Physics

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Attempted MCQs 0/25   ↻

1) _____ deals with the study of wavelength and intensity of electromagnetic radiation spectrum emitted or absorbed by atoms.

A) Relativity   C) Radioactivity

B) Spectroscopy   D) Photoelectric effect

○ A   ○ B   ○ C   ○ D

2) Velocity of electron in the first orbit is:

A) 2.19×10^6 m s^{-1} C) 2.19×10^7 m s^{-1}

B) 2.18×10^7 m s^{-1} D) 2.2×10^6 m s^{-1}

○ A   ○ B   ○ C   ○ D

3) If a mono-atomic gas is ionized then it shows:

A) Line spectrum   C) Band spectrum

B) Continuous spectrum   D) visible spectrum

○ A   ○ B   ○ C   ○ D

4) Velocity of electron in an orbit is _____ to/of principal quantum number.

A) Directly proportional   C) Inversely proportional

B) Not related   D) Proportional to square

○ A   ○ B   ○ C   ○ D

5) Normally electrons in the hydrogen atom are in the:

A) Ground state   C) Excited state

B) Ionized state   D) Meta stable state

○ A   ○ B   ○ C   ○ D

6) Free electron may have energy:

A) Quantized   C) Integral of E_o

B) Half of E_0 D) Any amount

○ A   ○ B   ○ C   ○ D

7) **Shortest wavelength of Lyman series is:**

A) 91 nm   C) 100 nm

B) 9.1 nm   D) 10 nm

○ A   ○ B   ○ C   ○ D

8) **Radiation with wavelengths longer than red light is:**

A) Ultra violet   C) Visible

B) X-rays   D) Infrared

○ A   ○ B   ○ C   ○ D

9) **The excitation energy of an electron to send it to $n = \infty$, is equal to:**

A) Potential energy   C) Kinetic energy

B) Total energy   D) Ionization energy

○ A   ○ B   ○ C   ○ D

10) **The ratio of kinetic energy and the total energy of the electron in the hydrogen atom is.**

A) 1:1   C) 1:2

B) 1: -1   D) 1: -2

○ A   ○ B   ○ C   ○ D

11) **Which of these series of hydrogen spectrum lies in the ultra-violet region?**

A) Paschen series   C) Pfund series

B) Brackett series   D) Lyman series

○ A   ○ B   ○ C   ○ D

12) **The ratio of longest and shortest wavelengths of Lyman series is:**

A) $\dfrac{4}{3}$ C) $\dfrac{9}{5}$

B) $\dfrac{9}{4}$ D) $\dfrac{16}{5}$

○ A   ○ B   ○ C   ○ D

13) **With increasing quantum number, the energy difference between adjacent levels in atoms:**

A) Increases   C) Remains constant

B) Decreases   D) Increases only for high Z

○ A   ○ B   ○ C   ○ D

14) **If L is angular momentum of electron in the 2nd orbit of hydrogen atom then angular momentum in the fourth orbit will be.**

A) 2L   C) $\dfrac{3}{L}$

B) $\dfrac{L}{2}$ D) $\dfrac{L}{3}$

○ A   ○ B   ○ C   ○ D

15) Photon of smallest wavelength will be absorbed when transition takes place from _____ to _____ orbit.

A) 2, 6   C) 3, 6

B) 1, 6   D) 4, 6

○ A   ○ B   ○ C   ○ D

16) In an electronic transition, atom cannot emit.

A) UV rays   C) γ -rays

B) Visible light   D) Infrared rays

○ A   ○ B   ○ C   ○ D

17) When an electron in hydrogen atom jumps from second orbit to first orbit then energy of photon emitted is:

A) 13.6 eV   C) 10.2 eV

B) 3.4 eV   D) 10.2 V

○ A   ○ B   ○ C   ○ D

18) The longest wavelength of radiation for the Paschen series is:

A) 1094 nm   C) 234 nm

B) 1875 nm   D) 91 nm

○ A   ○ B   ○ C   ○ D

19) The value of principal quantum to find maximum value of wavelength in Pfund series is:

A) 3   C) 5

B) 4   D) 6

○ A   ○ B   ○ C   ○ D

20) For the hydrogen atom, the ratio $\dfrac{\Delta r_{23}}{\Delta r_{34}} = ---$, where

$\Delta r_{23} = distance$ between 2nd and 3rd shell and $\Delta r_{34} = distance$ between 3rd and 4th shell.

A) $\dfrac{3}{4}$ C) $\dfrac{3}{7}$

B) $\dfrac{5}{4}$ D) $\dfrac{5}{7}$

○ A   ○ B   ○ C   ○ D

21) Which Postulate of Bohr's Model of the hydrogen atom contradict with classical physics?

A) 1st C) 3rd

B) 2nd D) All of these

○ A   ○ B   ○ C   ○ D

22) The ratio of K.E to P.E for an electron in 5th shell of hydrogen atom is:

A) 2:1   C) 5:25

B) 1:2   D) 3:4

○ A   ○ B   ○ C   ○ D

23) **Which one is the example of continuous spectrum?**

A) Atomic spectrum

B) Molecular spectrum

C) Black body radiation spectrum

D) None of these

○ A   ○ B   ○ C   ○ D

24) **The excitation energy of electron is _____ than/to the ionization energy in Hydrogen atom?**

A) Greater   C) Equal

B) Less   D) Any of these

○ A   ○ B   ○ C   ○ D

25) **The Rydberg constant has the dimensions:**

A) Reciprocal of length   C) Reciprocal of time

B) Reciprocal of wavelength   D) Both A & B

○ A   ○ B   ○ C   ○ D

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