

PHYSICS

ABCD

1. What is the name of the person in the photograph?



- ☐ Isaac Newton
- ☐ Johannes Kepler
- ☐ Galileo Galilei
- ☐ Nicolaus Copernicus

INTEGER

2. What is the tangent of an angle of 0 degrees?

Answer: _____

ABCD

3. What is the semiconductor component used, among other things, to amplify signals called?

- ☐ Resistor
- ☐ Transformer
- ☐ Capacitor
- ☐ Transistor

PLANET

4. Which planet has the lowest orbital speed?

- ☐ Mercury
- ☐ Venus
- ☐ Earth
- ☐ Mars
- ☐ Jupiter
- ☐ Saturn
- ☐ Uranus
- ☐ Neptune

INTEGER

5. How many isotopes does hydrogen have?

Answer: _____

AGE

6. In which century did the French scholar Blaise Pascal live?

Answer: _____

INTEGER

7. How many cables make up one nautical mile?

Answer: _____

INTEGER

8. How many moons do all the rocky planets in the Solar System have in total?

Answer: _____

ORDER

9. Match the units to the physical quantities in the following order:

- 1. hertz,**
- 2. ohm,**
- 3. volt,**
- 4. newton.**

Number the items in the correct order.

- ☐ electrical resistance
- ☐ force
- ☐ voltage
- ☐ frequency

ABCD

10. Which letter denotes force in physics?

- ☐ S
- ☐ F
- ☐ P
- ☐ W

ABCD

11. What is the unit of electrical capacitance called?

- ☐ Farad
- ☐ Henry
- ☐ Coulomb
- ☐ Ohm

INTEGER

12. How many people have set foot on the Moon?

Answer: _____

± You can be off by 2.

ABCD

13. In what units is acceleration expressed in the SI system?

- ☐ kg·m/s
- ☐ m/s
- ☐ N/m²
- ☐ m/s²

INTEGER

14. How many centimetres are there in a metre?

Answer: _____

ABCD

15. Which is denser: water or ice?

- ☐ Ice
- ☐ Water

ABCD

16. What is "cold light", the emission of light not caused by high temperature, called?

- ☐ Luminescence
- ☐ Diffraction
- ☐ Refraction
- ☐ Incandescence

ORDER

17. Arrange the planets of the Solar System from the lightest to the heaviest.

Number the items in the correct order.

- ☐ Jupiter
- ☐ Neptune
- ☐ Mars
- ☐ Earth

YES/NO

18. Do sound waves need something physical to carry their vibrations?

- ☐ No
- ☐ Yes

INTEGER

19. What is the maximum number of electrons in the first electron shell (K)?

Answer: _____

YES/NO

20. Does gamma radiation penetrate matter?

- ☐ No
- ☐ Yes

Answers

PHYSICS

1. **Isaac Newton**

2. **0**

3. **Transistor**

The transistor was invented in 1947 at Bell Labs by John Bardeen, Walter Brattain and William Shockley. They received the Nobel Prize in Physics for it.

4. **Neptune**

The speed is 5.5 km/s.

5. **3**

Hydrogen has three isotopes. These are protium, deuterium and tritium.

6. **XVII century**

He lived from 1623 to 1662; physics owes Pascal's law to him.

7. **10**

The cable is a unit of distance used in navigation, equal to 185.2 metres.

8. **3**

Mercury has no moons.

Venus has no moons.

Earth – 1 moon.

Mars – 2 moons.

9. **frequency → electrical resistance → voltage → force**

10. **F**

The symbol comes from the word "force". The SI unit of force is the newton.

11. **Farad**

A conductor has a capacitance of 1 farad when a charge of 1 coulomb raises its potential by 1 volt. The name honours Michael Faraday.

12. **12**

13. **m/s²**

14. **100**

15. **Water**

That is why ice floats on water. Water is densest at about 4 °C.

16. **Luminescence**

17. **Mars → Earth → Neptune → Jupiter**

18. **Yes**

19. **2**

The successive shells are labeled with the letters K, L, M, N, O, P and Q.

20. **Yes**

Yes. It is penetrating ionizing radiation – thick layers of lead or concrete are used to shield against it.

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