GONZALEZ RODRIGUEZ*		

Answers

1. (a) $-835 + j88$

   (b) $-33.2787 + j64.9344$

   (c) $6.4634 + j6.1707$

   (d) $0.5686 + j0.906\,01$

2. $10\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

   i. $I = (0.082\,454 - j0.275\,05)\,\text{A}$

   ii. $V_R = (2.4736 - j8.2516)\,\text{V}$

   iii. $V_L = (51.8465 + j15.5421)\,\text{V}$

   iv. $V_C = (-24.3202 - j7.2905)\,\text{V}$

   v. $P_R = 2.4736\,\text{W}$

   vi. $P_L = 15.5421\,\text{VAR}$

   vii. $P_C = -7.2905\,\text{VAR}$

   (b) Figure 4

   i. $V_{R1} = (15.1207 + j1.340\,16)\,\text{V}$

   ii. $V_{R2} = V_L = V_C = (14.8793 - j1.340\,16)\,\text{V}$

   iii. $I_{R1} = (0.504\,02 + j0.044\,672)\,\text{A}$

   iv. $I_{R2} = (0.495\,98 - j0.044\,672)\,\text{A}$

   v. $I_L = (0.015\,157 + j0.168\,28)\,\text{A}$

   vi. $I_C = (-0.007\,109\,7 - j0.078\,937)\,\text{A}$

   vii. $P_{R1} = 7.6811\,\text{W}$

   viii. $P_{R2} = 7.4396\,\text{W}$

   ix. $P_L = 1.1841\,\text{VAR}$

   x. $P_C = -2.5242\,\text{VAR}$

5. This question is moved to Homework #2.

Universidad Autónoma de Coahuila
Facultad de Ingeniería Mecánica y Eléctrica
Unidad Torreón

Subject	Circuit analysis II	Group	5A
Degree	Electrical engineering	Due for	01/09/2016
Exam / Homework	Homework 1: Basics of DC and AC circuits	Registration #	*14155580*
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	*LUIS ALEJANDRO URBINA GONZALEZ*		

Answers

1. (a) $-1001 + j664$

   (b) $-39.18 + j88.24$

   (c) $7.16438 + j7.56164$

   (d) $0.81773 + j0.88478$

2. $13.3333\,\Omega$

3. $R(1 + \sqrt{3})$

4. (a) Figure 3

       i. $I = (0.042678 - j0.28902)\,\text{A}$

       ii. $V_R = (0.85356 - j5.7805)\,\text{V}$

       iii. $V_L = (54.4796 + j8.0446)\,\text{V}$

       iv. $V_C = (-15.3332 - j2.26413)\,\text{V}$

       v. $P_R = 1.7071\,\text{W}$

       vi. $P_L = 16.0892\,\text{VAR}$

       vii. $P_C = -4.5283\,\text{VAR}$

   (b) Figure 4

       i. $V_{R1} = (20.3603 + j2.66008)\,\text{V}$

       ii. $V_{R2} = V_L = V_C = (19.6397 - j2.66008)\,\text{V}$

       iii. $I_{R1} = (1.018 + j0.133)\,\text{A}$

       iv. $I_{R2} = (0.98199 - j0.133)\,\text{A}$

       v. $I_L = (0.050141 + j0.3702)\,\text{A}$

       vi. $I_C = (-0.014112 - j0.10419)\,\text{A}$

       vii. $P_{R1} = 21.0809\,\text{W}$

       viii. $P_{R2} = 19.6397\,\text{W}$

       ix. $P_L = 2.0838\,\text{VAR}$

       x. $P_C = -7.404\,\text{VAR}$

5. This question is moved to Homework #2.