

Sample Test Items

The following sample items are similar to those on the PCAT and similar to those on the online Practice test that you will find at the PCAT website. You will find answers to these sample questions at the end of this section.

Verbal Ability

Directions: Choose the word that best completes the analogy.

1. PLANE : AIRPORT :: SHIP :
 - A. Pier
 - B. Berth
 - C. Depot
 - D. Station
2. INEPT : SKILL :: FLIMSY :
 - A. Power
 - B. Weight
 - C. Strength
 - D. Thickness

Directions: Choose the word or set of words that makes the **most** sense when inserted into the sentence and that **best** fits the meaning of the sentence as a whole.

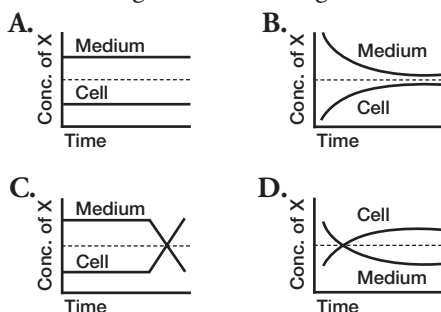
3. Many researchers believe that dreamless sleep is largely a period of physical rest, whereas dreaming sleep is a period of mental _____ during which the mind _____ and stores the information acquired during the day.
 - A. relaxation . . . processes
 - B. inactivity . . . categorizes
 - C. fatigue . . . integrates
 - D. restoration . . . sorts
4. The bottom of the epidermis is made up of newly formed growing cells that become flatter and scaller as they move through the middle layers toward the _____ of the skin.
 - A. edge
 - B. surface
 - C. middle
 - D. interior

Biology

Directions: Choose the best answer to each of the following questions.

- In humans, the removal and storage of excess glucose from the blood is one of the primary functions of the
 - liver.
 - kidneys.
 - pancreas.
 - large intestine.
- In a certain organism, red (R) color is dominant over white (r). In a cross between an RR and an rr individual, what percentage of the offspring will be red?
 - 25%
 - 50%
 - 75%
 - 100%

- Which of the following graphs most accurately shows the relationship between the cell and the surrounding medium during osmosis?



- When viewed under a microscope, what typically causes chromosomes to become more distinct during the prophase stage of mitosis?
 - The chromosomes condense and thicken.
 - The chromosomes lengthen to visible size.
 - The membrane of the nucleus becomes transparent.
 - Some of the genes absorb pigment and become opaque.

Chemistry

Directions: Choose the best answer to each of the following items.

- What volume of carbon dioxide would be produced if 5 liters of propane, C_3H_8 , were burned in air according to the following equation?
$$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$$
 - 1 liter
 - 3 liters
 - 15 liters
 - 30 liters
- The fact that helium gas is monatomic is best explained by the
 - vacant $2s$ and $2p$ orbitals of the helium atom.
 - small diameter of the nucleus of the helium atom.
 - presence of a single proton in the nucleus of the helium atom.
 - relative magnitudes of attractive and repulsive forces between two helium atoms.
- The equation
$${}_{19}^{40}K \rightarrow {}_{20}^{40}Ca + {}_{-1}^0e + \nu$$
represents an example of the process called
 - alpha decay.
 - beta decay.
 - positron emission.
 - orbital electron capture.
- Hydrocarbons with two or more double bonds are
 - unsaturated.
 - saturated.
 - cyclic.
 - acids.

Quantitative Ability

Directions: Choose the best answer to each of the following questions.

- As an angle increases from 0° to 90° , what happens to the value of the sine and cosine of the angle?
 - Both the sine and cosine decrease.
 - Both the sine and cosine increase.
 - The sine increases and the cosine decreases.
 - The sine decreases and the cosine increases.
- Let c be a constant. The lines $2x - y = 5$ and $x - y = c$ intersect in a unique point (r, s) in the coordinate plane. In which way does increasing the value of c affect the values of r and s ?
 - The values of r and s both increase.
 - The values of r and s both decrease.
 - The value of r decreases; the value of s increases.
 - The value of r increases; the value of s decreases.
- If $\log x = a$, then $\log x^2 =$
 - $2a$
 - a^2
 - $a + \log 2$
 - $2 \log a$
- A student took five measurements of the freezing point of an unknown chemical solution. The mean of the first four measurements was -8.40°C , and the fifth measurement was -9.00°C . What was the mean of the student's five measurements of the freezing point?
 - -8.88°C
 - -8.70°C
 - -8.55°C
 - -8.52°C

Reading Comprehension

Directions: Read the following passage and then choose the best answer to each of the questions following the passage.

- 1 Neomycin is a colorless antibiotic produced by certain strains of *Streptomyces fradiae*. The antibiotic is a poly-basic, water-soluble substance. The neomycin complex consists of two isomeric substances, now recognized as neomycin B and neomycin C. Commercial neomycin is composed mainly of neomycin B and is usually in the form of a sulfate, a white amorphous powder.
 - 2 An A fraction was at first also described, but it was later found to be a degradation product. Neomycin is active against a great variety of Gram-positive cocci and rods, Gram-negative rods, and acid-fast bacteria, notably the tuberculosis organism. It is not active against anaerobic bacteria, fungi, most protozoa, rickettsiae, and viruses.
 - 3 Development of resistance to neomycin is slower than that to streptomycin. For subcutaneous injection of neomycin sulfate in mice, the LD₅₀ or dosage at which 50% of the animals died was 165–250 mg/kg. The LD₅₀ for intraperitoneal administration is about the same. Intravenously, neomycin is about five times as toxic. Orally, the LD₅₀ is greater than 2800 mg/kg.
1. The author implies that if neomycin were bought at a drugstore, it would most probably consist of a sulfate plus
 - A. neomycin A.
 - B. neomycin B.
 - C. neomycin C.
 - D. equal mixtures of neomycin B and C.
 2. The information in the passage suggests that Neomycin would probably not be effective in treating
 - A. a fungal infection such as athlete's foot.
 - B. a bacterial infection such as tuberculosis.
 - C. infections of the skin caused by rod bacteria.
 - D. infections of the skin caused by Gram-positive cocci.
 3. Neomycin is least toxic when it is given by
 - A. injection under the skin.
 - B. intraperitoneal administration.
 - C. injection into a vein.
 - D. oral administration.
 4. The author's tone in this passage is
 - A. indifferent.
 - B. sympathetic.
 - C. objective.
 - D. ironic.

Writing

Directions: The topic on which you will write is in the form of a statement that presents a problem. Your essay should present a solution to the problem presented in the statement.

Your essay should be of sufficient length to adequately explain your solution to the problem presented in the statement. In your response, you should observe the following:

- Suggest a solution to the problem presented.
- State a clear thesis and present relevant support that draws upon credible references from your academic or personal experience, reading, or studies.

- Discuss and evaluate possible alternative solutions to the one you are suggesting.
- Use appropriate and conventional grammar, punctuation, usage, and style.
- Make sure your essay is legible so it can be easily read and scored.
- Allow time to proofread your essay and make sure that any revisions you make are indicated clearly.

Problem-Solving Topic:

Discuss a solution to the problem of America's dependence on imported non-renewable fossil fuels such as oil.

Correct Answers

Verbal Ability	Biology	Chemistry	Quantitative Ability	Reading Comprehension
1. A	1. A	1. C	1. C	1. B
2. C	2. D	2. D	2. B	2. A
3. D	3. B	3. B	3. A	3. D
4. B	4. A	4. A	4. D	4. C