

**Physics 3204**  
Unit 2: Section 2 -Current Electricity  
Worksheet 1: Electric Voltage

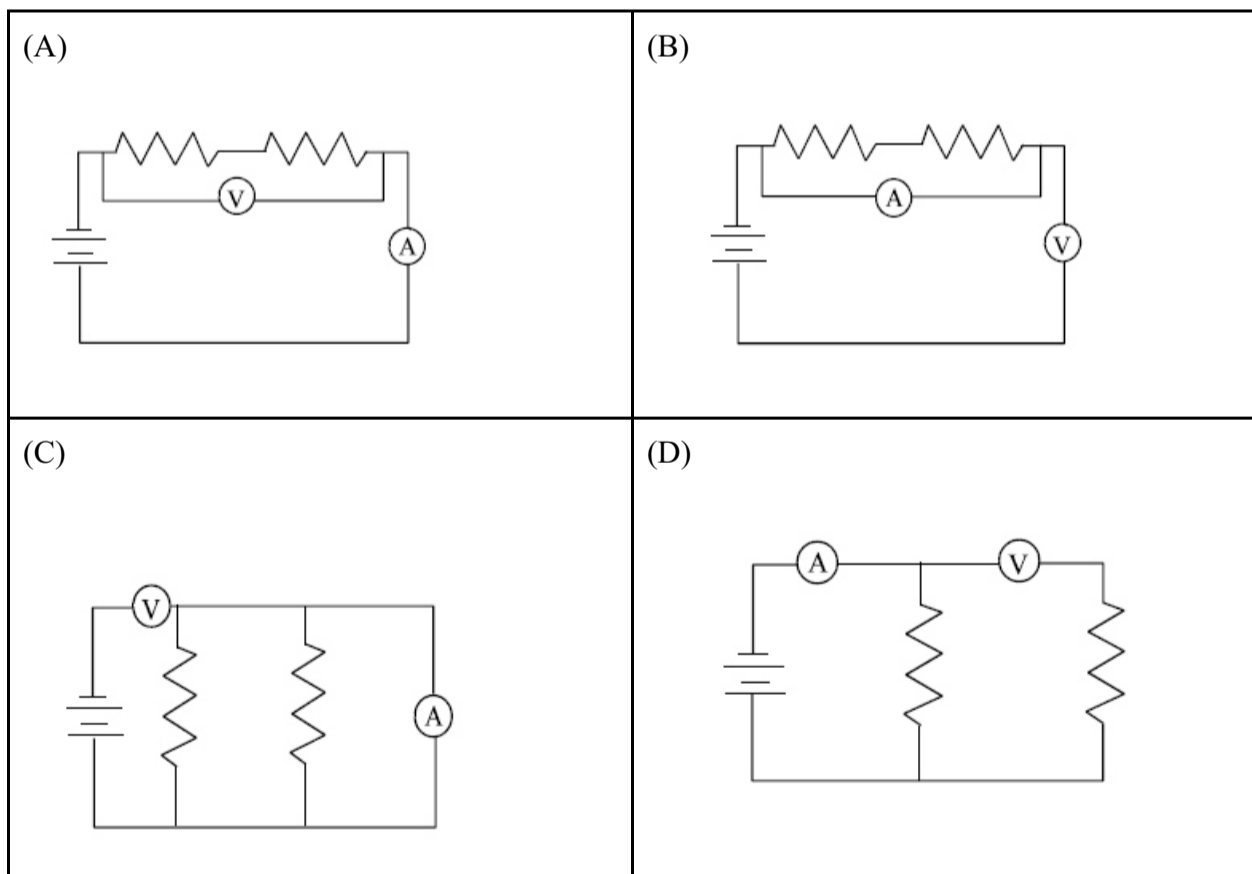
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**Part A : Multiple choice**

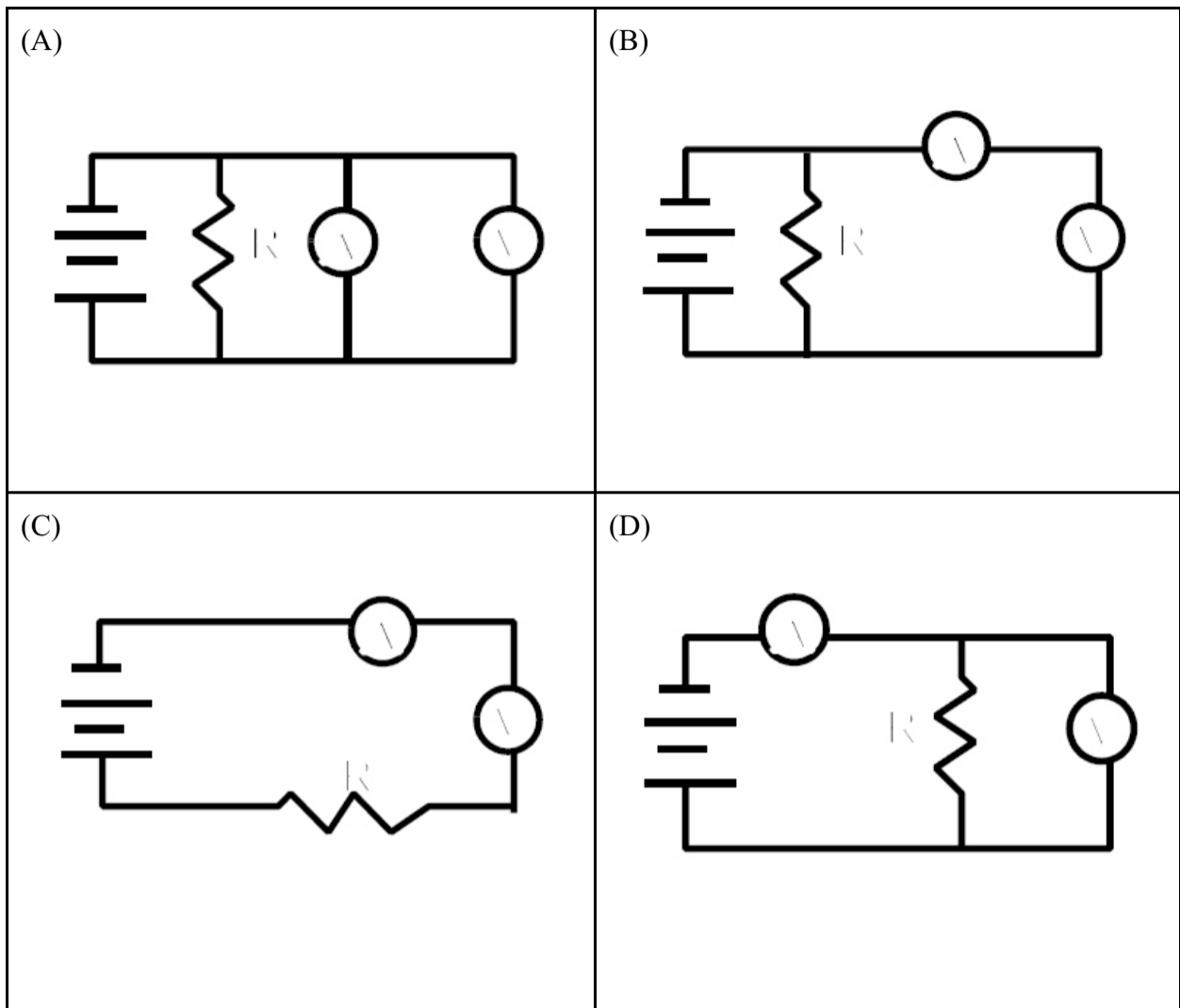
1. What is the unit of measurement for electric potential energy?
  - (A) Amperes
  - (B) Coulombs
  - (C) Joules
  - (D) Volts
  
2. What is the common name for potential difference?
  - (A) Amperes
  - (B) Current
  - (C) Joules
  - (D) Voltage
  
3. Both AA and C batteries are labeled 1.5 V. Which statement is true?
  - (A) They have different potential difference and potential energy.
  - (B) They have different potential difference but the same potential energy.
  - (C) They have the same potential difference and potential energy.
  - (D) They have the same potential difference but different potential energy.
  
4. In a standard flashlight battery, from which terminal do the electrons leave?
  - (A) Negative terminal
  - (B) Neutral terminal
  - (C) Positive terminal
  - (D) Voltage terminal
  
5. Which type of energy is converted to electrical energy using a piezo-electric device?
  - (A) chemical
  - (B) light
  - (C) mechanical
  - (D) thermal
  
6. Which is equivalent to 1 Volt?
  - (A) J
  - (B) C
  - (C) J/C
  - (D) Watts
  
7. What are the correct units for electric potential?
  - (A) J/s
  - (B) J/C
  - (C) N/m
  - (D) N/C

8. If the potential difference across a battery is 6.0 V, how much work is done to move  $6.0 \times 10^2$  C of charge through a circuit?
- (A)  $3.6 \times 10^{-3}$  J  
 (B)  $1.0 \times 10^{-2}$  J  
 (C)  $1.0 \times 10^2$  J  
 (D)  $3.6 \times 10^3$  J
9. The work required to move an electric charge between two points in an electric field is 0.0045 J. If the potential difference between these points is 12 V, what amount of charge is moved?
- (A)  $3.8 \times 10^{-4}$  C  
 (B)  $5.4 \times 10^{-2}$  C  
 (C)  $1.2 \times 10^2$  C  
 (D)  $2.7 \times 10^3$  C
10. By which process does a solar calculator get its energy?
- (A) photo electricity  
 (B) piezo-electricity  
 (C) thermoelectricity  
 (D) voltaic cell
11. Which circuit shows a voltmeter and ammeter positioned to measure the total potential difference of the circuit and the current through each resistor?



12. If  $4.8 \times 10^{-17}$  J of work is required to move an electron between two points in an electric field, what is the electric potential difference between these points?
- (A)  $1.6 \times 10^{-19}$  V  
 (B)  $4.8 \times 10^{-17}$  V  
 (C)  $3.0 \times 10^2$  V  
 (D)  $4.8 \times 10^2$  V

13. Which circuit diagram below shows the proper connection of an ammeter and voltmeter to measure the current through and potential difference across a resistor?



14. Which describes a voltaic cell?

- (A) consists of two identical metal plates connected by a conducting wire
- (B) consists of two identical metal plates immersed in an electrolyte
- (C) converts chemical energy into electrical energy
- (D) converts electrical energy into chemical energy