

Quiz 1

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Write down the word in English that BEST describe the following statements.

4. 1. Listen and answer.

1 point

5. 2. Listen and answer.

1 point

6. 3. The number above the line in a fraction.

1 point

7. 4. The number below the line in a fraction.

1 point

8. 5. A number that can be written as $2n$, where n is an integer.

1 point

9. 6. A number that can be written as $2n+1$, where n is an integer. 1 point

10. 7. An element whose atom consists of one proton and one electron. 1 point

11. 8. We learn Maxwell's equations in the electricity and () class. 1 point

12. 9. The fundamental physical theory developed in the 1920s as a replacement of classical mechanics. 1 point

13. 10. I am an () student studying physics. * 1 point

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Quiz 2 (May 12, 2020)

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Write down the words in English that BEST describe or complete the following statements.

4. 1. Listen and answer. *

1 point

Mark only one oval.

$4\pi D^2$

πD^2

$(4/3)\pi D^3$

$(1/6)\pi D^3$

Other: _____

5. 2. Listen and answer. *

1 point

Mark only one oval.

equilateral triangle

isosclace triangle

isosclece traiangle

right triangle

Other: _____

6. 3-4. A (a) number consists of a real part and an (b) part. [Answer as a, b.] * 2 points

7. 5-7. In a (a) coordinate system, a position is specified by distance r, (b) angle theta 3 points
from the z-axis, and (c) angle phi. [Answer as a, b, c] *

8. 8-9. A proton is heavier than an electron by three (a) of (b). [Answer as a, b] * 2 points

9. 10. A trapezoid has a pair of opposite sides (a). * 1 point

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Quiz 3 (May 19, 2020)

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Write down or choose the words in English that BEST describe or complete the following statements.

4. 1. The equation $\text{div} \mathbf{B}^* = 0$ is one of (1) equations. *: vector capital B * 1 point

Mark only one oval.

- the Maxwell's
 Maxwell's
 Maxwell

5. 2. This solution has the peculiar (2) of being invariant under the interchange of x and y. * 1 point

Mark only one oval.

- property
 properties

6. 3. Write down the plural form (複数形) of the following word: parenthesis. * 1 point

7. 4. Write down the plural form (複数形) of the following word: hypothesis. * 1 point

8. 5. Write down the singular form (单数形) of the following word: media. * 1 point

9. 6. Write down the singular form (单数形) of the following word: supernovae. 1 point
*

10. 7. Write down the plural form (複数形) of the following words: formula. * 1 point

11. 8. Write down the plural form (複数形) of the following words: percent * 1 point

12. 9-10. A (9) in thermal equilibrium (that is, at a constant temperature) emits electromagnetic radiation called (10) radiation. *

Mark only one oval.

- black body, black body
 black-body, black body
 black body, black-body
 black-body, black-body

Quiz 4 (May 26, 2020)

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Write down or choose the words in English that BEST describe or complete the following statements.

4. 1. (Listen and answer.) *

1 point

5. 2. (Listen ans answer.) *

1 point

6. 3. Two equal capacitors connected in (3) give the total capacitance that is a half of each capacitance. *

1 point

7. 4-5. The change in direction of a wave when it enters another medium is (2 points
4), whereas the change in direction of a wave around an obstacle is (5).
*Answer as "xxx, yyy". *
-

8. 6. Newton's second law states that the (6) of a body is given by the force 1 point
divided by the mass. *
-

Complete the following sentences to show how to read these equations.

9. 7-8. The curl of the vector capital E equals minus the (7) derivative of the 2 points
vector capital B (8-1) (8-2) to t. *Answer as "xxx, yyy, zzz" *

$$\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}$$

10. 9-10. The natural logarithm of n (9) is (10) equal to n log n minus n. * 2 points

$$\ln(n!) \approx n \ln(n) - n$$

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Quiz 5 (June 2, 2020)

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Write down the words in English that BEST describe or complete the following statements.

4. 1. (Listen and answer.) *

1 point

5. 2. (Listen ans answer.) *

1 point

6. 3-4. Heisenberg's (3) (4) states that the more precisely the position of some particle is determined, the less precisely its momentum can be predicted. *Answer as "xxx, yyy". *

2 points

7. 5. Entropy remains constant in an (5) process which is also reversible. * 1 point
-

Complete the following sentences with the most appropriate words.

8. 6. Let us (6) the origin of the universe. * 1 point

Check all that apply.

- discuss about
- at first discuss about
- discuss in detail
- discuss in
- discuss

9. 7. The splitting of the spectral peaks (7) the Zeeman effect. * 1 point

Check all that apply.

- are originated from
- is originated from
- originate from
- originates from
- is originating in

10. 8. A large number of muons entering the target (8) successfully captured. 1 point
*

Check all that apply.

- was
- were
- being
- can

11. 9. 受動態にせよ。A modern digital voltmeter can detect even a nano-volt signal. * 2 points
-

Quiz 6 (June 9, 2020)

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Write down the words in English that BEST describe or complete the following statements.

4. 1. LED stands for a (1a) - (1b) (1c). *Answer as "xxx, yyy, zzz". * 1 point

5. 2. The nuclear reaction taking place in the sun is nuclear (2). * 1 point

6. 3-4. In (3a) (3b) they discovered a particle with a mass similar (4) that predicted by Yukawa. *Answer as "xxx, yyy, zzz". * 2 points

7. 5. Gravitational waves were predicted by Einstein's theory of (5a) (5b). *Answer as "xxx, yyy". * 1 point

Complete the following sentences with the most appropriate word or words in each pair of the parentheses.

8. 6-7. The specific heat of an (6) at low temperature is (7) the cube of temperature. *Answer with a comma in between. 絶縁体、比例する *

9. 8-9. The mass of a proton is larger than that of an electron (8) three (9a) of (9b). *Answer as "xxx, yyy, zzz". 3桁大きい *

10. 10. An electron and a positron have negative and positive charges(10). それぞれ *

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Quiz 7 (June 16, 2020)

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Listen and answer.

4. 1. Write down the element symbols. *Answer as "XX, YY". *

1 point

5. 2. Write down the element symbols. *Answer as "XX, YY". *

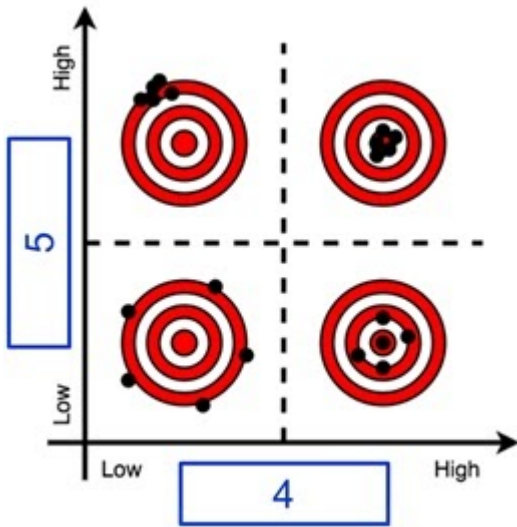
1 point

6. 3. Spell out the following element names. *Answer as "xxxx, xxxx". *

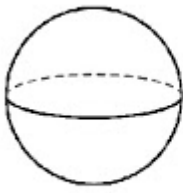
1 point

Answer with the most appropriate words in English.

7. 4-5. Fill in the boxes 4 and 5 with the most appropriate words. **Answer to 4 and 5 as "xxxx, yyyy" in this order. (from Eigopedia) *



8. 6-7. Give the names of the following figures in English. *Answer as "xxxx, yyyy". *



6



7

Answer with the most appropriate forms of the verbs.

9. 8. We must avoid (8) these two chemicals. *

1 point

Mark only one oval.

- mixing
- to mix
- mix
- having mixed

10. 9. (9) the atomic shell structure last week, I will now explain the nuclear shell structure. * 1 point

Mark only one oval.

- Discussed
- Having discussed
- Discussing
- To discuss

11. 10. (10) with the classical treatment, the correct result gives a value smaller by a factor of two. * 1 point

Mark only one oval.

- Compared
- Having compared
- Comparing
- In order to compare
- Other: _____

12. 11. The (11) question is how we can reach the quantum limit for this detection. * 1 point

Mark only one oval.

- remained
- remaining
- Other: _____

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Quiz 8 (June 30, 2020)

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Listen and answer in English.

4. 1. Listen and answer. *

1 point

5. 2. Listen and answer. *

1 point

Answer with the most appropriate words in English.

6. 3. What does NMR stand for? (省略前の言葉は?) *

1 point

7. 4. What is the name of the following function in statistical physics? *

1 point

$$Z = \sum_{n=0}^{\infty} e^{-E_n/k_B T}$$

Fill in the most appropriate prepositions in the parentheses.

8. 5. The long life time of the muon is attributed (5) the relativistic effect. *

1 point

9. 6. The size of a nucleus is (6-1) the order (6-2) 10^{-15} m. *Answer as xxx, yyy. *

1 point

10. 7. The instrumental noise is expressed (7-1) terms (7-2) equivalent gravitational-wave strain amplitude. *Answer as xxx, yyy. *

1 point

11. 8. The specific heat divided (8-1) temperature is plotted (8-2) the temperature squared in Fig. 1. *Answer as xxx, yyy. *

1 point

12. 9. He deduced the properties of these particles (9-1) the characteristics (9-2) nuclear forces. *Answer as xxx, yyy. *

1 point

13. 10. The difference (10-1) the masses (10-2) a neutron and a proton is greater than that (10-3) an electron. *Answer as xxx, yyy, zzz. *

1 point

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Quiz 9 (July 7, 2020)

* Required

1. Email address *

2. What is your name? (FAMILY, Given) (e.g. SUZUKI, Ichiro) *

3. What is your student ID number? (e.g. 0500309999) *

Complete the following sentences on nuclear reactors with the most appropriate words.

4. 1. The (1a) inside the (1b) rod undergoes nuclear (1c). *Answer as xxx, yyy, zzz. *

2 points

5. 2. Fukushima Daiichi Nuclear Power Plant uses (2a) water (2b), whereas the nuclear power plants in Fukui mainly use (2c) water (same as 2b). *Use plural forms if needed. Answer as xxx, yyy, zzz. *

2 points

Fill in the most appropriate articles in the parentheses, a (A), an (An), the (The), or phi (for no article).

6. 3. (3a) quantity \hbar has (3b) interesting interpretation. *Answer as xx, yy. *

1 point

7. 4. In Fig. 1, we plot all (4a) data obtained in this experiment with (4b) open circles. *Answer as xx, yy. *

1 point

8. 5. (5a) phenomenon of superconductivity is (5b) remarkable example of (5c) quantum effects operating on (5d) truly macroscopic scale. *Answer as ww, xx, yy, zz. *

2 points

9. 6. (6a) area A of (6b) circle of (6c) radius R is given by (6d) following formula: $A = \pi R^2$. *Answer as ww, xx, yy, zz. *

2 points

Quiz 1

Q1: “The mathematical operation represented by a minus (–) symbol” → subtraction (Subtraction)

Q2: “A charge-neutral nucleon” → neutron (Neutron)

Q3: numerator (Numerator)

Q4: denominator (Denominator)

Q5: even number (an even number, Even number)

Q6: odd number (an odd number, Odd number)

Q7: hydrogen (Hydrogen)

Q8: magnetism

Q9: quantum theory (Quantum theory)

Q10: undergraduate

Quiz 2

Q1: πD^2

Q2: right triangle

Q3-4: complex, imaginary

Q5-7: spherical, polar, azimuthal

Q8-9: orders, magnitude

Q10: parallel

Quiz 3

Q1: Maxwell's

Q2: property

Q3: parentheses

Q4: hypotheses

Q5: medium

Q6: supernova

Q7: formulae

Q8: percent

Q9-10: black body, black-body

Quiz 4

Q1: “The energy associated with motion.” kinetic energy

Q2: “The force between positive and negative charges is *attractive*. How about the force between two positive charges?” repulsive (Repulsive, repulsive force, Repulsive force)

Q3: series

Q4-5: refraction, diffraction

Q6: acceleration

Q7-8: partial, with, respect

Q9-10: factorial, approximately (nearly, roughly, etc.)

Quiz 5

Q1: “A situation in which two or more distinct states have the same energy.”

→ degeneracy (degenerate)

Q2: “The condition of a system in which all competing influences are balanced, either mechanically or thermally.”

→ equilibrium

Q3-4: uncertainty, principle

Q5: adiabatic

Q6: discuss in detail, discuss

Q7: originates from

Q8: were

Q9: Even a nano-volt signal can be detected **with** a modern digital voltmeter.

Quiz 6

Q1 light, emitting, diode

Q2 fusion

Q3-4 cosmic, rays, **to**

Q5 general, relativity

Q6-7 insulator, **proportional to**

Q8-9 **by, orders**, magnitude

Q10 **,** respectively (カンマ必要)

Quiz 7

Q1: “germanium, uranium” →Ge, U

Q2: “sodium, xenon” →Na, Xe

Q3: neodymium, potassium [Nd, K]

Q4-5: accuracy, precision (Accuracy, Precision)

Q6-7: sphere, isosceles triangle

Q8: mixing

Q9: Having discussed

Q10: Compared

Q11: remaining

Quiz 8

Q1: “What is the reaction in which a heavy nucleus splits into two or more fragments of comparable size?” → nuclear fission (fission, Nuclear fission, Fission)

Q2: “What are a class of materials whose electrical resistance disappear completely below certain temperatures?” →
superconductors (Superconductors) 単数形は 0.5 点

Q3: nuclear magnetic resonance (Nuclear Magnetic Resonance, nuclear magnetic resonance)

Q4: partition function (a partition function, Partition function)

Q5: to

Q6: on, of

Q7: in, of

Q8: by, against

Q9: from, of

Q10: in, between, of

(本文 than that of の that が抜けていたので、”of”は全員 1 点、in, between でさらに 1 点)

Quiz 9

Q1: uranium, fuel, fission

Q2: boiling, reactor~~s~~, pressurized

Q3: The, an

Q4: the, phi

Q5: The, a, the, a

Q6: The, a, phi, the