Розробники: Книш Тетяна Валентинівна

Тест ::: 8_сем_ФІЗИКА, ПРИКЛАДНА ФІЗИКА (Екзамен)

Тема :: Дефініція

1. *Встановіть відповідність між дефініцією та словом:*
    - The study of electric and magnetic force fields
    - Any of a number of chemical elements, such as iron or copper, that are often lustrous ductile
    - The branch of science concerned with the nature and properties of matter and energy
    - Substance, such as germanium or silicon, that has an electrical conductivity that increases with temperature and is intermediate between that of a metal and an insulator
    - The branch of mechanics concerned with the forces that change or produce the motions of bodies

    Відповідність: METAL ; ELECTROMAGNETISM ;

2. *Встановіть відповідність між дефініцією та словом:*
    - Substance/ medium that can sustain an electric field; substance/ body of very low electrical conductivity; insulator
    - Process of moving or being moved back and forth very rapidly
    - Rate of increase in the velocity of sth
    - Speed of motion action or operation rapidity swiftness
    - The emission of energy as electromagnetic waves or as moving subatomic particles especially high-energy particles which cause ionization

    Відповідність: VIBRATION ; DIELECTRIC ;

3. *Встановіть відповідність між дефініцією та словом:*
    - A stable subatomic particle with a charge of negative electricity found in all atoms and acting as a primary carrier of electricity in solids
    - A flow of electrons in the conductor
    - Hypothetical gas which obeys Boyle's law exactly at all temperatures and pressures, and which has internal energy that depends only upon the temperature
    - Find out the size, length, quantity, rate of sth using a suitable instrument or device
    - Imaginary straight line around which an object, such as the earth, rotates

    Відповідність: ELECTRIC CURRENT ; ELECTRON ;

4. *Встановіть відповідність між дефініцією та словом:*
    - Substance in a physical state in which it does not resist change of shape but does resist change of size
    - Branch of physics and technology concerned with the design of circuits using transistors and microchips
    - Rate of increase in the velocity of sth
    - Instrument measuring atmospheric pressure used especially in forecasting the weather and determining altitude
    - Speed of motion action or operation rapidity swiftness

    Відповідність: ELECTRONICS ; LIQUID ;

5. *Встановіть відповідність між дефініцією та словом:*
    - Speed of motion action or operation rapidity swiftness.
    - A form of energy used to produce heat light power etc.
    - Fraction of a cycle of a periodic quantity that has been completed at a specific referance time,expressed as an angle.
    - Gas which does not behave exactly as predicted.
    - The smallest particle of a chemical element that can exist alone or in combination.

    Відповідність: ELECTRICITY ; VELOCITY ;

6. *Встановіть відповідність між дефініцією та словом:*
    - Bar magnet

- Electromagnet
- Horseshoe magnet
- Field magnet
- Magnetite

Відповідність: PERMANENT MAGNET ; TEMPORARY MAGNET ;

7. *Встановіть відповідність між дефініцією та словом:*
   - Thomas Edison
   - A magnet's pull is the strongest, and they are called N and S.
   - Alexander Graham Bell
   - Magnet's pull is the weakest, and they are called E and W.
   - The middle of the magnet meets.

   Відповідність: THE POLES ARE THE PLACES WHERE: ; THE TRUE "FATHER OF AMERICAN ELECRTRICITY" ;

8. *Встановіть відповідність між дефініцією та словом:*
   - Electricity produced by friction
   - An instrument that measures power
   - The path along which electrons flows
   - An instrument that measures wind
   - An instrument that measures force

   Відповідність: STATIC ELECTRICITY ; MULTIMETER ;

9. *Встановіть відповідність між дефініцією та словом:*
   - Incomplete circuit through which electricity won't flow
   - Material that allows electricity to flow
   - Complete circuit through which electricity flows
   - Holds many components
   - Material that prevents the flow of electricity

   Відповідність: OPEN CIRCUIT ; CONDUCTOR ;

10. *Встановіть відповідність між дефініцією та словом:*
    - The push or pull of a magnet on other magnetic material
    - Electricity
    - Pushing objects apart
    - Magnetism
    - An area around a magnet where the magnetic force exists

    Відповідність: LIGHTNING IS A FORM OF ; MAGNETIC FORCE ;

11. *Встановіть відповідність між дефініцією та словом:*
    - Neither acidic or alkaline molecules; with zero charge or potential.
    - Electrons
    - The flow of electrons around a nucleus
    - Atoms
    - The flow of electrons down a path

    Відповідність: ELECTRICITY IS THE MOVEMENT OF ; NEUTRAL MOLECULES ;

12. *Встановіть відповідність між дефініцією та словом:*
    - Material that prevents the flow of electricity
    - A magnet made when electric charges move through a coil of wire wrapped around an iron core, or center
    - Commonly metal and allows the flow of energy
    - It is a compass
    - A device that produces electric current from energy stored in chemicals

    Відповідність: INSULATOR ; ELECTROMAGNET ;

13. *Встановіть відповідність між дефініцією та словом:*
    - Device used to open and close circuits
    - An electrical device by which alternating current of one voltage is changed to another voltage
    - Metal clip
    - Complete circuit

- A flow of electrons in the conductor

Відповідність: TRANSFORMER ; SWITCH ;

14. *Встановіть відповідність між дефініцією та словом:*
    - Uses electricity from the source to make something happen
    - Volt
    - Metal clip
    - Ohm
    - Device that opens circuits

    Відповідність: ELECTRICITY RECEIVER ; THE UNIT OF MEASUREMENT FOR ELECTRIC POTENTIAL ;

15. *Встановіть відповідність між дефініцією та словом:*
    - A coil of wire with many loops through which an electric current passes
    - It is electrical magnetic force
    - A type of magnet that does NOT produce an electric current
    - Electric magneto faraday
    - Used to attract plastic items

    Відповідність: ELECTROMAGNET ; THE FULL FORM OF EMF ;

16. *Встановіть відповідність між дефініцією та словом:*
    - Circuit
    - Source of electricity
    - A light bulb
    - Educated guess
    - Material preventing electricity

    Відповідність: A PATH FOR ELECTRICITY IS ; D-CELL ;

17. *Встановіть відповідність між дефініцією та словом:*
    - Cross at the south pole.
    - Magnetometer
    - Cross at the north pole.
    - Mangnetogram
    - Cross halfway between the poles.

    Відповідність: MAGNETIC FIELD LINES ; INSTRUMENT IS USED TO MEASURE MAGNETIC FIELDS ;

18. *Встановіть відповідність між дефініцією та словом:*
    - Metal clip that connects wires
    - The relationship between the amount charge on two objects and the voltage that appears between them
    - A coil of wire with many loops through which an electric current passes
    - Device used to open and close circuits
    - Part of bulb that heats up

    Відповідність: CAPACITANCE ; FAHNESTOCK CLIP ;

19. *Встановіть відповідність між дефініцією та словом:*
    - Is a circuit element that usually consists of a coil of wire, and is used to store energy in a magnetic field
    - Exert magnetic forces on other magnets or on moving charges at a distance
    - Device used to open and close circuits
    - A mathematical determination of the amount or number of something
    - The emission of energy as electromagnetic waves or as moving subatomic particles especially high-energy particles which cause ionization

    Відповідність: MAGNETIC FIELD ; AN INDUCTOR ;

20. *Встановіть відповідність між дефініцією та словом:*
    - Is the degree to which a material can prevent current (or bad guys) from moving through it
    - Substance or medium that conducts heat, light, sound, or especially an electric charge
    - The process of learning something that was not known before, or of finding someone or something that was missing or hidden
    - The force that causes the movement of electrons through an electrical circuit

- Substance/ medium that can sustain an electric field; substance/ body of very low electrical conductivity; insulator

Відповідність: CONDUCTOR ; RESISTANCE ;

21. *Встановіть відповідність між дефініцією та словом:*
    - The process of learning something that was not known before, or of finding someone or something that was missing or hidden
    - The force that causes the movement of electrons through an electrical circuit
    - A machine, tool, or system that someone has made, designed, or thought of for the first time
    - The public supply of electricity for people to use in their homes, offices etc.
    - Ability or capacity to do something

    Відповідність: ELECTROMOTIVE FORCE ; DISCOVERY ;

22. *Встановіть відповідність між дефініцією та словом:*
    - A machine, tool, or system that someone has made, designed, or thought of for the first time
    - The public supply of electricity for people to use in their homes, offices etc.
    - The branch of science concerned with the nature and properties of matter and energy.
    - Substance, such as germanium or silicon, that has an electrical conductivity that increases with temperature and is intermediate between that of a metal and an insulator.
    - The branch of mechanics concerned with the forces that change or produce the motions of bodies.

    Відповідність: INVENTION ; MAINS ELECTRICITY ;

23. *Встановіть відповідність між дефініцією та словом:*
    - Ability or capacity to do something
    - Electricity that does not flow in a current but is found in some objects when they rub together and can give an electric shock
    - Groups of atoms with aligned magnetic poles
    - An electrical device by which alternating current of one voltage is changed to another voltage
    - Advanced scientific knowledge used for practical purposes, especially in industry

    Відповідність: STATIC ELECTRICITY ; POWER ;

24. *Встановіть відповідність між дефініцією та словом:*
    - Advanced scientific knowledge used for practical purposes, especially in industry
    - Provides energy
    - Point at which two lines cross
    - Pathway of electricity
    - Ability or capacity to do something

    Відповідність: ELECTRICITY SOURCE ; TECHNOLOGY ;

25. *Встановіть відповідність між дефініцією та словом:*
    - The loss of static electricity as electric charges transfer from one object to another.
    - Measuring instrument that detects electric charge
    - Hypothetical gas which obeys Boyle's law exactly at all temperatures and pressures, and which has internal energy that depends only upon the temperature
    - Find out the size, length, quantity, rate of sth using a suitable instrument or device
    - Imaginary straight line around which an object, such as the earth, rotates

    Відповідність: ELECTROSCOPE ; STATIC DISCHARGE ;

26. *Встановіть відповідність між дефініцією та словом:*
    - Groups of atoms with aligned magnetic poles
    - An electrical device by which alternating current of one voltage is changed to another voltage
    - A stable subatomic particle with a charge of negative electricity found in all atoms and acting as a primary carrier of electricity in solids.
    - A flow of electrons in the conductor
    - Hypothetical gas which obeys Boyle’s law exactly at all temperatures and pressures, and which has internal energy that depends only upon the temperature.

    Відповідність: MAGNETIC DOMAIN ; TRANSFORMER ;

27. *Встановіть відповідність між дефініцією та словом:*

- A primary light color - red, blue, or green; these three colors produce white light when added together.
- An area of physics that studies the production of light.
- A piece of transparent or reflecting material, which contains many thousands of parallel lines per centimeter; used to produce a light spectrum by diffraction.
- A substance that cannot be broken down into simpler substances by ordinary means.
- A process by which the concentration or density of something is decreased.

Відповідність: OPTICS ; ADDITIVE COLOR ;

28. *Встановіть відповідність між дефініцією та словом:*
    - The angle between a wave striking a barrier and the line perpendicular to the surface.
    - Light in which all waves are vibrating in a single plane.
    - The bending of waves around obstacles, or the spreading of waves by passing them through an aperture.
    - Invisible electromagnetic radiation of great penetrating power.
    - The total linear length of one wave crest and trough.

    Відповідність: ANGLE OF INCIDENCE ; POLARIZED LIGHT ;

29. *Встановіть відповідність між дефініцією та словом:*
    - The angle between a reflected wave and the normal to the barrier from which it is reflected.
    - A transparent material with two or more straight faces at an angle to each other.
    - An image formed by a mirror or lens that cannot be projected onto a surface.
    - The spreading out of light by intersecting objects, whose size is near the wavelength.
    - When two or more light rays overlap exactly at the crest and the trough, they are said to be "in phase."

    Відповідність: PRISM ; ANGLE OF REFLECTION ;

30. *Встановіть відповідність між дефініцією та словом:*
    - A lens that is thinner in the middle than at the edges; used to correct nearsightedness.
    - An image that can be projected onto a screen; formed by a parabolic mirror or convex lens.
    - Angle of incidence equals the angle of reflection.
    - A line perpendicular to a surface.
    - A thin strand of glass that transmits light down its length.

    Відповідність: CONCAVE LENS ; REAL IMAGE ;

31. *Встановіть відповідність між дефініцією та словом:*
    - A lens that is thicker in the middle than at the edges; used to correct farsightedness.
    - The transfer of energy by means of electromagnetic waves, which require no physical medium (for example, water or air) for the transfer. Earth reseives the Sun's energy (including its light), via the electromagnetic spectrum, by means of radiation.
    - The number of waves that pass a point in a given unit of time.
    - The reproduction of an object formed with lenses or mirrors.
    - The addition by crossing wave patterns of a loss of energy in certain areas and reinforcement of energy in other areas.

    Відповідність: RADIATION ; CONVEX LENS ;

32. *Встановіть відповідність між дефініцією та словом:*
    - Transverse radiant energy waves, ranging from low frequency to very high frequency, which can travel at the speed of light.
    - A material that absorbs certain colors of light and reflects other colors.
    - When the crest of one wave overlaps the trough of another they are said to be "out of phase."
    - A mirror with a flat surface.
    - The spreading out of light by intersecting objects, whose size is near the wavelength.

    Відповідність: PIGMENT ; ELECTROMAGNETIC SPECTRUM ;

33. *Встановіть відповідність між дефініцією та словом:*
    - The distance between the principal focus of a lens or mirror and its optical center.
    - The line straight out from the center of a parabolic mirror; straight line through the center of a lens.
    - Surface of a lens or mirror that is part of a sphere.
    - A primary light color - red, blue, or green; these three colors produce white light when added together
    - An area of physics that studies the production of light.

    Відповідність: OPTICAL AXIS ; FOCAL LENGTH ;

34. *Встановіть відповідність між дефініцією та словом:*
    - The point that all light rays from a mirror or lens pass through.
    - High-energy wave of high frequency and with a wavelength shorter than an x ray; released in a nuclear reaction.
    - The angle between a wave striking a barrier and the line perpendicular to the surface.
    - Light in which all waves are vibrating in a single plane.
    - The spreading out of light by intersecting objects, whose size is near the wavelength.

    Відповідність: FOCAL POINT/FOCUS ; GAMMA RAY ;

35. *Встановіть відповідність між дефініцією та словом:*
    - The amount that light is refracted when it enters a substance; given as the ratio of speed of light in a vacuum to its speed in a given substance.
    - A tube with magnifying lenses or mirrors that collect, transmit, and focus light.
    - The angle between a reflected wave and the normal to the barrier from which it is reflected.
    - A transparent material with two or more straight faces at an angle to each other.
    - The reproduction of an object formed with lenses or mirrors.

    Відповідність: INDEX OF REFRACTION ; OPTICAL TELESCOPE ;

36. *Встановіть відповідність між дефініцією та словом:*
    - Invisible radiation with a longer wavelength than red light and next to red light in the electromagnetic spectrum; used in heat lamps, to detect heat loss from buildings, and to detect certain tumors.
    - Band of visible colors produced by a prism when white light is passed through it.
    - A lens that is thinner in the middle than at the edges; used to correct nearsightedness.
    - An image that can be projected onto a screen; formed by a parabolic mirror or convex lens.
    - A line perpendicular to a surface.

    Відповідність: VISIBLE LIGHT SPECTRUM ; INFRARED RADIATION ;

37. *Встановіть відповідність між дефініцією та словом:*
    - A curved, transparent object; usually made of glass or clear plastic and used to direct light.
    - Band of visible colors produced by a prism when white light is passed through it.
    - A lens that is thicker in the middle than at the edges; used to correct farsightedness.
    - The transfer of energy by means of electromagnetic waves, which require no physical medium (for example, water or air) for the transfer. Earth reseives the Sun's energy (including its light), via the electromagnetic spectrum, by means of radiation.
    - One of the three pure pigment colors—magenta, yellow, cyan; these pigment colors produce black when mixed.

    Відповідність: LENS ; VISIBLE LIGHT SPECTRUM ;

38. *Встановіть відповідність між дефініцією та словом:*
    - It is a form of energy, traveling through the universe in waves. The wavelengths of visible light range from less than 4,000 angstroms to more than 7,000 angstroms.
    - One of the three pure pigment colors-magenta, yellow, cyan; these pigment colors produce black when mixed.
    - Transverse radiant energy waves, ranging from low frequency to very high frequency, which can travel at the speed of light.
    - A material that absorbs certain colors of light and reflects other colors.
    - The distance between the principal focus of a lens or mirror and its optical center.

    Відповідність: SUBTRACTIVE COLOR ; LIGHT ;

39. *Встановіть відповідність між дефініцією та словом:*
    - Not transparent; no light passes through the material.
    - The total linear length of one wave crest and trough.
    - High-energy wave of high frequency and with a wavelength shorter than an x ray; released in a nuclear reaction.
    - The amount that light is refracted when it enters a substance; given as the ratio of speed of light in a vacuum to its speed in a given substance.
    - A tube with magnifying lenses or mirrors that collect, transmit, and focus light.

    Відповідність: WAVELENGTH ; OPAQUE ;

40. *Встановіть відповідність між дефініцією та словом:*

- The light or image you see when light bounces off a surface; bouncing a wave or ray off a surface.
- Semitransparent; a material that admits some light.
- Invisible radiation with a longer wavelength than red light and next to red light in the electromagnetic spectrum; used in heat lamps, to detect heat loss from buildings, and to detect certain tumors.
- Band of visible colors produced by a prism when white light is passed through it.
- A lens that is thinner in the middle than at the edges; used to correct nearsightedness.

Відповідність: REFLECTION ; TRANSLUCENT ;

41. *Встановіть відповідність між дефініцією та словом:*
    - Bending of a wave or light ray caused by a change in speed as it passes at an angle from one substance into another.
    - A substance through which light travels, such as air, water, or glass. Because light moves by radiation, it does not require a medium, and, in fact, movement through a medium slows the speed of light somewhat.
    - Light is a form of energy, traveling through the universe in waves. The wavelengths of visible light range from less than 4,000 angstroms to more than 7,000 angstroms.
    - One of the three pure pigment colors—magenta, yellow, cyan; these pigment colors produce black when mixed.
    - Transverse radiant energy waves, ranging from low frequency to very high frequency, which can travel at the speed of light.

    Відповідність: REFRACTION ; MEDIUM ;

42. *Встановіть відповідність між дефініцією та словом:*
    - See-through; light can go through.
    - A three-dimentional glassshape Used for the diffusion of light rays.
    - Not transparent; no light passes through the material.
    - The total linear length of one wave crest and trough.
    - High-energy wave of high frequency and with a wavelength shorter than an x ray; released in a nuclear reaction.

    Відповідність: PRISM ; TRANSPARENT ;

Тема :: Дієслово

43. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

    FARADAY WAS NOT YET TWENTY WHEN HE (TO BEGIN) EXPERIMENTING.

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44. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

    IN 1911 RUTHERFORD (TO CONCLUDE) THAT ALL ATOMS MUST HAVE A CENTRAL POSITIVELY CHARGED NUCLEUS.

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45. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

    THE MAGNITUDE OF VELOCITY (TO CALL) SPEED.

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46. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

    INTERMOLECULAR (TO FORCE) ACCOUNT FOR MANY OF THE PHYSICAL PROPERTIES OF A LIQUID.

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47. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

HIGHLY VISCOUS LIQUIDS OFTEN (TO CONTAIN) MOLECULES THAT HAVE COMPLICATED STRUCTURES.

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48. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

A HORIZONTAL FILTER (TO ABSORB) PHOTONS WHOSE ELECTRIC VECTORS ARE VERTICAL.

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49. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

A MOVING AUTOMOBILE (TO LOSE) ITS KINETIC ENERGY WHEN THE BRAKERS ARE APPLIED.

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50. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

IN A LIGUID THE HOTTEST PARTICLES (TO MOVE) THE FASTEST.

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51. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

RFDIATION (TO TRAVEL) THROUGH ANYTHING SEE-THROUGH INDUDING A VACUUM.

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52. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

TWO THINGS WITH THE SAME ELECTRIC CHARGE (TO REPEL) EACHh OTHER.

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53. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

ELECTRICITY (TO OCCUR) IN TWO FORMS: STATIC ELECTRICITY AND ELECTRIC CURRENT.

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54. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

THE LOSS OF ENERGY (TO CAUSE) THE MOLECULES TO MOVE MORE SLOWLY.

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55. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

THE THREE LAWS OF MOTION (TO DEVISE) BY ENGLISH PHYSICIST SIR ISAAC NEWTON.

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56. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

POTENTIAL ENERGY IS THE ENERGY THAT A BODY (TO STORE) WITHIN IT.

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57. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

MANKIND (TO BE) IN SEARCH FOR NEW SOURCES OF ENERGY.

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58. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

WHEN THE MAGNET (TO HEAT) IT LOST SOME OF ITS MAGNETISM.

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59. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

STUDENTS (TO CARRY) OUT MORE THAN 100 EXPERIMENTS THIS WEEK.

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60. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

SCIENTISTS (TO LEARN) THROUGH EXPERIMENTATION THAT LIGHT BEHAVES LIKE A PARTICLE AT TIMES AND LIKE A WAVE AT OTHER TIMES.

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61. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

OPTICS (TO DEAL) WITH PROPAGATION OF LIGHT.

_____

62. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

THOMAS ALVA EDISON (TO INVENT) THE FORERUNNER OF THE RECORD PLAYER.

_____

63. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

THE THREE LAWS OF MOTION (TO BE) FIRST PUBLISHED IN 1687.

_____

64. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

URANIUM'S RADIOACTIVE PROPERTIES (TO DISCOVER) ACCIDENTALLY NOT BY DESIGN.

_____

65. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

NIKOLA TESLA (TO BORN) IN CROATIA BUT EMIGRATED TO THE USA in 1884 AND BECAME A US CITIZEN.

_____

66. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

SOUND WAVES (TO TRAVEL) THROUGH THE AIR AT A SPEED OF ABOUT 1,100 FT. PER SECOND.

_____

67. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

DISTANCE USUALLY (TO MEASURE) IN MILLIMETRES CENTIMETRES METRES AND KILOMETRES.

_____

68. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

THE RELATIVE MASSES (TO MEASURE) WITH A SPECIAL APPARATUS CALLED A MASS SPECTROGRAPH.

_____

69. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

THE USES OF RADAR (TO GIVE) GREAT RELIABILITY TO SEA AND AIR TRAVEL.

_____

70. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

RUTHERFORD'S DISCOVERIES (TO MAKE) A GREAT IMPRESSION UPON THE SCIENTISTS ALL OVER THE WORLD.

_____

71. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

THE WORD NUCLEUS (TO COME) FROM THE LATIN WORD MEANING LITTLE NUT.

_____

72. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

NEW IDEAS IN PHYSICS OFTEN (TO EXPLAIN) THE FUNDAMENTAL MECHANISMS OF OTHER SCIENCES.

_____

73. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

PETER (TO SEND) A LETTER TO HIS FRIEND TOMORROW?

_____

74. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

OVER THE LAST TWO MILLENNIA PHYSICS (TO BE) A PART OF NATURAL PHILOSOPHY.

_____

75. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

SHE (TO WORK) IN THE LIBRARY AT THE MOMENT.

_____

76. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

She (to be able to) help you tomorrow.

_____

77. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

My grandfather (can) speak six languages many years ago.

_____

78. Open the brackets putting the verbs into the correct tense-form(all letters should be lowercased)

I didn't (need) to get up early, so I didn't.

_____

79. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

When the reporter came to Tashkent after the earthquake many schools and other public facilities (to rebuild) there.

_____

80. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

The train (to leave)by the time we arrive at the station.

_____

81. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

By the year 2050, many actresses who are famous today (to forget).

_____

82. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

If the weather were fine, they (to go) out of town.

_____

83. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

We'll just go to another restaurant if this one (to be) fully occupied.

_____

84. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

If I (to take)a taxi, I would have been there in time.

_____

85. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

The wind (to use) as a power source 1300 years ago in Persia.

_____

86. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

A remarkable aspect of classical mechanics known as chaos (to discover) in the 20th century.

_____

87. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

They did it very well after they (to practice).

_____

88. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

Before she (to run) the computer program. She had checked it out with her supervisor.

_____

89. *Впишіть дієслово, що в дужках, у правильній часовій формі (всі літери малі)*

Carol always gets good grades; she must (to study) a lot.

_____

Тема :: Прийменник

90. *Виберіть відповідний прийменник*

Janie doesn't approve _____ using video games in the classroom.

- of
- about
- in
- on

91. *Виберіть відповідний прийменник*

They believe _____ the essential goodness of human nature.

- on
- in
- about
- for

92. *Виберіть відповідний прийменник*

I asked the waiter _____ some extra napkins.

- to
- for
- from
- in

93. *Виберіть відповідний прийменник*

Congratulations _____ winning the scholarship!

- from
- on
- of
- in

94. *Виберіть відповідний прийменник*

The success of the project depends ____ his work.

- on
- of
- in
- from

95. *Виберіть відповідний прийменник*

The girl at the party was so beautiful that I couldn't stop staring _____ her.

- at
- to
- with
- on

96. *Виберіть відповідний прийменник*

I've been trying to get in touch with Allie, but she hasn't responded _____ any of my e-mails.

- with
- for
- to
- on

97. *Виберіть відповідний прийменник*

The rules of this game are complicated, but I can explain them _____ you.

- at
- to
- in
- of

98. *Виберіть відповідний прийменник*

The teenagers apologized _____ playing loud music at 3 AM.

- to
- of
- for
- at

99. *Виберіть відповідний прийменник*

What you did was wrong. You should definitely apologize ____ him.

- for
- to
- from
- of

100. *Виберіть відповідний прийменник*

Emilio dreams _____ owning a sports car someday.

- of
- with
- for
- to

101. Виберіть відповідний прийменник

My husband disagrees _____ me about the best way to discipline our children.

- of
- from
- with
- about

102. *Виберіть відповідний прийменник*

It took me a long time to recover ____ the surgery.

- of
- from
- for
- with

103. *Виберіть відповідний прийменник*

We have software to protect our computer ____ viruses.

- for
- from

- of
- about

104. *Виберіть відповідний прийменник*

Mary's such a negative person. She's always complaining _____ something in her life.

- with
- about
- for
- in

105. *Виберіть відповідний прийменник*

After Joanna discovered she was adopted, she began searching ____ her biological parents.

- for
- on
- to
- about

106. *Виберіть відповідний прийменник*

I borrowed these books _____ the library.

- to
- from
- of
- on

107. *Виберіть відповідний прийменник*

Stay ___ the dog. It bites.

- away from
- to
- onto
- under

108. *Виберіть відповідний прийменник*

Quick! Get the ball before it rolls ___ the hill.

- at
- down
- by
- in

109. *Виберіть відповідний прийменник*

What do you like to do ___ the weekend?

- in
- on
- to
- up

110. *Виберіть відповідний прийменник*

I haven't seen her ___ June.

- since
- on
- for
- in

111. *Виберіть відповідний прийменник*

We will next meet ___ the middle of next month.

- in
- to
- on
- of

112. *Виберіть відповідний прийменник*

Her birthday is __ 6th June.

- at
- on
- in
- for

113. *Виберіть відповідний прийменник*

Do you come ___ London?

- on
- of
- from
- in

114. *Виберіть відповідний прийменник*

We sailed the boat ___ the river.

- on
- under
- for
- in

115. *Виберіть відповідний прийменник*

My best friend lives _____ Boretz Road.

- in
- at
- on
- of

116. *Виберіть відповідний прийменник*

I'll be ready to leave ____ about twenty minutes.

- on
- in
- at
- of

117. *Виберіть відповідний прийменник*

Since he met his new girlfriend, Juan never seems to be _____ home.

- on
- at
- in
- for

118. *Виберіть відповідний прийменник*

The child responded to his mother's demands _____ throwing a tantrum.

- with
- by
- from
- in

119. *Виберіть відповідний прийменник*

I think she spent the entire afternoon _____ the phone.

- in
- on
- at
- of

120. *Виберіть відповідний прийменник*

I will wait _____ 6:30, but then I'm going home.

- from
- until
- at
- in

121. *Виберіть відповідний прийменник*

The police caught the thief _____ the corner of Cascade and Plum Streets.

- in
- at
- from
- on

122. *Виберіть відповідний прийменник*

My fingers were injured so my sister had to write the note _____ me.

- with
- for
- to
- at

123. *Виберіть відповідний прийменник*

I am not interested _____ buying a new car now.

- to
- in

- for
- of

124. *Виберіть відповідний прийменник*

What are the main ingredients _____ this casserole?

- about
- of
- to
- from

125. *Виберіть відповідний прийменник*

My best friend, John, is named _____ his great-grandfather.

- to
- after
- about
- at

126. *Виберіть відповідний прийменник*

My parents have been married _____ forty-nine years.

- since
- for
- until
- at

127. *Виберіть відповідний прийменник*

He usually travels to Philadelphia _____ train.

- at
- by
- with
- on

128. *Виберіть відповідний прийменник*

You frequently see this kind of violence ____ television.

- with
- on
- in
- by

129. *Виберіть відповідний прийменник*

I told Mom we'd be home _____ an hour or so.

- to
- in
- at
- on

130. *Виберіть відповідний прийменник*

I was visiting my best friend _____ the hospital.

- of
- at
- in
- for

131. *Виберіть відповідний прийменник*

The professor _____ South Africa amazed the American students with her stories.

- of
- from
- in
- for

132. *Виберіть відповідний прийменник*

We may play football. It depends_____ the weather.

- at
- on
- about
- from

133. *Виберіть відповідний прийменник*

We want to see a big increase _____ productivity.

- on
- in
- from
- about

134. *Виберіть відповідний прийменник*

Excuse me, sir. You haven't paid _____ your drink.

- at
- for
- on
- by

135. *Виберіть відповідний прийменник*

His wife is suffering _____hepatitis.

- in
- from
- on
- at

136. *Виберіть відповідний прийменник*

I hate the thought _____going back to work.

- in
- of
- on
- by

137. *Виберіть відповідний прийменник*

Who is responsible _____the shopping this week?

- about
- for
- in
- of

138. *Виберіть відповідний прийменник*

You remind me _____ a boy I was at school with.

- by
- of
- on
- at

139. *Виберіть відповідний прийменник*

The noise from upstairs prevented me _____ sleeping.

- at
- from
- by
- on

140. *Виберіть відповідний прийменник*

She insisted _____ paying for the drinks.

- by
- on
- with
- at

141. *Виберіть відповідний прийменник*

I am having difficulty _____ my visa processing.

- in
- with
- at
- for

Тема :: Пропущений фрагмент

142. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

TODAY WE SEE A WORLD IN WHICH THE SOCIAL, _____. _____ HAS INCREASED MAN'S KNOWLEDGE OF NATURE SO GREATLY THAT NOW IT AFFECTS ALL SIDES OF HUMAN LIFE. _____ WE CAN CLEARLY SEE THAT CIVILIZED MAN, THOUGH HE HAS MADE MANY BAD MISTAKES, IS ONLY "A CHILD". WE CAN SEE THAT OUR

MODERN WORLD IS VERY YOUNG _____. MAN HAS ALREADY LEARNED TO APPLY SCIENTIFIC METHODS NOT ONLY IN SCIENCE AND TECHNICS _____.

1. industrial and even political order has been greatly influenced by science

2. the rapid development of science during the past hundred years

3. if we think of man's history compressed into one century

4. and the possibilities for material and social development are very great indeed

5. but in his social life too

6. Newton was soon sent back to King's School to finish his basic education

7. it is began in the early 20th century with the work of Max Planck in quantum theory and Albert Einstein's theory of relativity

143. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

LET US SEE WHAT MAN HAS ACHIEVED WITH THE HELP OF SCIENCE _____. THE FIRST SOURCE OF ENERGY WHICH MAN MADE SERVE HIM _____. BUT MAN WOULD NOT AND DID NOT STOP AT ELECTRICITY _____. AND WE MAY BE SURE THAT THE DISCOVERY OF ATOMIC ENERGY IS JUST AN EPISODE _____. WE KNOW THAT MAN WILL BE RECOLLECTING WITH A SMILE THE TIME WHEN THE ENERGY OF ATOMIC FISSION _____.

1. both of these theories came about due to inaccuracies in classical mechanics in certain situations

2. English physicist and mathematician Sir Isaac Newton, most famous for his law of gravitation, was instrumental in the scientific revolution of the 17th century

3. he discovered another source of energy, many times more powerful — the atomic energy

4. was considered to be so dangerous and difficult to deal with

5. in the history of human progress

6. was the energy of fire

7. what were his first steps, what he has now and what he may achieve in future

144. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

A NUCLEAR-POWERED PLANE WOULD BE CAPABLE OF MAKING SEVERAL TRIPS ROUND THE WORLD _____. _____ HOW TO PROTECT THE CREW FROM RADIATION OF THE NUCLEAR REACTOR. THE KIND OF MATERIAL NEEDED FOR SUCH A PROTECTION _____ WOULD WEIGH ABOUT 23 TONS. WITH THE WEIGHT OF THE NUCLEAR REACTOR AND THE WEIGHT OF THE PROTECTION SHIELD _____. _____ HAVE TO FIND MATERIALS THAT CAN WITHSTAND THE HEAT GENERATED BY A NUCLEAR REACTOR.

1. the chief problem is

2. without having to land or refuel

3. it would weigh over 226 tons

4. lead, steel, concrete

5. engineers and scientists

6. what are the fundamental laws of nature?

7. which could not be resolved with the constant speed predicted by Maxwell's equations of electromagnetism

145. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

MODERN SCIENTIFIC OBSERVATIONS AND CALCULATIONS _____. ONE SUCH CLOCK INVENTED BY AN AMERICAN SCIENTIST PROFESSOR JERROLD R. ZACHARIAS IS SO ACCURATE _____. _____ WHICH WHEN HEATED TO THE TEMPERATURE OF BOILING WATER, VIBRATES 9,200,000,000 TIMES A SECOND. SCIENTISTS PROKHOROV AND BASOV HAVE DEVELOPED A CLOCK, OPERATING WITH AN AMMONIA MOLECULE _____. THE NITROGEN ATOM IN AMMONIA, FOR EXAMPLE _____.

1. the heart of this "Atomichron" is a caesium atom

2.that it will lose no more than a second in 3,000 years

3. demand very accurate timekeeping

4. vibrates 24 milliard times a second

5. which is even more accurate than "Atomichron"

6. it is thought that the laws of physics do not change from place to place

7. this discrepancy was corrected by Einstein's theory of special relativity

146. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

_____ ARE BEING TREATED WITH RADIO-COBALT WHICH IN MANY WAYS IS BETTER THAN X-RAY TREATMENT. THE RADIOISOTOPE CAN BE GIVEN IN SMALLER DOSES, AND CAN BE CONCENTRATED MORE ACCURATELY ON THE CANCEROUS CELLS, _____ IT CANNOT CAUSE BURNS AND HAS NO HARMFUL RADIATION EFFECT. FEW YEARS AGO IT WAS NECESSARY TO WAIT SEVERAL MONTHS _____ FOR THE ACCURATE DIAGNOSIS THAT MADE TREATMENT POSSIBLE. WHEN THIS ISOTOPE IS PUMPED INTO THE INJURED BONE _____. _____ THE SURGEON GETS THE INFORMATION ABOUT THE CONDITION OF THE INJURED BONE.

1. every year many thousands cancer patients

2. and sometimes even a year

3. in addition

4. physics is the study of dynamics

5. by measuring the amount of radio-activity left in the bone

6. it keeps its radio-activity if the bone is "dead"

7. which replaced classical mechanics for fast-moving bodies and allowed for a constant speed of light

147. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

THE PROBLEM OF CONVERTING HEAT DIRECTLY INTO ELECTRICITY HAS ALWAYS ATTRACTED ATTENTION OF SCIENTISTS. _____ IS BY MEANS OF GENERATORS THAT GET THEIR POWER FROM STEAM OR WATER TURBINES. _____ IS SMALL IN SIZE AND CAN PRODUCE ONLY A SMALL AMOUNT OF ELECTRICITY. THE AMOUNT OF ENERGY WHICH A RADIO-ACTIVE MATERIAL CAN RELEASE _____ (A HALF-LIFE IS THE AMOUNT OF TIME IT TAKES FOR HALF THE ENERGY OF A RADIO-ACTIVE MATERIAL TO BE RELEASED). _____ WILL GIVE MORE ELECTRICITY FOR A LONGER TIME. THE GREAT AMOUNT OF RADIO-ACTIVE MATERIAL FROM NUCLEAR REACTORS, CONSIDERED AT PRESENT AS "WASTES" _____.

1. is calculated in terms of half-lives

2. now the generator

3. the usual way to produce electricity

4. the radioisotopes which have a longer half-life

5. black body radiation provided another problem for classical physics

6. the other electronic device is placed into the periscope

7. could be used as a source of atomic power for this generator

148. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

AN ELECTRONIC COMPUTER IS A MACHINE THAT CAN PERFORM MATHEMATICAL WORK AND _____. A COMPUTER, FOR EXAMPLE, CAN ADD OR SUBTRACT 9,000 TIMES A SECOND, MULTIPLY 1,000 TIMES A SECOND _____. THE HEART OF THE ELECTRONIC COMPUTER LIES IN ITS VACUUM TUBES OR TRANSISTORS. IN ORDER TO WORK, A COMPUTER MUST BE GIVEN INSTRUCTIONS _____. _____ SUCH AS DIRECTING MANUFACTURE OF TOOLS AND PARTS, GUIDING AEROPLANE FLIGHTS, SOLVING MATHEMATICAL PROBLEMS, KEEPING BANK ACCOUNTS — EVEN PLAYING CHESS. IF THERE WERE NO COMPUTERS TO MAKE THE NECESSARY MATHEMATICAL CALCULATIONS _____.

1. computers can be designed for specialized purposes

2. divide 500 times a second

3. this is called "programming"

4. can store and select information that has been fed into it

5. it would have taken years to complete some scientific research work

6. the advantages of such an aeroplane are theoretically attractive

7. which was corrected when Planck proposed that the excitation of material oscillators is possible only in discrete steps proportional to their frequency

149. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

25,000 MAGAZINES DEVOTED ONLY TO PHYSICAL SCIENCES ARE PUBLISHED EVERY YEAR.IF A PHYSICIST READS AT A SPEED OF TWO WORDS PER SECOND 12 HOURS A DAY FOR FIFTY YEARS _____ THAT WILL BE MUCH LESS THAN HALF OF THE MAGAZINES ON PHYSICS PUBLISHED EVERY YEAR.

SCIENTISTS OFTEN SAY THAT SOMETIMES _____ THAN TO FIND OUT WHETHER IT HAS ALREADY BEEN MADE, AND WHERE IT HAS BEEN DESCRIBED. THERE ARE SOME SPECIAL ORGANIZATIONS _____ WHICH ARE ENGAGED IN MAKING ANNOTATIONS OF AT LEAST THE MOST IMPORTANT ARTICLES, BUT THE TASK IS BECOMING MORE AND MORE HOPELESS.THE ONLY PRACTICAL SOLUTION OF THE PROBLEM IS _____ IN ELECTRONIC COMPUTERS. WE CAN IMAGINE MANY SUCH MACHINES _____.

1. each storing all the information on a definite scientific subject

2. it is now easier to make a new scientific discovery

3. such as The Institute of Technical and Scientific Information

4. the storing of scientific information

5. he will be able to read about 1,500 million words

6. man has probably lived on earth more than 500,000 years

7. along with the photoelectric effect and a complete theory predicting discrete eenergy levls of electron orbitals

150. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

THE REMARKABLE UNDERWATER VOYAGES OF ATOMIC SUBMARINES WERE ALL MADE POSSIBLE BY TWO ELECTRONIC DEVICES _____. ONE OF THESE DEVICES RECORDS EVERY MOTION OF THE SHIP _____ CONNECTED WITH IT, AUTOMATICALLY COMPUTES THE EXACT DISTANCE THAT THE SUBMARINE HAS TRAVELLED. THE BASIC INSTRUMENT USED IN THIS DEVICE IS AN ACCELEROMETER. _____ ONE FOR NORTH-SOUTH MOVEMENT AND ONE FOR EAST-WEST MOVEMENT. BY USING TWO ACCELEROMETERS INSTEAD OF ONE IT IS POSSIBLE TO CALCULATE NOT ONLY THE EXACT DISTANCE THAT THE SUBMARINE HAS TRAVELLED _____. THE OTHER ELECTRONIC DEVICE IS PLACED INTO THE PERISCOPE. SUCH DEVICE MAKES IT POSSIBLE TO SEE THE SUN _____.

1. we shall begin the review with the role that energy played in the history of man

2. there are two accelerometers which are used in the device

3. and an electronic computer

4. but also its latitude and longitude

5. the moon or a star without going up to the surface

6. which are connected in their work with electronic computing machines

7. led to the theory of quantum mechanics taking over from classical physics at very small scales

151. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

PHYSICS IS THE STUDY OF DYNAMICS . DYNAMICS IS THE DESCRIPTION OF THE ACTUAL FORCES OF NATURE THAT, WE BELIEVE _____. A FORCE IS CONSIDERED TO BE THE CAUSAL AGENT THAT PRODUCES THE EFFECT OF ACCELERATION IN ANY MASSIVE OBJECT,_____. NEWTON WAS NOT THE FIRST PERSON TO ATTEMPT TO DESCRIBE THE UNDERLYING NATURE OF CAUSALITY. _____ INCLUDING MY FAVORITE 'DUMB PHILOSOPHER, ARISTOTLE, HAD ATTEMPTED THIS. IN PHYSICS A LAW IS THE EQUIVALENT OF A POSTULATED AXIOM IN MATHEMATICS. THAT IS, A PHYSICAL LAW IS _____ AN ASSUMPTION ABOUT HOW NATURE OPERATES THAT NOT FORMALLY PROVABLE BY ANY MEANS, INCLUDING EXPERIENCE _____.

1. the complete range of electromagnetic waves on a continuous distribution from a very low range of frequencies and energy levels

2. altering its dynamic state of motion

3. many, many others

4. within the theory

5. like an axiom

6. this reactor supplies enough energy to light 300 cottages or heat 30 cottages

7. underlie the causal structure of the Universe and are responsible for its evolution in time

152. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

_____ LOGIC, AND EXPERIMENTAL EVIDENCE TO TELL BETWEEN WHAT IS SCIENTIFICALLY CORRECT AND WHAT IS NOT. UNLESS A DISCOVERY IS REPEATEDLY ESTABLISHED IN DIFFERENT LABORATORIES AT DIFFERENT TIMES BY DIFFERENT PEOPLE, OR THE SAME THEORETICAL RESULT IS DERIVED BY CLEAR USE OF ESTABLISHED RULES _____ IT IS THOUGHT THAT THE LAWS OF PHYSICS DO NOT CHANGE FROM PLACE TO PLACE. THIS IS WHY EXPERIMENTS CARRIED OUT IN DIFFERENT COUNTRIES BY DIFFERENT SCIENTISTS – OF ANY RELIGION OR RACE _____. EVIDENCE _____ STRONGLY INDICATES THAT THE LAWS OPERATING AT THAT TIME WERE NO DIFFERENT THAN THOSE TODAY. THE SPECTRA OF DIFFERENT ELEMENTS THEN AND NOW ARE IMPOSSIBLE TO TELL APART _____.

1. the scientific method accepts only reason

2. we do not accept it as a scientific discovery

3. have always led to the same results if the experiments have been done honestly and correctly

4. even though physicists have looked very carefully

5. contained in the light that left distant stars billions of years ago

6. scientists Prokhorov and Basov have developed a clock, operating with an ammonia molecule, which is even more accurate than "Atomichron"

7. with a correspondingly long wavelength

153. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

BUT, JUST WHAT IS PHYSICS? IT DERIVES ITS PRESENT NAME FROM THE GREEK WORD FOR NATURE _____. IT SEEKS ANSWERS TO SUCH FUNDAMENTAL QUESTIONS AS _____. _____ WE OFTEN FIND ARTICLES THAT ATTEMPT TO EXPLAIN TO A LAY PUBLIC A VARIETY OF TOPICS RELATED TO PHYSICS. THESE MIGHT BE SOPHISTICATED EXPERIMENTS ON FUNDAMENTAL PARTICLES OF MATTER; SPACE PROBES AND THEIR MISSIONS; DISCOVERIES OF ASTRONOMY IN VERY REMOTE REGIONS OF SPACE; EXOTIC NEW THEORIES ON THE NATURE OF MATTER _____. _____ GOVERNMENT SUPPORT OF VERY EXPENSIVE SCIENTIFIC VENTURES HAS BECOME AN ISSUE OF PUBLIC INTEREST.

1. it was previously called natural philosophy

2. in our daily newspaper or weekly magazine

3. What kind of world do we live in? How does it work? What are the fundamental laws of nature?

4. to a very high range of frequencies and energy levels

5. with so many programs competing for federal funds

6. electronic circuits work a thousand times more rapidly than nerve cells in the human brain

7. or the universe as a whole

154. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

_____ ITALY, ON SEPTEMBER, 29, 1901, THE THIRD CHILD OF ALBERTO AND IDA DE GATTIS FERMI. DURING HIS TEENS, HE AND FRIENDS CONDUCTED PHYSICS EXPERIMENTS FOR FUN _____. IN 1918, FERMI WON A SCHOLARSHIP TO THE PRESTIGIOUS SCUOLA NORMALE SUPERIORE UNIVERSITY IN PISA, ITALY. HIS ENTRY ESSAY WAS SO IMPRESSIVE THAT FERMI WAS QUICKLY ELEVATED TO THE DOCTORAL PROGRAM _____. IN 1928, HE MARRIED LAURA CAPON _____. IN 1934 _____ DISCOVERING THAT NUCLEAR TRANSFORMATION COULD OCCUR IN NEARLY EVERY ELEMENT.

1. and he graduated with honors in 1922

2. including testing the density of Rome's water supply

3. Enrico Fermi was born in Rome

4. the daughter of a respected Jewish family in Rome

5. mankind has accumulated more than 50 million printed- works

6. Fermi began his most important work with the atom

7. with a correspondingly short wavelength

155. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

_____ WAS ONE OF THE FOUNDING FATHERS OF MODERN PHYSICS AND IS BEST KNOWN FOR BEING A PIONEER IN RADIOACTIVE STUDIES. HIS FATHER, A PHYSICIAN, TRAINED HIM IN MATH AND SCIENCE FROM A YOUNG AGE _____ WHERE HE EARNED HIS DEGREE IN 1878. HE MARRIED A FELLOW SCIENTIST _____. SHE BECAME KNOWN AS MARIE CURIE AFTER THEIR MARRIAGE. PIERRE CURIE'S TWO MAIN SCIENTIFIC PARTNERS THROUGHOUT HIS CAREER WERE _____. TOGETHER WITH JACQUES _____ THROUGH WHICH HE DISCOVERED PIEZOELECTRIC EFFECTS.

1. French physicist Pierre Curie

2. Curie then entered the Faculty of Sciences at the Sorbonne

3. Curie explored crystallography

4. his wife, Marie, and his brother, Jacques

5. Maria Skłodowska, the same year

6. Enrico Fermi's intense interest in physics was said to be the result of a family tragedy

7. included on the electromagnetic spectrum are long wave and short wave radio; microwaves; infrared, visible, and ultraviolet light and x rays

156. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

ENGLISH PHYSICIST AND MATHEMATICIAN SIR ISAAC NEWTON _____ WAS INSTRUMENTAL IN THE SCIENTIFIC REVOLUTION OF THE 17TH CENTURY. ISAAC NEWTON WAS BORN ON JANUARY 4, 1643, IN WOOLSTHORPE, LINCOLNSHIRE, ENGLAND. _____ NEWTON'S BIRTH DATE IS SOMETIMES DISPLAYED AS DECEMBER 25, 1642. THE ROYAL SOCIETY ASKED FOR A DEMONSTRATION OF HIS REFLECTING TELESCOPE IN 1671, AND THE ORGANIZATION'S INTEREST ENCOURAGED NEWTON _____. LEGEND HAS IT THAT, AT THIS TIME, NEWTON EXPERIENCED HIS FAMOUS INSPIRATION OF GRAVITY WITH THE FALLING APPLE. _____ NEWTON WAS SITTING UNDER AN APPLE TREE WHEN A FRUIT FELL AND HIT HIM ON THE HEAD, INSPIRING HIM TO SUDDENLY COME UP WITH THE THEORY OF GRAVITY. WHILE THERE IS NO EVIDENCE THAT THE APPLE ACTUALLY HIT NEWTON ON THE HEAD _____ LEADING HIM TO WONDER WHY IT FELL STRAIGHT DOWN AND NOT AT AN ANGLE.

1. most famous for his law of gravitation

2. using the "old" Julian calendar

3. Galileo's work showed that

4. according to this common myth

5. he did see an apple fall from a tree

6. he married a fellow scientist, Maria Skłodowska, the same year

7. to publish his notes on light, optics and color in 1672

157. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

ISAAC NEWTON WAS THE ONLY SON OF A PROSPEROUS LOCAL FARMER, ALSO NAMED ISAAC NEWTON, WHO DIED THREE MONTHS BEFORE HE WAS BORN. A PREMATURE BABY BORN TINY AND WEAK _____. WHEN HE WAS 3 YEARS OLD, HIS MOTHER, HANNAH AYSCOUGH NEWTON, REMARRIED A WELL-TO-DO MINISTER, BARNABAS SMITH, AND WENT TO LIVE WITH HIM _____. _____, A TOWN IN LINCOLNSHIRE, WHERE HE LODGED WITH A LOCAL APOTHECARY AND WAS INTRODUCED TO THE FASCINATING WORLD OF CHEMISTRY. _____ NEWTON WAS TAUGHT THE STANDARD CURRICULUM BUT WAS FASCINATED WITH THE MORE ADVANCED SCIENCE. THOUGH NEWTON GRADUATED WITHOUT HONORS OR DISTINCTIONS _____.

1. during his first three years at Cambridge

2. leaving young Newton with his maternal grandmother

3. Newton was enrolled at the King's School in Grantham

4. Newton was not expected to survive

5. his efforts won him the title of scholar and four years of financial support for future education

6. the electronic computer automatically computes the altitude of the sun, the moon or a star in degrees and minutes and calculates the exact location of the submarine

7. if a body is already moving with some velocity

158. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

WHILE NATURE DOES NOT RESTRICT THE CONVERSION OF WORK INTO HEAT, _____. CONSIDER WHAT HAPPENS IN A STEAM ENGINE _____, THE EXPANSION OF HOT STEAM UNDER PRESSURE CAUSES THE MOTION OF A PISTON, WHICH IN TURN CAUSES THE WHEELS OF A LOCOMOTIVE TO TURN. THE HEAT IN THE EXHAUST STILL CONSTITUTES ENERGY, _____. IT TOO CAN BE CONVERTED INTO WORK, BUT ONLY IF WE CAN MAKE IT DROP TO AN EVEN LOWER TEMPERATURE. THUS, ALTHOUGH ENERGY IS CONSERVED IN AN ISOLATED SYSTEM, THE AMOUNT OF "FREE ENERGY", I.E., THE ENERGY AVAILABLE TO DO WORK, _____. IF THE UNIVERSE AS A WHOLE IS AN ISOLATED SYSTEM, _____.

1. it does impose severe restrictions on the conversion of heat into work

2. but a degraded form of energy

3. inside a cylinder

4. the body will start accelerating at a constant rate in the same direction

5. this law predicts an inevitable doom

6. and a constant force is applied to it in the direction of its motion

7. keeps on decreasing

159. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

IN ANCIENT TIMES, IT WAS KNOWN THAT, _____, AMBER COULD ATTRACT FEATHERS AND OTHER LIGHT OBJECTS. IN 1600, SIR WILLIAM GILBERT (1540-1603), A CONTEMPORARY OF KEPLER AND GALILEO AND PHYSICIAN TO QUEEN ELIZABETH I, _____ WHICH MADE HIM FAMOUS THROUGHOUT EUROPE. _____, WHICH EXPLAINS WHY THE NEEDLE OF A MAGNETIC COMPASS ALWAYS POINTS TOWARD THE NORTH. HE ALSO SHOWED THAT MANY COMMON MATERIALS, WHEN RUBBED, _____. FROM THE GREEK WORD FOR AMBER, _____, FROM WHICH THE WORD ELECTRICITY WAS LATER DERIVED.

1. in the early 1800s, the Industrial Revolution

2. published his book "On the Great Magnet of the Earth"

3. behaved like amber

4. he correctly concluded that the Earth acts as a huge magnet

5. he called such materials "electrons"

6. after being rubbed

7. which originated in Britain in the mid-1700s, was in full swing

160. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

DYNAMICS IS THE DESCRIPTION OF THE ACTUAL FORCES OF NATURE THAT, WE BELIEVE _____. WE ARE ABOUT TO EMBARK UPON THE INTENSIVE STUDY OF A SIMPLE DESCRIPTION OF NATURE THAT INTRODUCES THE CONCEPT OF A FORCE, _____. A FORCE IS CONSIDERED TO BE THE CAUSAL AGENT THAT PRODUCES THE EFFECT OF ACCELERATION IN ANY MASSIVE OBJECT, _____. INSTEAD NEWTON FORMULATED IT _____ THAT (HE HOPED) PRECISELY DESCRIBED THE REGULARITIES OF MOTION IN NATURE. THAT IS, A PHYSICAL LAW IS LIKE AN AXIOM AN ASSUMPTION ABOUT HOW NATURE OPERATES THAT NOT FORMALLY PROVABLE BY ANY MEANS, INCLUDING EXPERIENCE _____.

1. underlie the causal structure of the Universe and are responsible for its evolution in time

2. due to Isaac Newton

3. altering its dynamic state of motion

4. as a mathematical theory and proposed a set of laws

5. within the theory

6. this reactor supplies enough energy to light 300 cottages or heat 30 cottages

7. the complete range of electromagnetic waves on a continuous distribution from a very low range of frequencies and energy levels

161. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

SCIENCE WORKS ACCORDING TO THE SCIENTIFIC METHOD. _____ LOGIC, AND EXPERIMENTAL EVIDENCE TO TELL BETWEEN WHAT IS SCIENTIFICALLY CORRECT AND WHAT IS NOT. _____ THEY TEST, AND KEEP TESTING UNTIL SATISFIED. UNLESS A DISCOVERY IS REPEATEDLY ESTABLISHED IN DIFFERENT LABORATORIES AT DIFFERENT TIMES BY DIFFERENT PEOPLE, OR THE SAME THEORETICAL RESULT IS DERIVED BY CLEAR USE OF ESTABLISHED RULES _____. THIS IS WHY EXPERIMENTS CARRIED OUT IN DIFFERENT COUNTRIES BY DIFFERENT SCIENTISTS – OF ANY RELIGION OR RACE _____. THE SPECTRA OF DIFFERENT ELEMENTS THEN AND NOW ARE IMPOSSIBLE TO TELL APART _____.

1. scientists do not simply believe

2. the scientific method accepts only reason

3. we do not accept it as a scientific discovery

4. scientists Prokhorov and Basov have developed a clock, operating with an ammonia molecule, which is even more accurate than "Atomichron"

5. with a correspondingly long wavelength

6. have always led to the same results if the experiments have been done honestly and correctly

7. even though physicists have looked very carefully

162. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

BUT, JUST WHAT IS PHYSICS? IT DERIVES ITS PRESENT NAME FROM THE GREEK WORD FOR NATURE _____. _____ AS THE SCIENCE THAT DEALS WITH MATTER, ENERGY, MOTION AND FORCE. IT SEEKS ANSWERS TO SUCH FUNDAMENTAL QUESTIONS AS _____. _____ARE AMONG THE MANY APPLICATIONS OF PHYSICS THAT ARE SO PERVASIVE IN OUR TIMES. _____ GOVERNMENT SUPPORT OF VERY EXPENSIVE SCIENTIFIC VENTURES HAS BECOME AN ISSUE OF PUBLIC INTEREST.

1. it was previously called natural philosophy

2. transistors, microchips, lasers, computers, telecommunications, nuclear power and space travel

3. What kind of world do we live in? How does it work? What are the fundamental laws of nature?

4. physics can be defined

5. with so many programs competing for federal funds

6. electronic circuits work a thousand times more rapidly than nerve cells in the human brain

7. to a very high range of frequencies and energy levels

163. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

_____ WAS ONE OF THE FOUNDING FATHERS OF MODERN PHYSICS AND IS BEST KNOWN FOR BEING A PIONEER IN RADIOACTIVE STUDIES. PIERRE CURIE WAS BORN IN PARIS, FRANCE, ON MAY 15, 1859. HIS FATHER, A PHYSICIAN, TRAINED HIM IN MATH AND SCIENCE FROM A YOUNG AGE _____ WHERE HE EARNED HIS DEGREE IN 1878. LACKING THE MONEY TO CONTINUE ON IN SCHOOL, CURIE WORKED AS A LABORATORY INSTRUCTOR UNTIL HE WAS ABLE TO RETURN TO HIS RESEARCH. IN 1895, HE OBTAINED HIS GRADUATE DEGREE AND WAS APPOINTED PROFESSOR OF PHYSICS. HE MARRIED A FELLOW SCIENTIST _____. SHE BECAME KNOWN AS MARIE CURIE AFTER THEIR MARRIAGE. PIERRE CURIE'S TWO MAIN SCIENTIFIC PARTNERS THROUGHOUT HIS CAREER WERE _____. TOGETHER WITH JACQUES CURIE EXPLORED CRYSTALLOGRAPHY THROUGH WHICH HE DISCOVERED PIEZOELECTRIC EFFECTS. CURIE SHOWED THAT THE MAGNETIC PROPERTIES OF A GIVEN SUBSTANCE CHANGE AT A SPECIFIC TEMPERATURE _____.

1. French physicist Pierre Curie

2. Curie then entered the Faculty of Sciences at the Sorbonne

3. Maria Skłodowska, the same year

4. a level now known as the Curie point

5. his wife, Marie, and his brother, Jacques

6. Enrico Fermi's intense interest in physics was said to be the result of a family tragedy

7. included on the electromagnetic spectrum are long wave and short wave radio; microwaves; infrared, visible, and ultraviolet light and x rays

164. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

ENGLISH PHYSICIST AND MATHEMATICIAN SIR ISAAC NEWTON _____ WAS INSTRUMENTAL IN THE SCIENTIFIC REVOLUTION OF THE 17TH CENTURY. ISAAC NEWTON WAS BORN ON JANUARY 4, 1643, IN WOOLSTHORPE, LINCOLNSHIRE, ENGLAND. _____ NEWTON'S BIRTH DATE IS SOMETIMES DISPLAYED AS DECEMBER 25, 1642. AS A PROFESSOR AT CAMBRIDGE, _____ AND CHOSE OPTICS AS HIS INITIAL TOPIC. THE ROYAL SOCIETY ASKED FOR A DEMONSTRATION OF HIS REFLECTING TELESCOPE IN 1671, AND THE ORGANIZATION'S INTEREST ENCOURAGED NEWTON _____. LEGEND HAS IT THAT, AT THIS TIME, NEWTON EXPERIENCED HIS FAMOUS INSPIRATION OF GRAVITY WITH THE FALLING APPLE. _____ NEWTON WAS SITTING UNDER AN APPLE TREE WHEN A FRUIT FELL AND HIT HIM ON THE HEAD, INSPIRING HIM TO SUDDENLY COME UP WITH THE THEORY OF GRAVITY.

1. most famous for his law of gravitation

2. according to this common myth

3. Newton was required to deliver an annual course of lectures

4. to publish his notes on light, optics and color in 1672

5. using the "old" Julian calendar

6. he married a fellow scientist, Maria Skłodowska, the same year

7. Galileo's work showed that

165. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

_____, ALSO NAMED ISAAC NEWTON, WHO DIED THREE MONTHS BEFORE HE WAS BORN. WHEN HE WAS 3 YEARS OLD, HIS MOTHER, HANNAH AYSCOUGH NEWTON, REMARRIED A WELL-TO-DO MINISTER, BARNABAS SMITH, AND WENT TO LIVE WITH HIM _____. _____, A TOWN IN LINCOLNSHIRE, WHERE HE LODGED WITH A LOCAL APOTHECARY AND WAS INTRODUCED TO THE FASCINATING WORLD OF CHEMISTRY. WHEN NEWTON ARRIVED AT CAMBRIDGE, THE SCIENTIFIC REVOLUTION OF THE 17TH CENTURY WAS ALREADY IN FULL FORCE. _____NEWTON WAS TAUGHT THE STANDARD CURRICULUM BUT WAS FASCINATED WITH THE MORE ADVANCED SCIENCE. IT WAS DURING THIS TIME THAT NEWTON KEPT A SECOND SET OF NOTES, _____ ("CERTAIN PHILOSOPHICAL QUESTIONS").

1. leaving young Newton with his maternal grandmother

2. Isaac Newton was the only son of a prosperous local farmer

3. during his first three years at Cambridge

4. Newton was enrolled at the King's School in Grantham

5. if a body is already moving with some velocity

6. the electronic computer automatically computes the altitude of the sun, the moon or a star in degrees and minutes and calculates the exact location of the submarine

7. entitled "Quaestiones Quaedam Philosophicae"

166. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

_____ WITH NO FORMAL EDUCATION AND ONLY A LIMITED KNOWLEDGE OF MATHEMATICS. _____ WHEN A CUSTOMER GAVE HIM TICKETS FOR A SERIES OF LECTURES BY THE RENOWNED CHEMIST SIR HUMPHREY DAVY. AFTER ATTENDING THE LECTURES, THIS PERSON EXPANDED THE CAREFUL NOTES HE HAD TAKEN, AND BOUND THEM INTO A BOOK, _____. DAVY ADVISED HIM NOT TO GIVE UP A SKILLED TRADE FOR SOMETHING IN WHICH THERE WAS NEITHER MONEY NOR OPPORTUNITY FOR ADVANCEMENT. A FEW MONTHS LATER, HOWEVER, WHEN ONE OF HIS LABORATORY ASSISTANTS HAD TO BE DISMISSED, _____. AS A REWARD FOR HIS LIFETIME DEVOTION TO SCIENCE, _____ AND OFFERED HIM A KNIGHTHOOD.

1 Michael Faraday was a self-taught scientist

2. his great opportunity came at age 21,

3. which he sent to Davy with a letter asking for a job

4. Queen Victoria granted him the use of a house

5. Davy remembered this person and offered him a job

6. if the force, instead, is in the opposite direction

7. the body will start decelerating at a constant rate

167. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

IN ANCIENT TIMES, IT WAS KNOWN THAT, _____, AMBER COULD ATTRACT FEATHERS AND OTHER LIGHT OBJECTS. IT WAS ALSO KNOWN THAT IRON WAS ATTRACTED BY SOME MINERAL FROM THE PROVINCE OF MAGNESIA IN GREECE. IN 1600, SIR WILLIAM GILBERT (1540-1603), A CONTEMPORARY OF KEPLER AND GALILEO AND PHYSICIAN TO QUEEN ELIZABETH I, _____ WHICH MADE HIM FAMOUS THROUGHOUT EUROPE. _____ WHICH EXPLAINS WHY THE NEEDLE OF A MAGNETIC COMPASS ALWAYS POINTS TOWARD THE NORTH. HE ALSO SHOWED THAT MANY COMMON MATERIALS, WHEN RUBBED, _____. FROM THE GREEK WORD FOR AMBER, _____, FROM WHICH THE WORD ELECTRICITY WAS LATER DERIVED.

1. after being rubbed

2. he called such materials "electrons"

3. he correctly concluded that the Earth acts as a huge magnet

4. behaved like amber

5. published his book "On the Great Magnet of the Earth"

6. in the early 1800s, the Industrial Revolution

7. which originated in Britain in the mid-1700s, was in full swing

168. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

25,000 MAGAZINES DEVOTED ONLY TO PHYSICAL SCIENCES ARE PUBLISHED EVERY YEAR. IF A PHYSICIST READS AT A SPEED OF TWO WORDS PER SECOND 12 HOURS A DAY FOR FIFTY YEARS _____ THAT WILL BE MUCH LESS THAN HALF OF THE MAGAZINES ON PHYSICS PUBLISHED EVERY YEAR. _____ IT IS NOW EASIER TO MAKE A NEW SCIENTIFIC DISCOVERY THAN TO FIND OUT WHETHER IT HAS ALREADY BEEN MADE, AND WHERE IT HAS BEEN DESCRIBED. _____ MANY SCIENTIFIC DISCOVERIES ARE DUPLICATED AND REPEATED. THE ONLY PRACTICAL SOLUTION OF THE PROBLEM IS _____. WE CAN IMAGINE MANY SUCH MACHINES _____.

1. he will be able to read about 1,500 million words

2. along with the photoelectric effect and a complete theory predicting discrete energy levels of electron orbitals

3. as a result of this

4. each storing all the information on a definite scientific subject

5. the storing of scientific information in electronic computers

6. man has probably lived on earth more than 500,000 years

7. scientists often say that sometimes

169. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

MODERN SCIENTIFIC OBSERVATIONS AND CALCULATIONS _____. ONE SUCH CLOCK INVENTED BY AN AMERICAN SCIENTIST PROFESSOR JERROLD R. ZACHARIAS IS SO ACCURATE _____. _____ WHICH WHEN HEATED TO THE TEMPERATURE OF BOILING WATER, VIBRATES 9,200,000,000 TIMES A SECOND. SCIENTISTS PROKHOROV AND BASOV HAVE DEVELOPED A CLOCK, OPERATING WITH AN AMMONIA MOLECULE _____. THE NITROGEN ATOM IN AMMONIA, FOR EXAMPLE _____.

1. demand very accurate timekeeping

2. that it will lose no more than a second in 3,000 years

3. the heart of this "Atomichron" is a caesium atom

4. it is thought that the laws of physics do not change from place to place

5. vibrates 24 milliard times a second

6. which is even more accurate than "Atomichron"

7. this discrepancy was corrected by Einstein's theory of special relativity

170. *Заповніть пропуски цифрами, які відповідають відповідному пропущеному фрагменту у тексті (два фрагменти є зайвими):*

THE PROBLEM OF CONVERTING HEAT DIRECTLY INTO ELECTRICITY HAS ALWAYS ATTRACTED ATTENTION OF SCIENTISTS. _____IS BY MEANS OF GENERATORS THAT GET THEIR POWER FROM STEAM OR WATER TURBINES. _____ IS SMALL IN SIZE AND CAN PRODUCE ONLY A SMALL AMOUNT OF ELECTRICITY. THE AMOUNT OF ENERGY WHICH A RADIO-ACTIVE MATERIAL CAN RELEASE _____ (A HALF-LIFE IS THE AMOUNT OF TIME IT TAKES FOR HALF THE ENERGY OF A RADIO-ACTIVE MATERIAL TO BE RELEASED). _____ WILL GIVE MORE ELECTRICITY FOR A LONGER TIME. THE GREAT AMOUNT OF RADIO-ACTIVE MATERIAL FROM NUCLEAR REACTORS, CONSIDERED AT PRESENT AS "WASTES" _____.

1. the usual way to produce electricity

2. now the generator

3. is calculated in terms of half-lives

4. the radioisotopes which have a longer half-life

5. black body radiation provided another problem for classical physics

6. the other electronic device is placed into the periscope

7. could be used as a source of atomic power for this generator