

AFNS TEST 8,9 September 2025

X-ray diffraction proves?

Correct Answer: Wave nature of X-rays

Explanation: Crystals diffract X-rays like waves, which demonstrates their wave-like behavior.

•**Related Question 1:** What phenomenon is observed when X-rays pass through a crystal?

Correct Answer: Diffraction

•**Related Question 2:** What type of waves are X-rays classified as?

Correct Answer: Electromagnetic waves



AFNS ACADEMIC NOTES

ARMED FORCES NURSING SERVICES



DISCLAIMER:

یہ نوٹس صرف تعلیمی مقاصد کے لیے تیار کیے گئے ہیں اور ان کا مواد مکمل طور پر ہماری محنت اور علم پر مبنی ہے۔ یہ ڈیمو نوٹس ہیں اور ہماری لیکچر سلائیڈز پر مبنی ہیں۔ ان نوٹس کو کسی بھی صورت میں نقل کرنا یا بغیر اجازت استعمال کرنا غیر قانونی اور غیر اخلاقی ہے۔ تمام حقوق محفوظ ہیں۔

BY:

MUHAMMAD FAIZAN (EX-AIRFORCE PERSONNEL)

EduSmart | The Best Coaching Academy

اگر آپ آرمی، نیوی یا ایئر فورس کی کسی بھی برانچ کے امتحان کی تیاری کرنا چاہتے ہیں تو ہم سے رابطہ کریں: 03066892208

To Join Classes Contact: 03066892208



EduSmart

AFNS TEST 8,9 September 2025

Polarization shows?

Correct Answer: Transverse nature of light

Explanation: Only transverse waves, like light, can be polarized because polarization involves oscillations in directions perpendicular to the direction of wave propagation.

Related Question 1: What is a common use of polarized light?

Correct Answer: Reducing glare

Related Question 2: What type of waves cannot be polarized?

Correct Answer: Longitudinal waves

AFNS TEST 8,9 September 2025

Compound microscope increases magnification using?

Correct Answer: Two convex lenses

Explanation: The compound microscope uses an objective lens to create an initial magnified image and an eyepiece to further magnify the image for viewing.

Related Question 1: What is the purpose of the eyepiece in a compound microscope?

Correct Answer: To magnify the image further

Related Question 2: What is the function of the objective lens in a compound microscope?

Correct Answer: To create the initial magnified image

AFNS TEST 8,9 September 2025

Speed of light in vacuum?

Correct Answer: 3.0×10^8 m/s

Explanation: The speed of light in a vacuum is a universal constant and is the maximum speed at which information or matter can travel.

Related Question 1: What is the speed of light in air?

Correct Answer: Slightly less than 3.0×10^8 m/s

Related Question 2: What is the symbol used to represent the speed of light?

Correct Answer: c

AFNS TEST 8,9 September 2025

Fibre optics works on principle of?

Correct Answer: Total internal reflection

Explanation: Fibre optics relies on total internal reflection, where light is trapped within the fiber and continuously reflects off the inner walls, allowing it to travel long distances without significant loss.

Related Question 1: What is the angle of incidence required for total internal reflection?

Correct Answer: Greater than the critical angle

Related Question 2: What happens when light is not at the correct angle in fiber optics?

Correct Answer: The light is refracted out of the fiber

AFNS TEST 8,9 September 2025

Spectrometer is used to measure?

Correct Answer: Wavelength and angle of diffraction

Explanation: A spectrometer is used in optical analysis to measure the wavelength of light and the angle at which light is diffracted by a material.

Related Question 1: What is the primary use of a spectrometer in physics?

Correct Answer: To analyze the spectrum of light

Related Question 2: What component of the spectrometer disperses light?

Correct Answer: The diffraction grating

AFNS TEST 8,9 September 2025

Pressure of gas is due to?

Correct Answer: Collisions of molecules with walls

Explanation: Gas pressure arises from the constant collisions of gas molecules with the walls of their container, transferring momentum and exerting force.

Related Question 1: What does Boyle's Law describe?

Correct Answer: The inverse relationship between pressure and volume of a gas

Related Question 2: What happens to the pressure if the volume of a gas decreases?

Correct Answer: The pressure increases

AFNS TEST 8,9 September 2025

First law of thermodynamics states?

Correct Answer: Heat = Work + Internal energy

Explanation: The first law of thermodynamics is a statement of energy conservation, which shows that energy cannot be created or destroyed, only transformed from one form to another.

Related Question 1: What is another name for the first law of thermodynamics?

Correct Answer: The law of energy conservation

Related Question 2: What is the formula for the first law of thermodynamics?

Correct Answer: $Q = \Delta U + W$

AFNS TEST 8,9 September 2025

Second law of thermodynamics deals with?

Correct Answer: Irreversibility and entropy increase

Explanation: The second law of thermodynamics explains that processes in an isolated system tend to increase disorder, or entropy, and that heat always flows from hot to cold naturally.

Related Question 1: What does the second law of thermodynamics imply about energy flow?

Correct Answer: Heat flows from hot to cold spontaneously

Related Question 2: What is the measure of disorder in a system?

Correct Answer: Entropy

AFNS TEST 8,9 September 2025

One who can speak many languages?

Correct Answer: Polyglot

Explanation: A polyglot is someone who knows and is able to use several languages with proficiency.

Related Question 1: What is the term for a person who speaks two languages?

Correct Answer: Bilingual

Related Question 2: What term is used for a person who speaks three languages?

Correct Answer: Trilingual

AFNS TEST 8,9 September 2025

If X is 3 years old and his sister is 3 times older, what will be her age when he is 8?

Correct Answer: 14 years old

Explanation: X's sister is 6 years older than him. When X turns 8, his sister will be 14 years old.

Related Question 1: If X is 5 years old and his sister is 3 times older, how old is she?

Correct Answer: 15 years old

Related Question 2: If X is 10 years old and his sister is 5 times older, how old is she?

Correct Answer: 50 years old

AFNS TEST 8,9 September 2025

Complete the series A4, C6, E8, ?

Correct Answer: G10

Explanation: The pattern alternates between skipping one letter in the alphabet (A, C, E...) and increasing the number by 2 (4, 6, 8...).

Related Question 1: What comes next in the series A2, C4, E6, ?

Correct Answer: G8

Related Question 2: What is the next term in the series B3, D5, F7, ?

Correct Answer: H9

AFNS TEST 8,9 September 2025

Continue the series 66, 63, 57, 47, ?

Correct Answer: 32

Explanation: The differences between consecutive terms are: -3, -6, -10, -15. The next difference is -20, so $47 - 20 = 32$.

Related Question 1: Continue the series 100, 95, 85, 70, ?

Correct Answer: 50

Related Question 2: What is the next term in the series 10, 20, 35, 55, ?

Correct Answer: 80

AFNS TEST 8,9 September 2025

Odd one out: Ape, Chimpanzee, Baboon, Panda?

Correct Answer: Panda

Explanation: All the animals except the panda are primates, while the panda is a bear.

Related Question 1: Odd one out: Dog, Wolf, Fox, Kangaroo?

Correct Answer: Kangaroo

Related Question 2: Odd one out: Tiger, Leopard, Lion, Elephant?

Correct Answer: Elephant

AFNS TEST 8,9 September 2025

In Young's double slit experiment, if slit separation is halved and screen distance doubled, what happens to fringe width?

Correct Answer: Fringe width becomes 4 times

Explanation: Fringe width (β) is given by the equation $\beta = \lambda D/d$. If the slit separation (d) is halved and the screen distance (D) is doubled, the fringe width increases by a factor of 4.

Related Question 1: What happens to fringe width if the wavelength of light is doubled?

Correct Answer: Fringe width doubles

Related Question 2: If the screen distance is halved, what happens to fringe width?

Correct Answer: Fringe width becomes half

AFNS TEST 8,9 September 2025

What is used in decarboxylation of carboxylic acids?

Correct Answer: Soda lime ($\text{NaOH} + \text{CaO}$)

Explanation: Soda lime is used to remove the carboxyl group ($-\text{COOH}$) from carboxylic acids, leading to the formation of alkanes.

Related Question 1: What is formed when soda lime reacts with a carboxylic acid?

Correct Answer: An alkane

Related Question 2: What is the reaction type when a carboxylic acid undergoes decarboxylation?

Correct Answer: Elimination reaction

AFNS TEST 8,9 September 2025

What is the most abundant polymer on Earth?

Correct Answer: Cellulose

Explanation: Cellulose is the most abundant organic polymer found in the cell walls of plants.

Related Question 1: What type of polymer is cellulose?

Correct Answer: Polysaccharide

Related Question 2: In which organisms is cellulose most commonly found?

Correct Answer: Plants

AFNS TEST 8,9 September 2025

If embryo is implanted in ovary, which hormone is secreted?

Correct Answer: HCG (Human Chorionic Gonadotropin)

Explanation: HCG is secreted to maintain the corpus luteum and ensure continued progesterone production, sustaining pregnancy.

Related Question 1: What hormone does the corpus luteum secrete during pregnancy?

Correct Answer: Progesterone

Related Question 2: What does HCG do during pregnancy?

Correct Answer: Maintains the corpus luteum to produce progesterone

AFNS TEST 8,9 September 2025

Question: What is Heisenberg's uncertainty principle?

Correct Answer: It states that the position and momentum of a particle cannot both be precisely measured at the same time.

Related Question 1: What is the formula for the uncertainty principle?

Correct Answer: $\Delta x * \Delta p \geq \hbar/2$

Related Question 2: Who proposed the uncertainty principle?

Correct Answer: Werner Heisenberg

AFNS TEST 8,9 September 2025

Question: What is the Pauli exclusion principle?

Correct Answer: No two electrons in an atom can have the same set of quantum numbers.

Related Question 1: Which particles obey the Pauli exclusion principle?

Correct Answer: Fermions

Related Question 2: What type of particles do not obey the exclusion principle?

Correct Answer: Bosons