

PGIMER

B.Sc. NURSING
ENTRANCE

KAMIKAS NURSING ACADEMY

CHEMISTRY

KANIKA'S NURSING ACADEMY

Q1. What is the Ph of 0.01M HCL solution?

- A.1
- B.2
- C.3
- D.4

- Answer: B. 2

TANIKA'S NURSING ACADEMY

Q2. Aldehydes generally undergo which type of reaction?

- A. Electrophilic substitution
 - B. Nucleophilic addition
 - C. Free-radical substitution
 - D. Elimination
-
- Answer: B. Nucleophilic addition

Q3. Which of the following reactions is characteristic of aldehydes?

- A. Nucleophilic addition reaction
 - B. Electrophilic substitution reaction
 - C. Dehydration reaction
 - D. Polymerization reaction
-
- Answer: A. Nucleophilic addition reaction

Q4. Which alkyl halide reacts fastest with alcoholic AgNO_3 ?

- A. Methyl halide
 - B. Primary alkyl halide
 - C. Secondary alkyl halide
 - D. Tertiary alkyl halide
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- Answer: D. Tertiary alkyl halide
-
- Key point: Reactivity towards alcoholic AgNO_3 generally follows: $3^\circ > 2^\circ > 1^\circ$

Q5. What is the hybridization of oxygen in H_2O ?

- A. Sp
- B. sp^2
- C. sp^3
- D. Sp^3d

• Answer: C. sp^3

Q6. What is the normal pH range of human arterial blood?

- A. 6.8–7.0
- B. 7.35–7.45
- C. 7.50–7.60
- D. 8.0–8.2

• Answer: B. 7.35–7.45

Q7. One kilocalorie (kcal) is equal to:

- A. 100 calories
 - B. 500 calories
 - C. 1,000 calories
 - D. 10,000 calories
-
- Answer: C. 1,000 calories

Q8. A patient has a respiratory rate of 8 breaths/minute. How should the nurse document this finding?

- A. Tachypnea
- B. Eupnea
- C. Bradypnea
- D. Apnea

Answer: C. Bradypnea

- Rationale: Bradypnea means an abnormally slow respiratory rate, generally less than 12 breaths/minute in an adult.

KANIKA'S NURSING ACADEMY

PHYSICS

Q1. According to Newton's second law of motion, the force acting on a body is equal to:

- A. m/v
 - B. mv
 - C. ma
 - D. m/a
-
- Answer: C. ma

Q2. A ray of light travels from air ($n=1$) into glass ($n=1.5$). What is the angle of refraction if the angle of incidence is 30° ?

- A. 19.5°
- B. 30°
- C. 45°
- D. 60°

- Answer: A. 19.5°

- Rationale: Using Snell's law: $n_1 \sin i = n_2 \sin r$

Q3. A wave has a frequency of 500 Hz and travels with a velocity of 300 m/s. What is its wavelength?

- A. 0.2 m
- B. 0.6 m
- C. 1.5 m
- D. 2.5 m

• Answer: B. 0.6 m

Q4. Which electromagnetic radiation has the highest penetrating power?

- A. Radio waves
 - B. Ultraviolet rays
 - C. X-rays
 - D. Gamma rays
-
- D. Gamma rays

Q5. A convex mirror has a focal length of 20 cm. What is its radius of curvature?

- A. 10 cm
- B. 20 cm
- C. 40 cm
- D. 60 cm

• Answer: C. 40 cm

Q6. A force of 10 N moves an object through a distance of 5 m in the direction of the force. What is the work done?

- A. 2 J
- B. 15 J
- C. 50 J
- D. 100 J

• Answer: C. 50 J

Q7. A gas absorbs 500 J of heat and performs 200 J of work. What is the change in its internal energy?

- A. 200 J
- B. 300 J
- C. 500 J
- D. 700 J

- Answer: B. 300 J

Q8. An object displaces 0.02 m^3 of water. If the density of water is 1000 kg/m^3 and $g=10 \text{ m/s}^2$, what is the buoyant force?

- A. 20 N
- B. 100 N
- C. 200 N
- D. 500 N

• Answer: C. 200 N

Q9. The root mean square (RMS) velocity of gas molecules is proportional to:

- A. T
- B. $\sqrt{T}$
- C. $1/T$
- D. T^2

Q10. Which gas has the highest RMS velocity at the same temperature?

- A. Oxygen
 - B. Nitrogen
 - C. Hydrogen
 - D. Carbon dioxide
-
- Answer: C. Hydrogen

Q11. The mean free path of gas molecules is affected by the:

- A. Pressure and molecular diameter
 - B. Colour of gas
 - C. Shape of container only
 - D. Volume of solid
-
- Answer: A. Pressure and molecular diameter

Q12. If the radius of a spherical particle is increased, the surface area-to-volume ratio will:

- A. Increase
- B. Decrease
- C. Remain the same
- D. Become zero

- Answer: B. Decrease

KANIKA'S NURSING ACADEMY

BIOLOGY

Q1. Which organelle is known as the “powerhouse of the cell”?

- A. Nucleus
 - B. Ribosome
 - C. Mitochondria
 - D. Golgi apparatus
-
- Answer: C. Mitochondria

Q2. Which gas is essential for photosynthesis?

- A. Oxygen
 - B. Nitrogen
 - C. Carbon dioxide
 - D. Hydrogen
-
- Answer: C. Carbon dioxide

Q3. Which of the following is considered one of the most primitive groups of algae?

- A. Green algae
 - B. Brown algae
 - C. Blue-green algae
 - D. Red algae
-
- Answer: C. Blue-green algae

Q4. What is the causative organism of typhoid fever?

- A. Escherichia coli
- B. Salmonella Typhi
- C. Vibrio cholerae
- D. Shigella dysenteriae

- Answer: B. Salmonella Typhi

Q5. The cell is the structural and functional unit of:

- A. Plants only
 - B. Animals only
 - C. All living organisms
 - D. Viruses only
-
- Answer: C. All living organisms

Q6. Which blood group is considered the universal donor for red blood cell transfusion?

- A. A positive
- B. B negative
- C. AB positive
- D. O negative

- Answer: D. O negative

Q7. Mitosis is a type of cell division that produces:

- A. Four genetically different cells
 - B. Two genetically identical daughter cells
 - C. Three daughter cells
 - D. One daughter cell
-
- Answer: B. Two genetically identical daughter cells

Q8. Mitosis is mainly responsible for:

- A. Formation of gametes
- B. Growth and tissue repair
- C. Reduction of chromosome number
- D. Genetic variation

- Answer: B. Growth and tissue repair

KANIKA'S NURSING ACADEMY

ENGLISH

Q1. Choose the antonym of “Ancient”

- A. Old
- B. Modern
- C. Historic
- D. Primitive

Answer: B. Modern

Q2. Choose the antonym of “Expand”.

- A. Increase
- B. Extend
- C. Contract
- D. Enlarge

- Answer: C. Contract

Q3. Choose the synonym of "Rapid".

- A. Slow
- B. Quick
- C. Weak
- D. Late

Answer: B. Quick

Q4. Choose the synonym of
"Abundant".

- A. Scarce
- B. Plenty
- C. Rare
- D. Empty

- Answer: B. Plenty

TRANIKA'S NURSING ACADEMY