## $11^{\text{th}}$ Physics (2017 – 18)

(3rdQ, #2 Mini Test)



4 pt/question x 13 questions = 52 pt Max 50 pt

∕[Total 50 pt]

3/1/2018 By Tohei

(1) A charge rod is brought near a suspended object , which is repelled by the rod. Can we conclude that the suspended object is charged? Say "Yes" or "No" and explain.

(1) Answer	

(2) How much time is required for 0.27 C of charge to flow through a wire carrying a current 1.3 A? (Equations)



(2) Answer	

(3) A 94-  $\Omega\,$  resistor is connected to a 15-V battery. How much energy is consumed by the resistor in 6.0 min? (Equations)



(3) Answer		

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(4-a) A uniform electric field has a magnitude of  $6.70 \ge 10^3$  N/C and points in the positive x direction. Find the magnitude and direction of the force this field exerts on an electron.

(4-b) The electron is released from rest in the electric field. Find the speed of the point charge after it has traveled 20.0 cm. (Equations)



(4-a) Answer
magnitude
direction
(4-b) Answer

(5) In the last Physics Lab, you measured the resistances of various shapes of conductive paper. A piece of paper (A), 50.0mm x 300.0mm, shows 205 k  $\Omega$ .

Predict the resistance of the combined sample (B) where a 30.0 mm x 140.0 mm sample is combined with a 40.0 mm x 400.0 mm sample, as the figure shows. (Equations)



(5) Answer

3/1/2018 B

Find (6)  $\sim$  (8) in the circuit shown, where the potential at

the point "a" is assumed as 0 V.

(6) The potential of the point "e".

(7) The current through the  $6.0 \Omega$  resistor  $R_2$ .

(8) Find the power consumed in the  $1.5\,\Omega$   $\,$  resistor  $R_3$  when

the two points, c and e, are short-circuited.

(Equations)



(6) Answer

(7) Answer

(8) Answer

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Switch

(9) When the current is applied in wire, the north pole of the compass moves in the direction, A or B. Answer A or B.



9**-**a

9-b

Top View





9-c

Answer



9-d



(9-a)
(9-b)
(9-c)
(9-d)

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0

(10) Electron beam is shown in a Crooks Tube. (a) Electric field is applied as shown. In which direction does the beam move, A, B, C or D? (10-b) A magnet is brought near the tube as shown. In which direction does the beam move, A, B, C or D?



(11) When a current is applied in wire, How does it move, in the direction A or in the direction B?



(12) The figures show electric motors. How does it rotate, in the direction A or in the direction B?



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(12) In the figure, Wire-1 carries a current of 3.00 A in the negative z direction. Find the magnitude and direction of the magnetic field at point A

(Equations)



Answer

(12)

3/1/2018 By Tohei Moritani (13) In the figure, Wire-1 carries a current of 3.00 A in the negative z direction. The other wire, Wire-2, carries a current of 7.00 A in the negative z direction. Find the magnitude and direction of the magnetic field at point A

(Equations)



Answer

(13)

Magnitude

Direction

(The solution will be shown on the Website of Physic Class in this weekend.)

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