Name:

Grade and Section: Score: /10.0

Date:

Quiz # 3 on Capacitance and Dielectrics

NEWTON SCHOOL OF BRIGHT MINDS INC.

GENERAL INSTRUCTIONS:

1.) Use No. 2 pencil only to shade your answer. To change your answer, neatly erase your old answer and shade the new one. You may request a scratch paper from the proctor whenever you need to.
2.) Scientific calculators are allowed while other electronic devices are prohibited.
3.) Any form of cheating in examinations or any act of dishonesty in relation to studies shall be subject to disciplinary action.

I. Multiple Choice. Shade the letter of the BEST answer (5 points).

1. A charge was removed from one of the plates, the capacitance of the capacitors
   - (a) decreases
   - (b) stays the same
   - (c) increases
   - (d) it is halved

2. The energy of a charged capacitors could be found in
   - (a) plates
   - (b) potential difference
   - (c) charges
   - (d) electric field

3. When a slab of insulating material is placed between the plates of a charged capacitor, the electric field becomes
   - (a) less
   - (b) similar
   - (c) greater
   - (d) depends on the situation

4. A parallel plate capacitor has an energy of 2.5 J. It must be placed in a potential difference of
   - (a) 150 V
   - (b) 350 V
   - (c) 500 V
   - (d) 0.25 MV

5. Two 50 μF capacitor are connected in series. The equivalent capacitance of the combination is
   - (a) 25 μF
   - (b) 100 μF
   - (c) 50 μF
   - (d) 200 μF

II. True or False. Determine whether the statements are TRUE or FALSE by shading the BEST ANSWER (3 points).

6. Capacitors are devices formed from two conductors separated by an insulator.
   - (a) True
   - (b) False

7. Examples of insulators are plastic, liquid gel, paper, mica, ceramic, or even air.
   - (a) True
   - (b) False

8. The presence of the electric field found between the plates is directly proportional to the charge *Q* present in the conductors
   - (a) True
   - (b) False

III. Problem Solving. Solve the given problem. Write your GIVEN, REQUIRED, SOLUTION and box your final answer with proper statement (2 points).

9. The parallel plates have an area of 2000 cm^2 and are separated at 1.00 cm apart. The original potential difference between them is 3000 V and it decreased to 1000 V when a sheet of dielectric was inserted. What is the original capacitance?