

Exam 1 results

Summer2014	
Rnumber	Exam1
R00895512	100
R01070373	100
R01309865	100
R00296499	87
R00869505	100
R00957322	100
R01038967	100
R01015329	87
R00918606	87
R00497452	100
R01009853	100
R00926737	100
R01106408	100
R01118694	100
R00992757	100
R01082320	100
R00671146	100
R00450847	100
R00846648	100
R01125414	100
R00671670	100
R00451366	100
R00838754	100
R01343012	100
R00931942	100
R00857859	100
R01001345	100
R01010199	100
R01207322	100
R00930302	100

Summer 2010. Exam 1. QQ 1-3

<p>1) Two small charged objects attract each other with a force <math>F</math> when separated by a distance <math>d</math>. If the charge on each object is reduced to one-fourth of its original value and the distance between them is reduced to <math>d/2</math> the force becomes:</p> <ol style="list-style-type: none"> <li>1. <math>F/16</math></li> <li>2. <math>F/8</math></li> <li>3. <b><math>F/4</math></b></li> <li>4. <math>F/2</math></li> <li>5. <math>F</math></li> </ol>	<p>2) Charge <math>Q</math> is distributed uniformly throughout a spherical insulating shell. The net electric flux in <math>N \cdot m^2 / C</math> through the inner surface of the shell is:</p> <ol style="list-style-type: none"> <li>1. 0</li> <li>2. <math>Q/\epsilon_0</math></li> <li>3. <math>2Q/\epsilon_0</math></li> <li>4. <math>Q/2\epsilon_0</math></li> <li>5. <math>Q/2\pi\epsilon_0</math></li> </ol>	<p>3) Total negative charge on the electrons in 1 kg of helium (atomic number 2, molar mass 4) is:</p> <ol style="list-style-type: none"> <li>1. 48C</li> <li>2. <math>2.4 \times 10^7</math> C</li> <li>3. <b><math>4.8 \times 10^7</math> C</b></li> <li>4. <math>9.6 \times 10^8</math> C</li> <li>5. <math>1.9 \times 10^8</math> C</li> </ol>
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Summer 2010. Exam 1. QQ 4-6

<p>4) A conducting sphere of radius 1 cm has a charge of <math>1.0 \times 10^{-9}</math> C deposited on it. The magnitude of the electric field in N/C just outside the surface of the sphere is:</p> <ol style="list-style-type: none"> <li>1. 0</li> <li>2. 450</li> <li>3. 900</li> <li>4. 4500</li> <li>5. <b>90,000</b></li> </ol>	<p>5) Charge is distributed uniformly along a straight wire. The electric field 2 cm from the wire is 20 N/C. The electric field 4 cm from the wire is:</p> <ol style="list-style-type: none"> <li>1. 120 N/C</li> <li>2. 80 N/C</li> <li>3. 40 N/C</li> <li>4. <b>10 N/C</b></li> <li>5. 5 N/C</li> </ol>	<p>6) A 3.5-cm radius hemisphere contains a total charge of <math>6.6 \times 10^{-7}</math> C. The flux through the rounded portion of the surface is <math>9.8 \times 10^4</math> N <math>\cdot</math> m<sup>2</sup> /C. The flux through the flat base is:</p> <ol style="list-style-type: none"> <li>1. 0</li> <li>2. <math>+2.3 \times 10^4</math> N <math>\cdot</math> m<sup>2</sup> /C</li> <li>3. <b><math>-2.3 \times 10^4</math> N <math>\cdot</math> m<sup>2</sup> /C</b></li> <li>4. <math>-9.8 \times 10^4</math> N <math>\cdot</math> m<sup>2</sup> /C</li> <li>5. <math>+9.8 \times 10^4</math> N <math>\cdot</math> m<sup>2</sup> /C</li> </ol>
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