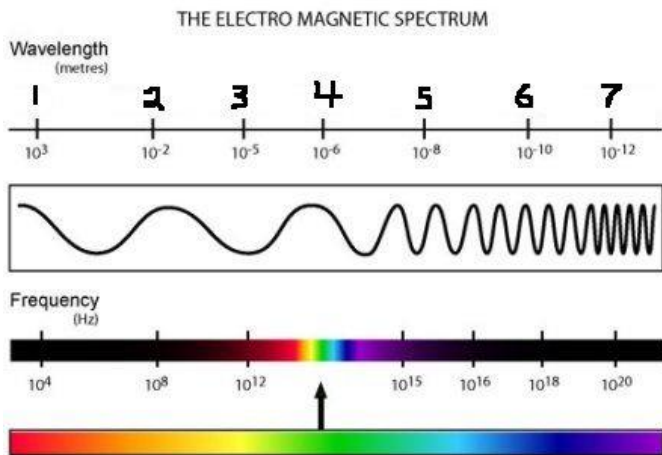


Physics Questions for category 2

1. A sound with a high frequency has a \_\_\_\_\_ pitch. A sound with a \_\_\_\_\_ frequency has a low pitch.

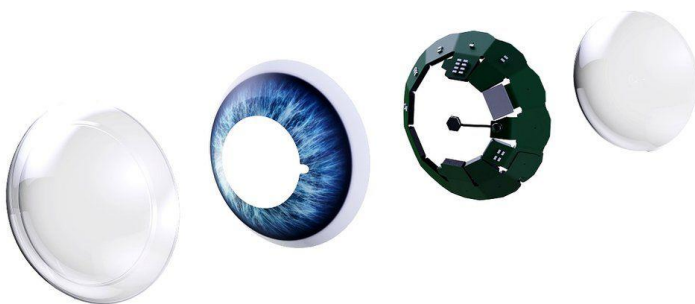
- A. high, low
- B. low, high
- C. medium, high
- D. high, medium

2. 4 is .....



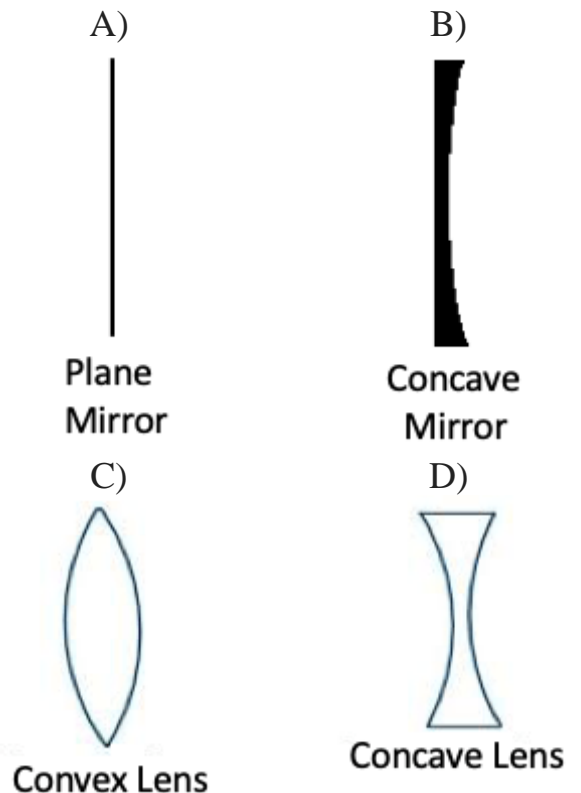
- A. radio
- B. UV
- C. Visible Light
- D. X-ray

3. A student uses a lens of focal length -20 cm. What is the power of the lens

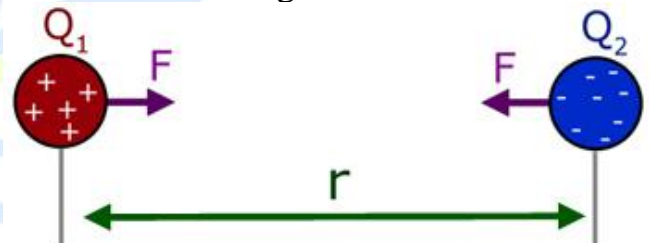


- A. +0.5D
- B. -0.5D
- C. +5D
- D. -5D

4. Which device uses refraction to converge light?



5. Calculate the force exerted between two charged objects separated by a distance of 0.6 m. One object has a charge of -5 C and the other has a charge of +2.0 C.

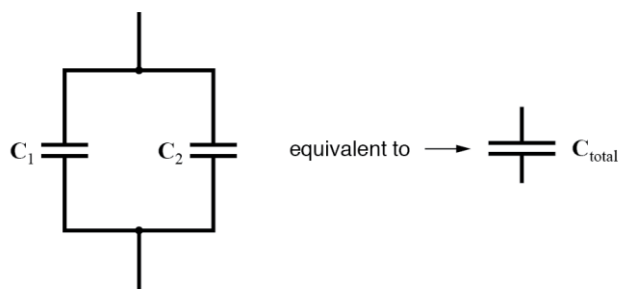


- A.  $-1.5 \times 10^{-11}$  N
- B.  $2.5 \times 10^{11}$  N
- C.  $-2.5 \times 10^{11}$  N
- D.  $-7.5 \times 10^{-10}$  N

6. An electrostatic force of  $2 \times 10^2$  newtons is exerted on a charge of 4 coulombs at point P in an electric field. The magnitude of the electric field intensity at P is

- A.  $8 \times 10^2$  N/C
- B. 5 N/C
- C.  $2 \times 10^{-2}$  N/C
- D. 50 N/C

7. Two  $5\mu\text{F}$  capacitors are connected in parallel. The equivalent capacitance is \_\_\_\_\_.



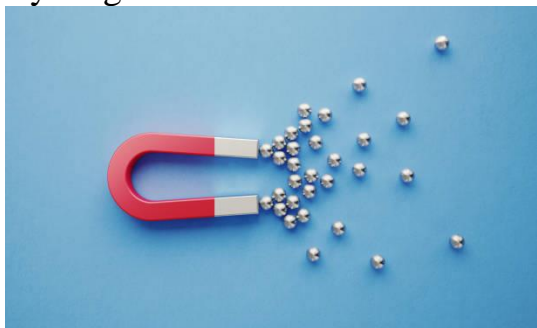
- A.  $25\mu\text{F}$
- B.  $10\mu\text{F}$
- C.  $2.5\mu\text{F}$
- D.  $1\mu\text{F}$

8. Ancient people discovered magnetic rocks called lodestone. What did they use them for?



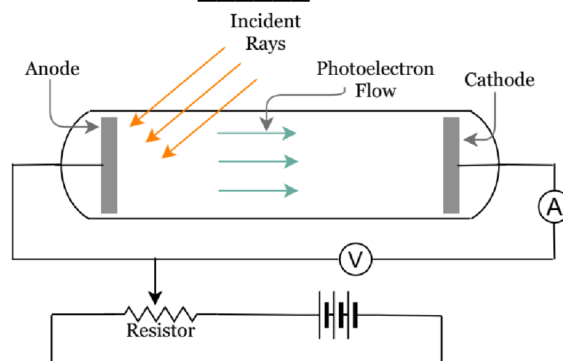
- A. fires
- B. compasses
- C. sculptures
- D. weapons

9. Every magnet has a:



- A. East and West pole
- B. North and South pole
- C. East and South pole
- D. North and West pole

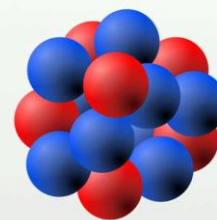
10. Photoelectric effect provides the evidence for the \_\_\_\_\_ nature of radiation.



- A. Dual
- B. Wave
- C. Particle
- D. Electromagnetic

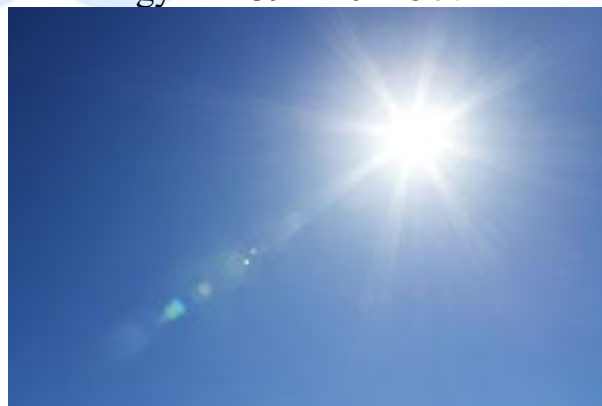
11. The force that keeps nucleons together is .....

## Nucleon



- A. A strong nuclear force.
- B. A weak nuclear force.
- C. An electromagnetic force.
- D. A gravitational force.

12. What is the frequency of UV light that has an energy of  $2.39 \times 10^{-18} \text{ J}$ ?



- A.  $2.32 \times 10^9 \text{ Hz}$
- B.  $3.60 \times 10^{15} \text{ Hz}$
- C.  $1.58 \times 10^{-51} \text{ Hz}$
- D.  $3 \times 10^8 \text{ m/s}$

13. "For every action, there is an equal and opposite reaction."

- A. Newton's 1st Law
- B. Newton's 2nd Law
- C. Newton's 3rd Law
- D. Newton's 4th Law

14. Two football players with mass 75 kg and 100 kg run directly toward each other with speeds of 6 m/s and 8 m/s respectively. If they grab each other as they collide, the combined speed of the two players just after the collision would be:

- A. 2 m/s
- B. 3.4 m/s
- C. 4.6 m/s
- D. 7.1 m/s

15. The force of gravity on Jupiter is a little more than 2 times the gravitational force on Earth. If an object has a mass of 50 kg and a weight of 490 N on Earth, what would be the object's approximate mass and weight on Jupiter?



- A. 50 kg and 490 N
- B. 100 kg and 490 N
- C. 50 kg and 980 N
- D. 100 kg and 980 N

16. What is the pressure under a liquid of density 11.35 kg/m<sup>3</sup>, at a depth (height) of 65m?  $g=10 \text{ N/kg}$

- A. 7230 Pa
- B. 0.175 Pa
- C. 737.75 Pa
- D. 65 Pa

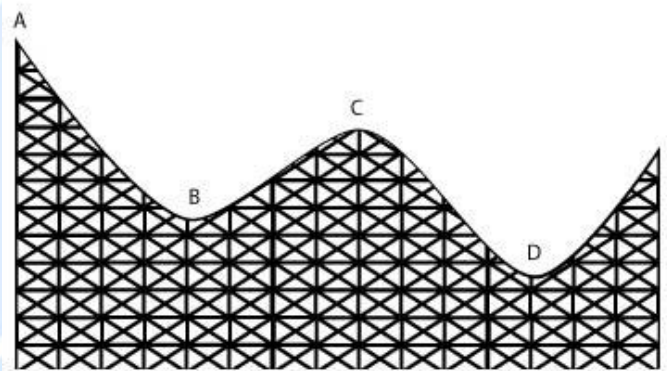
17. A 50 kg ball rolls down the street at 5 m/s. Calculate the momentum of the ball.

- A. 55 kg\*m/s
- B. 100 kg\*m/s
- C. 250 kg\*m/s
- D. 500 kg\*m/s

18. Calculate the KE of a runner that has a mass of 80 kg and is running at a velocity of 8 m/s

- A. 5120 J
- B. 320 J
- C. 640 J
- D. 2560 J

19. If there is no friction on this track, at which point would the coaster have the most kinetic energy?



- A. A
- B. B
- C. C
- D. D

20. When an electric heater is supplied with an electric power of 2.0 kW to heat 4.0 kg of water for 1 minute, calculate the increase in temperature of the water. Assume that the specific heat capacity of water is 4200 J kg<sup>-1</sup> °C<sup>-1</sup> and there is no heat loss to the surroundings.

- A. 3.050C
- B. 7.10C
- C. 140C
- D. 300C

21. If a wave is traveling at 260 m/s and has a wavelength of 0.8 m/s, what is its frequency in .....Hz?

**Answer:**

22. If the battery produced 12 Volts and what would be the current flow be for a 6 Ohm resistor in ..... A.

**Answer:**

23. A \_\_\_\_\_ is a device that has a magnet on a needle that spins freely. It is used for navigation because its needle usually points north.

**Answer:**

24. Calculate the density of an object in  $\text{g/cm}^3$ . To do this, we measure its mass on some scales, obtaining a value of 60 g. We also measure its volume in a graduated cylinder. The water initially has a volume of  $22\text{cm}^3$ . When we put the object in the water, the volume rises to  $34\text{cm}^3$ .

**Answer:**

25. Light travels through a liquid at  $1.5 \times 10^8$  m/s. What is the refractive index of the liquid?

**Answer:**

FISO