SEKOLAH HARAPAN BANGSA
Jl. Hartono Raya Modernland Tangerang 15117
Telp. (62-21) 5578 0936 Fax. (62-21) 5578 0938
www.shb.sch.id

CAMBRIDGE International Education
Cambridge International School

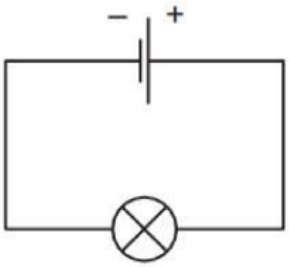
REMEDIAL MID TERM TEST I
ACADEMIC YEAR 2024/2025

Subject	: Physics	Day/Date	: Tuesday, 17 September 2024
Grade	: XA2	Duration	: 90 minutes
		Time	: 07.30 – 09.00

A. **INSTRUCTIONS**: choose the answer that you think is correct (60 points)

1. What is an electric field?
   a. a region around a wire carrying an electric current in which a compass needle experiences force
   b. a region in which an electric charge experiences a force
   c. a region in which an electric charge is attracted by the Earth's gravity
   d. a region through which electromagnetic radiation is passing

2. A. cell is connected to a lamp, as shown.

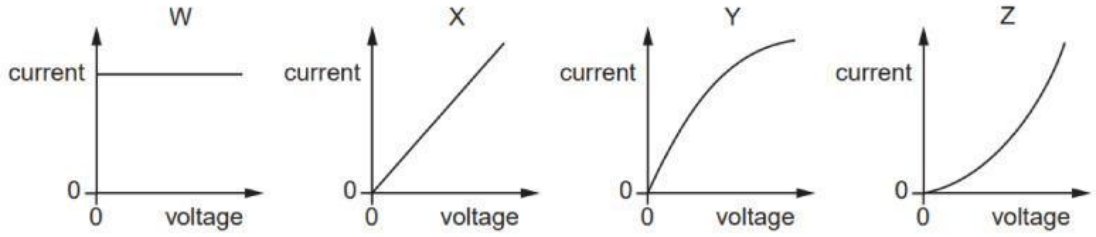


A charge of 4.0C flows through the lamp in 2 seconds. What is the direction of the electron flow in the lamp and what is the current in the lamp?

	the direction of electron flow in a lamp	Current(A)
A	from left to right	2
B	from left to right	8
C	from right to left	2
D	from right to left	8

LIVEWORKSHEETS

3. The diagrams show four current-voltage graphs.
Which two graphs show the characteristics of an ohmic resistor and of a filament lamp?



	ohmic resistor	filament lamp
A	W	Y
B	X	Y
C	W	Z
D	X	Z

4. A resistor of resistance R is connected to an e.m.f battery. V. There is a current I in the resistor. The resistor dissipates power P, and in time t the energy transferred is E.
Which expression is correct?
   a. $E = V \times I \times t$
   b. $E = P \times I \times t$
   c. $P = V \times I \times R$
   d. $P = V/R$

5. A wire has a certain electrical resistance. The diameter and length of the wire may be changed. Which pair of changes must cause the resistance of the wire to increase?

	change of diameter	change of length
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

6. The resistance of a wire depends on its length l and its cross-sectional area A. The resistance is
   a. directly proportional to l and directly proportional to A.
   b. directly proportional to l and inversely proportional to A.
   c. inversely proportional to l and directly proportional to A.
   d. inversely proportional to l and inversely proportional to A

LIVEWORKSHEETS

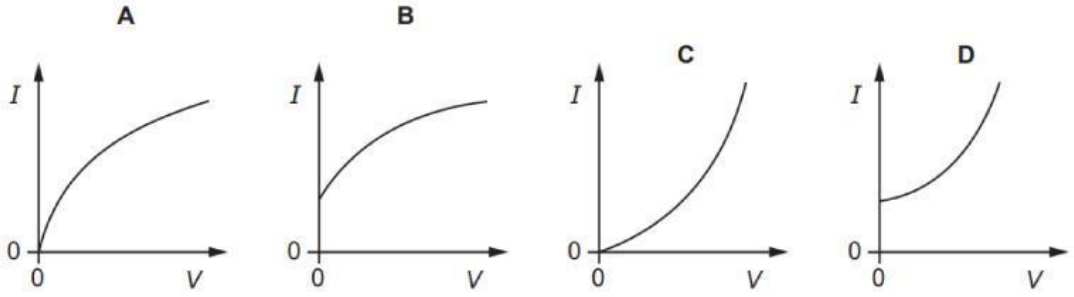
7. The diagram shows a piece of metal resistance wire.



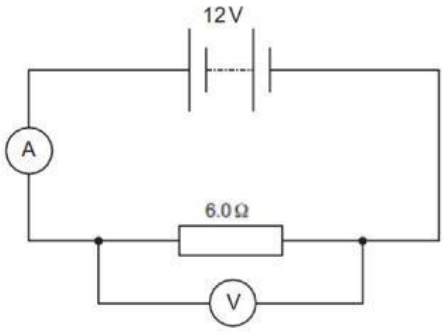
Which wire, made of the same metal, has a smaller resistance?

a. a wire of the same length with a larger diameter
b. a wire of the same length with a smaller diameter
c. a wire of greater length with the same diameter
d. a wire of greater length with a smaller diameter

8. A small potential difference V is applied across a filament lamp. The current I in the lamp is measured. V is increased in stages and I is measured at each stage. Which graph shows the results obtained?



9. In the circuit shown, the ammeter reads 2.0 A and the voltmeter reads 12 V
How much energy is transferred by the resistor in 10 seconds?



a. 2.4 J
b. 14.4 J
c. 240 J
d. 1440J

10. Diagram 1 shows two thin, uncharged strips of plastic. Diagram 2 shows the same strips after they have been rubbed with a dry cloth

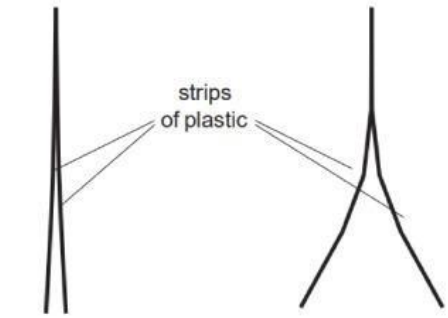


diagram 1 diagram 2

LIVEWORKSHEETS

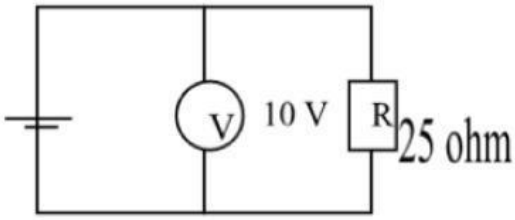
Which row describes the charge on the strips after rubbing, and the force between the strips after rubbing?

	charge on strips	force between strips
A	opposite	attraction
B	opposite	repulsion
C	the same	attraction
D	the same	repulsion

11. What is the resistance of an object that draws 0.24 A when connected to a 120 volt circuit?
    a. 0.024 ohms
    b. 28.8 ohms
    c. 124 ohms
    d. 500 ohms

12. If an electron does work of 20 J with a charge of 10 C in an electrical circuit, then what is the electromotive force (EMF) possessed by the circuit?
    a. 0.5 V
    b. 1.5 V
    c. 2 V
    d. 3 V

13. The electric energy absorbed by a resistor over 5 minutes is…



    a. 600 J
    b. 800 J
    c. 1,000 J
    d. 1,200 J

14. Which quantities is a voltmeter used to measure?
    a. current and e.m.f. only
    b. current and p.d. only
    c. e.m.f. and p.d. only
    d. e.m.f., current and p.d

15. What do the arrows in the circuit represent?



    a. conventional current
    b. electromotive force
    c. electron flow
    d. voltage

LIVEWORKSHEETS