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) $1.8824 + \text{j}1.0023$
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. $P_L = 20.2778$ VAR
   vii. $P_C = -5.9449$ 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. $P_L = 2.6422$ VAR
   x. $P_C = -9.0125$ VAR
5. This question is moved to Homework #2.

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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) $0.219\,88 + \text{j}0.749\,64$
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. $P_L = 24.1362$ VAR
      vii. $P_C = -4.7174$ 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. $P_L = 3.5495$ VAR
      x. $P_C = -18.1609$ VAR
5. This question is moved to Homework #2.

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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. $P_L = 40.0906$ VAR
   vii. $P_C = -15.6714$ 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. $P_L = 4.8401$ VAR
   x. $P_C = -12.3818$ VAR
5. This question is moved to Homework #2.

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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 #	***14156040***
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***LUIS ANTNONIO FERNENDEZ CARRASCO***		

Answers

1. (a) $-835 + \text{j}88$
   (b) $-33.2787 + \text{j}64.9344$
   (c) $6.4634 + \text{j}6.1707$
   (d) $0.5686 + \text{j}0.906\,01$
2. $10\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
   i. $I = (0.082\,454 - \text{j}0.275\,05)\,\text{A}$
   ii. $V_R = (2.4736 - \text{j}8.2516)\,\text{V}$
   iii. $V_L = (51.8465 + \text{j}15.5421)\,\text{V}$
   iv. $V_C = (-24.3202 - \text{j}7.2905)\,\text{V}$
   v. $P_R = 2.4736\,\text{W}$
   vi. $P_L = 15.5421$ VAR
   vii. $P_C = -7.2905$ VAR
   (b) Figure 4
   i. $V_{R1} = (15.1207 + \text{j}1.340\,16)\,\text{V}$
   ii. $V_{R2} = V_L = V_C = (14.8793 - \text{j}1.340\,16)\,\text{V}$
   iii. $I_{R1} = (0.504\,02 + \text{j}0.044\,672)\,\text{A}$
   iv. $I_{R2} = (0.495\,98 - \text{j}0.044\,672)\,\text{A}$
   v. $I_L = (0.015\,157 + \text{j}0.168\,28)\,\text{A}$
   vi. $I_C = (-0.007\,109\,7 - \text{j}0.078\,937)\,\text{A}$
   vii. $P_{R1} = 7.6811\,\text{W}$
   viii. $P_{R2} = 7.4396\,\text{W}$
   ix. $P_L = 1.1841$ VAR
   x. $P_C = -2.5242$ VAR
5. This question is moved to Homework #2.

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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 #	***14156037***
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***MICHAEL MURILLO MENDEZ***		

Answers

1. (a) $-432 + \text{j}432$
   (b) $63.6923 + \text{j}66.4615$
   (c) $4.7765 + \text{j}6.4941$
   (d) $0.743\,78 + \text{j}0.961\,71$
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. $P_L = 31.5239$ VAR
      vii. $P_C = -4.5267$ 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. $P_L = 4.5959$ VAR
      x. $P_C = -32.0059$ VAR
5. This question is moved to Homework #2.

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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 #	***11073892***
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***JOSUE AMADOR SIFUENTES***		

Answers

1. (a) $-72 + \text{j}368$
   (b) $56.4 + \text{j}27.2$
   (c) $3.3103 + \text{j}4.2759$
   (d) $1.0629 + \text{j}0.989\,86$
2. $26.6667\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
      i. $I = (0.100\,98 - \text{j}0.200\,73)\,\text{A}$
      ii. $V_R = (8.078\,73 - \text{j}16.0587)\,\text{V}$
      iii. $V_L = (37.8375 + \text{j}19.0351)\,\text{V}$
      iv. $V_C = (-5.9163 - \text{j}2.9763)\,\text{V}$
      v. $P_R = 4.0394\,\text{W}$
      vi. $P_L = 9.5175$ VAR
      vii. $P_C = -1.4882$ VAR
   (b) Figure 4
      i. $V_{R1} = (31.3455 + \text{j}9.909\,07)\,\text{V}$
      ii. $V_{R2} = V_L = V_C = (8.6545 - \text{j}9.909\,07)\,\text{V}$
      iii. $I_{R1} = (0.391\,82 + \text{j}0.123\,86)\,\text{A}$
      iv. $I_{R2} = (0.108\,18 - \text{j}0.123\,86)\,\text{A}$
      v. $I_L = (0.336\,21 + \text{j}0.293\,64)\,\text{A}$
      vi. $I_C = (-0.052\,569 - \text{j}0.045\,914)\,\text{A}$
      vii. $P_{R1} = 13.5091\,\text{W}$
      viii. $P_{R2} = 2.1636\,\text{W}$
      ix. $P_L = 0.918\,27$ VAR
      x. $P_C = -5.8728$ VAR
5. This question is moved to Homework #2.

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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) $-936 + \text{j}352$
   (b) $-37.169\,23 + \text{j}110.9538$
   (c) $7.9888 + \text{j}4.382$
   (d) $0.658\,74 + \text{j}0.869\,17$
2. $35\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
      i. $I = (0.174\,54 - \text{j}0.1393)\,\text{A}$
      ii. $V_R = (12.2178 - \text{j}9.750\,96)\,\text{V}$
      iii. $V_L = (26.2573 + \text{j}32.9001)\,\text{V}$
      iv. $V_C = (-18.4752 - \text{j}23.1492)\,\text{V}$
      v. $P_R = 3.4908\,\text{W}$
      vi. $P_L = 9.4$ VAR
      vii. $P_C = -6.614$ VAR
   (b) Figure 4
      i. $V_{R1} = (10.0608 + \text{j}0.777\,375)\,\text{V}$
      ii. $V_{R2} = V_L = V_C = (9.9392 - \text{j}0.777\,37)\,\text{V}$
      iii. $I_{R1} = (0.143\,73 + \text{j}0.011\,105)\,\text{A}$
      iv. $I_{R2} = (0.141\,99 - \text{j}0.011\,105)\,\text{A}$
      v. $I_L = (0.005\,861\,3 + \text{j}0.074\,94)\,\text{A}$
      vi. $I_C = (-0.004\,124\,1 - \text{j}0.052\,729)\,\text{A}$
      vii. $P_{R1} = 1.4546\,\text{W}$
      viii. $P_{R2} = 1.4199\,\text{W}$
      ix. $P_L = 0.527\,29$ VAR
      x. $P_C = -0.7494$ VAR
5. This question is moved to Homework #2.

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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 #	***14140390***
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***LUIS DAVID MARENTES REYES***		

Answers

1. (a) $154 + \text{j}414$
   (b) $36.2162 + \text{j}15.2973$
   (c) $6.2941 + \text{j}6.8235$
   (d) $1.8607 + \text{j}0.967\,21$
2. $11.6667\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
      i. $I = (0.101\,52 - \text{j}0.218\,41)\,\text{A}$
      ii. $V_R = (7.106\,39 - \text{j}15.289)\,\text{V}$
      iii. $V_L = (41.1702 + \text{j}19.136)\,\text{V}$
      iv. $V_C = (-8.2766 - \text{j}3.847)\,\text{V}$
      v. $P_R = 4.0608\,\text{W}$
      vi. $P_L = 10.9349$ VAR
      vii. $P_C = -2.1983$ VAR
   (b) Figure 4
      i. $V_{R1} = (27.0514 + \text{j}9.5554)\,\text{V}$
      ii. $V_{R2} = V_L = V_C = (12.9486 - \text{j}9.5554)\,\text{V}$
      iii. $I_{R1} = (0.386\,45 + \text{j}0.136\,51)\,\text{A}$
      iv. $I_{R2} = (0.184\,98 - \text{j}0.136\,51)\,\text{A}$
      v. $I_L = (0.252\,16 + \text{j}0.341\,71)\,\text{A}$
      vi. $I_C = (-0.050\,693 - \text{j}0.068\,695)\,\text{A}$
      vii. $P_{R1} = 11.7583\,\text{W}$
      viii. $P_{R2} = 3.6996\,\text{W}$
      ix. $P_L = 1.3739$ VAR
      x. $P_C = -6.8341$ VAR
5. This question is moved to Homework #2.

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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) $-936 + \text{j}352$
   (b) $-23.3425 + \text{j}70.2466$
   (c) $4.5 + \text{j}7.5$
   (d) $0.689\,38 + \text{j}0.9132$
2. $12.5\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
   i. $I = (0.274\,58 - \text{j}0.6883)\,\text{A}$
   ii. $V_R = (8.237\,31 - \text{j}20.6491)\,\text{V}$
   iii. $V_L = (77.8453 + \text{j}31.0539)\,\text{V}$
   iv. $V_C = (-26.0826 - \text{j}10.4048)\,\text{V}$
   v. $P_R = 16.4746\,\text{W}$
   vi. $P_L = 62.1079$ VAR
   vii. $P_C = -20.8097$ VAR
   (b) Figure 4
   i. $V_{R1} = (31.9437 + \text{j}7.384\,73)\,\text{V}$
   ii. $V_{R2} = V_L = V_C = (28.0563 - \text{j}7.384\,73)\,\text{V}$
   iii. $I_{R1} = (1.0648 + \text{j}0.246\,16)\,\text{A}$
   iv. $I_{R2} = (0.935\,21 - \text{j}0.246\,16)\,\text{A}$
   v. $I_L = (0.194\,88 + \text{j}0.740\,39)\,\text{A}$
   vi. $I_C = (-0.065\,295 - \text{j}0.248\,07)\,\text{A}$
   vii. $P_{R1} = 35.8312\,\text{W}$
   viii. $P_{R2} = 28.0563\,\text{W}$
   ix. $P_L = 7.4422$ VAR
   x. $P_C = -22.2116$ VAR
5. This question is moved to Homework #2.

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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) $-198 + \text{j}10$
   (b) $-9.0566 + \text{j}49.6981$
   (c) $2.5385 + \text{j}7.0256$
   (d) $0.410\,58 + \text{j}0.808\,39$
2. $15\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
      i. $I = (1.6437 - \text{j}1.4931)\,\text{A}$
      ii. $V_R = (32.8744 - \text{j}29.862)\,\text{V}$
      iii. $V_L = (225.154 + \text{j}247.867)\,\text{V}$
      iv. $V_C = (-198.0284 - \text{j}218.005)\,\text{V}$
      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. $V_{R1} = (30.0025 + \text{j}0.272\,487)\,\text{V}$
      ii. $V_{R2} = V_L = V_C = (29.9975 - \text{j}0.272\,487)\,\text{V}$
      iii. $I_{R1} = (1.5001 + \text{j}0.013\,624)\,\text{A}$
      iv. $I_{R2} = (1.4999 - \text{j}0.013\,624)\,\text{A}$
      v. $I_L = (0.002\,054\,5 + \text{j}0.226\,18)\,\text{A}$
      vi. $I_C = (-0.001\,807 - \text{j}0.198\,93)\,\text{A}$
      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.

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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) $-414 - \mathrm{j}154$
   (b) $-45.76 + \mathrm{j}41.32$
   (c) $8.646\,02 + \mathrm{j}6.309\,73$
   (d) $0.380\,79 + \mathrm{j}0.864\,71$
2. $33.3333\,\Omega$
3. $R(1+\sqrt{3})$
4. (a) Figure 3
   i. $I = (0.321\,65 - \mathrm{j}0.158\,75)\,\mathrm{A}$
   ii. $V_R = (16.0823 - \mathrm{j}7.937\,58)\,\mathrm{V}$
   iii. $V_L = (17.9544 + \mathrm{j}36.3774)\,\mathrm{V}$
   iv. $V_C = (-14.0367 - \mathrm{j}28.4398)\,\mathrm{V}$
   v. $P_R = 6.4329\,\mathrm{W}$
   vi. $P_L = 14.551$ VAR
   vii. $P_C = -11.3759$ VAR
   (b) Figure 4
   i. $V_{R1} = (10.0379 + \mathrm{j}0.614\,609)\,\mathrm{V}$
   ii. $V_{R2} = V_L = V_C = (9.9621 - \mathrm{j}0.614\,61)\,\mathrm{V}$
   iii. $I_{R1} = (0.200\,76 + \mathrm{j}0.012\,292)\,\mathrm{A}$
   iv. $I_{R2} = (0.199\,24 - \mathrm{j}0.012\,292)\,\mathrm{A}$
   v. $I_L = (0.006\,951\,1 + \mathrm{j}0.112\,67)\,\mathrm{A}$
   vi. $I_C = (-0.005\,434\,3 - \mathrm{j}0.088\,084)\,\mathrm{A}$
   vii. $P_{R1} = 2.0228\,\mathrm{W}$
   viii. $P_{R2} = 1.9924\,\mathrm{W}$
   ix. $P_L = 0.880\,84$ VAR
   x. $P_C = -1.1267$ VAR
5. This question is moved to Homework #2.

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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) $-908 - \text{j}297$
   (b) $-29.566 + \text{j}30.0189$
   (c) $7.2 + \text{j}9.1$
   (d) $0.425\,91 + \text{j}0.953\,15$
2. $20.8333\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
   i. $I = (0.036\,112 - \text{j}0.1427)\,\text{A}$
   ii. $V_R = (1.8056 - \text{j}7.135)\,\text{V}$
   iii. $V_L = (37.6574 + \text{j}9.529\,71)\,\text{V}$
   iv. $V_C = (-9.463 - \text{j}2.3947)\,\text{V}$
   v. $P_R = 1.0834\,\text{W}$
   vi. $P_L = 5.7178$ VAR
   vii. $P_C = -1.4368$ VAR
   (b) Figure 4
   i. $V_{R1} = (16.1068 + \text{j}3.921\,43)\,\text{V}$
   ii. $V_{R2} = V_L = V_C = (13.8932 - \text{j}3.921\,43)\,\text{V}$
   iii. $I_{R1} = (0.322\,14 + \text{j}0.078\,429)\,\text{A}$
   iv. $I_{R2} = (0.277\,86 - \text{j}0.078\,429)\,\text{A}$
   v. $I_L = (0.059\,134 + \text{j}0.2095)\,\text{A}$
   vi. $I_C = (-0.014\,86 - \text{j}0.052\,647)\,\text{A}$
   vii. $P_{R1} = 5.4962\,\text{W}$
   viii. $P_{R2} = 4.1679\,\text{W}$
   ix. $P_L = 0.7897$ VAR
   x. $P_C = -3.1426$ 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) $-236 + \text{j}115$
   (b) $-15.7 + \text{j}51.1$
   (c) $2.7059 + \text{j}5.6765$
   (d) $0.647\,36 + \text{j}0.783\,38$
2. $46.6667\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
      i. $I = (0.189\,78 - \text{j}0.355\,88)\,\text{A}$
      ii. $V_R = (13.2849 - \text{j}24.9119)\,\text{V}$
      iii. $V_L = (93.915\,82 + \text{j}50.082\,84)\,\text{V}$
      iv. $V_C = (-47.2007 - \text{j}25.1709)\,\text{V}$
      v. $P_R = 11.387\,\text{W}$
      vi. $P_L = 42.9281$ VAR
      vii. $P_C = -21.5751$ VAR
   (b) Figure 4
      i. $V_{R1} = (30.5082 + \text{j}3.871\,24)\,\text{V}$
      ii. $V_{R2} = V_L = V_C = (29.4918 - \text{j}3.871\,24)\,\text{V}$
      iii. $I_{R1} = (0.435\,83 + \text{j}0.055\,303)\,\text{A}$
      iv. $I_{R2} = (0.421\,31 - \text{j}0.055\,303)\,\text{A}$
      v. $I_L = (0.029\,188 + \text{j}0.222\,36)\,\text{A}$
      vi. $I_C = (-0.014\,67 - \text{j}0.111\,76)\,\text{A}$
      vii. $P_{R1} = 13.5105\,\text{W}$
      viii. $P_{R2} = 12.6394\,\text{W}$
      ix. $P_L = 3.3527$ VAR
      x. $P_C = -6.6709$ VAR
5. This question is moved to Homework #2.

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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 #	***12064655***
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***EDSON ORLANDONAVARRO RAMIREZ***		

Answers

1. (a) $-250 + \text{j}250$
   (b) $30 + \text{j}60$
   (c) $4.641 + \text{j}7.1282$
   (d) $0.721\,65 + \text{j}0.876\,29$
2. $5\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
      i. $I = (1.7839 - \text{j}2.2012)\,\text{A}$
      ii. $V_R = (35.6789 - \text{j}44.0241)\,\text{V}$
      iii. $V_L = (248.9501 + \text{j}201.7594)\,\text{V}$
      iv. $V_C = (-194.629 - \text{j}157.7353)\,\text{V}$
      v. $P_R = 160.555\,\text{W}$
      vi. $P_L = 907.9173$ VAR
      vii. $P_C = -709.8091$ VAR
   (b) Figure 4
      i. $V_{R1} = (45.0274 + \text{j}1.109\,83)\,\text{V}$
      ii. $V_{R2} = V_L = V_C = (44.9726 - \text{j}1.109\,83)\,\text{V}$
      iii. $I_{R1} = (2.2514 + \text{j}0.055\,492)\,\text{A}$
      iv. $I_{R2} = (2.2486 - \text{j}0.055\,492)\,\text{A}$
      v. $I_L = (0.012\,552 + \text{j}0.508\,63)\,\text{A}$
      vi. $I_C = (-0.009\,813\,1 - \text{j}0.397\,65)\,\text{A}$
      vii. $P_{R1} = 101.4349\,\text{W}$
      viii. $P_{R2} = 101.1884\,\text{W}$
      ix. $P_L = 17.894$ VAR
      x. $P_C = -22.8883$ VAR
5. This question is moved to Homework #2.

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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 #	***11126870***
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ / 10
Student's name	***JUAN GAEL GONZALEZ RODRIGUEZ***		

Answers

1. (a) $-835 + \text{j}88$
   (b) $-33.2787 + \text{j}64.9344$
   (c) $6.4634 + \text{j}6.1707$
   (d) $0.5686 + \text{j}0.906\,01$
2. $10\,\Omega$
3. $R(1 + \sqrt{3})$
4. (a) Figure 3
      i. $I = (0.082\,454 - \text{j}0.275\,05)\,\text{A}$
      ii. $V_R = (2.4736 - \text{j}8.2516)\,\text{V}$
      iii. $V_L = (51.8465 + \text{j}15.5421)\,\text{V}$
      iv. $V_C = (-24.3202 - \text{j}7.2905)\,\text{V}$
      v. $P_R = 2.4736\,\text{W}$
      vi. $P_L = 15.5421$ VAR
      vii. $P_C = -7.2905$ VAR
   (b) Figure 4
      i. $V_{R1} = (15.1207 + \text{j}1.340\,16)\,\text{V}$
      ii. $V_{R2} = V_L = V_C = (14.8793 - \text{j}1.340\,16)\,\text{V}$
      iii. $I_{R1} = (0.504\,02 + \text{j}0.044\,672)\,\text{A}$
      iv. $I_{R2} = (0.495\,98 - \text{j}0.044\,672)\,\text{A}$
      v. $I_L = (0.015\,157 + \text{j}0.168\,28)\,\text{A}$
      vi. $I_C = (-0.007\,109\,7 - \text{j}0.078\,937)\,\text{A}$
      vii. $P_{R1} = 7.6811\,\text{W}$
      viii. $P_{R2} = 7.4396\,\text{W}$
      ix. $P_L = 1.1841$ VAR
      x. $P_C = -2.5242$ VAR
5. This question is moved to Homework #2.

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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) $-1001 + \text{j}664$
   (b) $-39.18 + \text{j}88.24$
   (c) $7.164\,38 + \text{j}7.561\,64$
   (d) $0.817\,73 + \text{j}0.884\,78$
2. $13.3333\,\Omega$
3. $R(1+\sqrt{3})$
4. (a) Figure 3
   i. $I = (0.042\,678 - \text{j}0.289\,02)\,\text{A}$
   ii. $V_R = (0.853\,56 - \text{j}5.7805)\,\text{V}$
   iii. $V_L = (54.4796 + \text{j}8.0446)\,\text{V}$
   iv. $V_C = (-15.3332 - \text{j}2.264\,13)\,\text{V}$
   v. $P_R = 1.7071\,\text{W}$
   vi. $P_L = 16.0892$ VAR
   vii. $P_C = -4.5283$ VAR
   (b) Figure 4
   i. $V_{R1} = (20.3603 + \text{j}2.660\,08)\,\text{V}$
   ii. $V_{R2} = V_L = V_C = (19.6397 - \text{j}2.660\,08)\,\text{V}$
   iii. $I_{R1} = (1.018 + \text{j}0.133)\,\text{A}$
   iv. $I_{R2} = (0.981\,99 - \text{j}0.133)\,\text{A}$
   v. $I_L = (0.050\,141 + \text{j}0.3702)\,\text{A}$
   vi. $I_C = (-0.014\,112 - \text{j}0.104\,19)\,\text{A}$
   vii. $P_{R1} = 21.0809\,\text{W}$
   viii. $P_{R2} = 19.6397\,\text{W}$
   ix. $P_L = 2.0838$ VAR
   x. $P_C = -7.404$ 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 #	***14629184***
Professor's name	Suresh Kumar Gadi	Marks Obtained	_____ /10
Student's name	***JOSE WALDO QUINTANA ARANDA***		

Answers

1. (a) $-478 - \mathrm{j}621$
   (b) $-59 + \mathrm{j}32$
   (c) $3.2642 + \mathrm{j}9.0755$
   (d) $0.1999 + \mathrm{j}0.920\,43$
2. $53.3333\,\Omega$
3. $R(1+\sqrt{3})$
4. (a) Figure 3
   i. $I = (0.943\,75 + \mathrm{j}0.230\,41)\,\mathrm{A}$
   ii. $V_R = (75.4996 + \mathrm{j}18.433)\,\mathrm{V}$
   iii. $V_L = (-26.059\,08 + \mathrm{j}106.7351)\,\mathrm{V}$
   iv. $V_C = (30.559\,46 - \mathrm{j}125.1681)\,\mathrm{V}$
   v. $P_R = 75.4996\,\mathrm{W}$
   vi. $P_L = 106.7351$ VAR
   vii. $P_C = -125.1681$ VAR
   (b) Figure 4
   i. $V_{R1} = (40.1082 - \mathrm{j}2.077\,75)\,\mathrm{V}$
   ii. $V_{R2} = V_L = V_C = (39.8918 + \mathrm{j}2.077\,75)\,\mathrm{V}$
   iii. $I_{R1} = (0.501\,35 - \mathrm{j}0.025\,972)\,\mathrm{A}$
   iv. $I_{R2} = (0.498\,65 + \mathrm{j}0.025\,972)\,\mathrm{A}$
   v. $I_L = (-0.015\,666 + \mathrm{j}0.300\,78)\,\mathrm{A}$
   vi. $I_C = (0.018\,371 - \mathrm{j}0.352\,72)\,\mathrm{A}$
   vii. $P_{R1} = 20.1623\,\mathrm{W}$
   viii. $P_{R2} = 19.9459\,\mathrm{W}$
   ix. $P_L = 14.1088$ VAR
   x. $P_C = -12.0311$ VAR
5. This question is moved to Homework #2.