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Are you looking for a comprehensive study guide to help you pass the teacher certification exam the first time? Do you want a guide that is aligned with current test guidelines, one that includes the exact information without the fluff? XAMonline’s teacher certification study guides offer an easy-to-understand, in-depth review of the actual content that’s on the test. Unlike other study guides XAMonline provides the actual content, not just a list of skills and competencies or study secrets.

In addition to a thorough review, our guides include practice tests with up to 125 questions to prepare you for the actual exam. The practice tests include full answer rationales as well as skill reference and rigor for each question, allowing you to quickly flip back and review the relevant content and identify which topics to devote more study time to.

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Developed by a teacher, for teachers
Founded in 1996, XAMonline began with one teacher-in-training who was frustrated by the lack of materials available for teacher certification exam preparation. From a single state-specific guide, XAMonline has grown to offer over 300 study guides for every state exam, as well as the PRAXIS I and PRAXIS II tests.

Our comprehensive study guides offer more than just the required certification competencies and skills. Their content and structure enables you to go beyond basic skills development and rote memorization to mastery of subject matter, a necessary trait of effective teaching. The content of our PRAXIS and state-specific guides is aligned and weighted to current standards, ensuring you’re studying the right material.

Quality Content from Quality Teaching Professionals
XAMonline’s superior quality standards are maintained by seasoned, professional teachers. We choose from a pool of over 1,500 certified teachers to write, review, and edit our guides. Each certification study guide includes an extensive practice test, which features varied levels of rigor and in-depth answer rationale. Just like the study guide, the practice test questions are aligned with the current state or PRAXIS test parameters, providing you with an experience that parallels the real test.
Testing Tips

1. **Do not read anything into the question.** Do not assume that the test writer is looking for something else than what is asked. Stick to the question as written and do not read extra things into it.

2. **Read the question and all the choices twice before answering the question.** You may miss something by not carefully reading and then re-reading both the question and the answers. If you really do not have a clue as to the right answer, leave it blank on the first time through. Go on to the other questions, as they may provide a clue as to how to answer the skipped questions. If later on, you still cannot answer the skipped ones . . . **guess.** The only penalty for guessing is that you might get it wrong. Only one thing is certain; if you do not put anything down, you will get it wrong!

3. **Turn the question into a statement.** Look at the wording of the questions. The syntax of the question usually provides a clue. Does it seem more familiar as a statement rather than as a question? Does it sound strange? By turning a question into a statement, you may be able to spot if an answer sounds right, and it may trigger memories of material you have read.

4. **Look for hidden clues.** It is actually very difficult to compose multiple-foil (choice) questions without giving away part of the answer in the options presented. In most multiple-choice questions, you can often readily eliminate one or two of the potential answers. This leaves you with only two real possibilities and automatically your odds go to fifty-fifty for very little work.

5. **Trust your instincts.** For every fact that you have read, you subconsciously retain something of that knowledge. On questions about which you are not really certain, go with your basic instincts. **Your first impression on how to answer a question is usually correct.**

6. **Mark your answers directly on the test booklet.** Do not bother trying to fill in the optical scan sheet on the first pass through the test. **Mark your answers carefully when you transcribe them to the scan sheet.**

7. **Watch the clock!** You have a set amount of time to answer the questions. Do not get bogged down trying to answer a single question at the expense of ten questions you can more readily answer.
1. Identify the control in the following experiment. A student grew four plants under the following conditions and was measuring photosynthetic rate by measuring mass. 2 plants in 50% light and 2 plants in 100% light.  
(Average Rigor)  
A. plants grown with no added nutrients  
B. plants grown in the dark  
C. plants in 100% light  
D. plants in 50% light  

2. In which of the following situations would a linear extrapolation of data be appropriate?  
(Rigorous)  
A. Computing the death rate of an emerging disease  
B. Computing the number of plant species in a forest over time  
C. Computing the rate of diffusion with a constant gradient  
D. Computing the population at equilibrium  

3. Chromatography is most often associated with the separation of _____.  
(Average Rigor)  
A. nutritional elements  
B. DNA  
C. proteins  
D. plant pigments  

4. Which of the following are properties of water?  
I. High specific heat  
II. Strong ionic bonds  
III. Good solvent  
IV. High freezing point  
(Average Rigor)  
A. I, III, IV  
B. II and III  
C. I and II  
D. II, III, IV  

5. Negatively charged particles that circle the nucleus of an atom are called _____.  
(Easy)  
A. neutrons  
B. neutrinos  
C. electrons  
D. protons
6. Identify this stage of mitosis.  

(Average Rigor)  

A. anaphase  
B. metaphase  
C. telophase  
D. prophase  

7. Which of the follow is not true of both chloroplasts and mitochondria?  
(Easy)  

A. use of the inner membrane for most of it's activity  
B. converts energy from one form to another  
C. uses an electron transport chain  
D. is an important part of the carbon cycle  

8. A type of molecule not found in the membrane of an animal cell is  
(Rigorous)  

A. phospholipid  
B. protein  
C. cellulose  
D. cholesterol  

9. DNA synthesis results in a strand that is synthesized continuously. This is the  
(Average Rigor)  

A. lagging strand  
B. leading strand  
C. template strand  
D. complementary strand  

10. Viruses are made of _____.  
(Easy)  

A. a protein coat surrounding a nucleic acid.  
B. DNA, RNA, and a cell wall.  
C. a nucleic acid surrounding a protein coat.  
D. protein surrounded by DNA.
11. A DNA molecule has the sequence of ACTATG. What is the anticodon of this molecule? (Rigorous)

A. UGAUAC  
B. ACUAUG  
C. TGATAC  
D. ACTATG  

12. ATP is known to bind to phosphofructokinase-1 (an enzyme that is part of glycolysis). This happens as ATP levels and results in a change in the shape of the enzyme causing the rate of ATP production to fall. Which answer best explores what has happened? (Rigorous)

A. binding of a coenzyme  
B. an allosteric change in the enzyme  
C. competitive inhibition  
D. uncompetitive inhibition  

13. The Law of Segregation defined by Mendel states (Average Rigor)

A. when sex cells form, the two alleles that determine a trait will end up on different gametes.  
B. only one of two alleles is expressed in a heterozygous organism.  
C. the allele expressed is the dominant allele.  
D. alleles of one trait do not affect the inheritance of alleles on another chromosome.  

14. Which of the following factors will affect the Hardy-Weinberg law of equilibrium, leading to evolutionary change? (Average Rigor)

A. no mutations  
B. non-random mating  
C. no immigration or emigration  
D. large population
15. The two major ways to determine taxonomic classification are: *(Average Rigor) (4.1)*

A. evolution and phylogeny  
B. reproductive success and evolution  
C. phylogeny and morphology  
D. size and color  

16. Identify the correct characteristics for the plant pictured above. *(Rigorous)*

A. seeded, non-vascular  
B. non-seeded, vascular  
C. non-seeded, non-vascular  
D. seeded, vascular  

17. Which of the following is not a factor that effects the rate of both photosynthesis and respiration in plants? *(Average Rigor)*

A. the concentration of NADP and FAD  
B. the temperature  
C. the structure of the plants  
D. the availability of the different substrates  

18. The process in which pollen grains are released from the anthers is called: *(Easy)*

A. pollination  
B. fertilization  
C. blooming  
D. dispersal
19. Oxygen is given off in the:
*(Easy)*

A. light reactions of photosynthesis
B. dark reactions of photosynthesis
C. Krebs cycle
D. reduction of NAD+ to NADH

20. Which of the following is not an used by a young cactus to survive in an arid environment?
*(Rigorous)*

A. Stem as the principle site of photosynthesis.
B. A deep root system to get at sources of groundwater.
C. CAM cycle photosynthesis.
D. Spherical growth form.

21. Which is the correct sequence of embryonic development in a frog?
*(Average Rigor)*

A. cleavage – blastula – gastrula
B. cleavage – gastrula – blastula
C. blastula – cleavage – gastrula
D. gastrula – blastula – cleavage

22. Which of the following compounds is not needed for skeletal muscle contraction to occur?
*(Rigorous)*

A. glucose
B. sodium
C. acetylcholine
D. Adenosine 5'-triphosphate

23. Capillaries come into contact with a very large surface of both the kidneys and the lungs, especially in relation to the volume of these organs. Which of the following is not consistent with both organs and their contact with capillaries.
*(Rigorous)*

A. small specialized sections of each organ
B. A large branching system of tubes within the organ
C. A large source of blood that is quick divided into capillaries
D. A sack that contains a capillary network
24. All of the following are density dependent factors that affect a population except (Rigorous)

A. disease
B. drought
C. predation
D. migration

25. A clownfish is protected by the sea anemone’s tentacles. In turn, the anemone receives uneaten food from the clownfish. This is an example of (Easy)

A. mutualism
B. parasitism
C. commensalisms
D. competition

26. All of the following gasses made up the primitive atmosphere except... (Average Rigor)

A. ammonia
B. methane
C. oxygen
D. hydrogen

27. Which of the following is not an abiotic factor? (Easy)

A. temperature
B. rainfall
C. soil quality
D. bacteria

28. Which biogeochemical cycle plays the least part in photosynthesis or cellular respiration? (Rigorous)

A. Hydrogen Cycle
B. Phosphorous Cycle
C. Sulphur Cycle
D. Nitrogen Cycle
29. Genetic engineering has benefited agriculture in many ways. Which of the following is not one of them? (Average Rigor)

A. Developing a bovine growth hormone to increase milk production.

B. Strains of crops have been developed to resist herbicides.

C. The development of micro-organisms to breakdown toxic substances into harmless compounds.

D. Genetically vaccinating plants against viral attack.

30. The three main concerns in nonrenewable resource management are conservation, environmental mitigation, and ___________. (Rigorous)

A. Preservation

B. Extraction

C. Allocation

D. Sustainability
Answer Key

1. C
2. C
3. D.
4. A
5. C.
6. B.
7. A.
8. C
9. B
10. A.
11. B
12. B
13. A
14. B
15. C.
16. B
17. C
18. A
19. A
20. B
21. A
22. A
23. D
24. B
25. A
26. C
27. D
28. C
29. C
30. C