

The background is a collage of four quadrants. The top-left quadrant shows a stack of papers on a purple background. The top-right quadrant shows a clock face on a pink background. The bottom-left quadrant shows a stack of papers on a green background. The bottom-right quadrant shows a clock face on a yellow background. A large black-bordered box with a white background is centered over the top two quadrants, containing the title. A smaller black-bordered box with a white background is centered over the bottom two quadrants, containing the event details.

Item Writing Workshop

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Sampling

- Performance on the sample provides a basis for estimating achievement in a domain of interest
- Amount of attention given to evaluating something should reflect its relative importance
- Should sample skills and topics

General tips for sampling

- Exam content should match module objectives
- Important topics should be weighted more heavily than less important topics
- The sample of items should be representative of the instructional goals





Is the sample valid and reliable?

- If a sample is too small it may not be precise (reliable)
- Validity is assured by specifying the nature and/or number of items prior to selecting and writing the items.
- Comprehensive basic science exam will validate the course and item content



How can you ensure a representative sample of content and cognitive objectives?

- Table of specifications or a blueprint

	Knowledge	Understand	Application	Analysis	Synthesis	Evaluation
Content / skills						
Content / skills						

Example

Content (%)	Knowledge	Comprehension	Application	Total (%)
Physical Properties	8	6	6	20
Chemical Properties	12	9	9	30
Preparation	4	3	3	10
Uses	16	12	12	40
Total	40	30	30	100

Example: Table of specifications for a chemistry unit test on oxygen





Technical Flaws

Grammatical

A 60-year-old man is brought to the emergency department by the police, who found him lying unconscious on the sidewalk. After ascertaining that the airway is open, the first step in management should be intravenous administration of

- A. Examination of cerebrospinal fluid
- B. Glucose with vitamin B₁ (thiamine)
- C. Ct Scan of the head
- D. Phenytoin
- E. Diazepam



Logical Cues

Crime is

- A. equally distributed among the social classes
- B. overrepresented among the poor
- C. overrepresented among the middle class and rich
- D. primarily an indication of psychosexual maladjustment
- E. reaching a plateau of tolerability for the nation



Absolute terms

***In patients with advanced dementia,
Alzheimer's type, the memory defect***

- A. can be treated adequately with phosphatidylcholine(lecithin)
- B. could be a sequela of early parkinsonism
- C. is never seen in patients with neurofibrillary tangles at autopsy
- D. is never severe
- E. possibly involves the cholinergic system



Long Correct Answer

Secondary gain is

- A. Synonymous with malingering
- B. A frequent problem in obsessive-compulsive disorder
- C. A complication of a variety of illnesses and tends to prolong many of them
- D. Never seen in organic brain damage



Word Repeats

A 58-year-old man with a history of heavy alcohol use and previous psychiatric hospitalization is confused and agitated. He speaks of experiencing the world as unreal. This symptom is called

- A. Depersonalization
- B. Derailment
- C. Derealization
- D. Focal memory deficit
- E. Signal anxiety



Convergence Strategy

Local anesthetics are most effective in the

- A. Anionic form, acting from inside the nerve membrane
- B. Cationic form, acting from inside the nerve membrane
- C. Cationic form, acting from outside the nerve membrane
- D. Uncharged form, acting from inside the nerve membrane
- E. Uncharged form, acting from outside the nerve membrane





“Stacking the Deck” Against the Student”



Issues Related to Irrelevant Difficulty

Peer review committees in HMOs may move to take action against a physician's credentials to care for participants of the HMO. There is an associated requirement to assure that the physician receives due process in the course of these activities. Due process must include which of the following?

- A. Notice, an impartial forum, council, a chance to hear and confront evidence against him/her
- B. Proper notice, a tribunal empowered to make the decision, a chance to confront witnesses against him/her, and a chance to present evidence in defense
- C. Reasonable and timely notice, impartial panel empowered to make a decision, a chance to hear evidence against himself/herself and to confront witnesses, and the ability to present evidence in defense



Numeric Data are Not Stated Consistently

Following a second episode of infection, what is the likelihood that a woman is infertile?

- A. Less than 20%
- B. 20 to 30%
- C. Greater than 50%
- D. 90%
- E. 75%

Frequency Terms are Vague

Severe obesity in early adolescence

- A. Usually responds dramatically to dietary regimens
- B. Often is related to endocrine disorders
- C. Has a 75% chance of clearing spontaneously
- D. Shows a poor prognosis
- E. Usually responds to pharmacotherapy and intensive psychotherapy





Language in the Options is Not Parallel; Options in Illogical Order

In a vaccine trial, 200, 2-year-old boys were given a vaccine against a certain disease and then monitored for five years for occurrence of the disease. Of this group, 85% never contracted the disease. Which of the following statements concerning these results is correct?

- A. No conclusion can be drawn since no follow-up was made of nonvaccinated children
- B. The number of cases (i.e., 30 cases over five years) is too small for statistically meaningful conclusions
- C. No conclusions can be drawn because the trial involved only boys
- D. Vaccine efficacy (%) is calculated as $85 - 15/100$



“None of the Above” is an Option

Which city is closest to New York City?

- A. Boston
- B. Chicago
- C. Dallas
- D. Los Angeles
- E. None of the above

Stems are Tricky or Unnecessarily Complicated

Arrange the parents of the following children with Down's syndrome in order of highest to lowest risk of recurrence. Assume that the maternal age in all cases is 22 years and that a subsequent pregnancy occurs within 5 years. The karyotypes of the daughters are:

I: 46, XX, -14, +T (14q21q) pat

II: 46, XX, -14, +T (14q21q) de novo

III: 46, XX, -14, +T (14q21q) mat

IV: 46, XX, -21, +T (14q21q) pat

V: 47, XX, -21, +T (21q21q) (parents not karyotyped)

A. III, IV, I, V, II

B. IV, III, V, I, II

C. III, I, IV, V, II

D. IV, III, I, V, II

E. III, IV, I, II, V

Five Rules of Thumb for Developing A-Type Questions

- Focus items on an important concept, typically a common or potentially catastrophic clinical problem
- Structure clinical vignettes as case presentations
- The stem must pose a clear question, and it should be possible to arrive at an answer with the options covered
- All distractors should be homogeneous
- Avoid using “double options” (do W and X; do Y because of Z)





Case Clusters – Ideal for PBL and Integrated Curriculum

A 34-year-old woman has had severe watery diarrhea for the past four days. Two months earlier she had infectious mononucleosis. She abuses drugs intravenously and has antibodies to HIV in her blood. Physical examination shows dehydration and marked muscle weakness. Laboratory studies are most likely to show

- A. decreased serum K^+ concentration
- B. decreased serum Ca^{2+} concentration
- C. increased serum HCO_3^- concentration
- *D. increased serum Na^+ concentration
- E. increased serum pH



2. In evaluating the cause of the diarrhea, which of the following is most appropriate?

A. Colonic biopsy to identify *Giardia lamblia*

B. Culture of the oral cavity for *Candida albicans*

C. Duodenal biopsy to identify *Entamoeba histolytica*

D. Gastric aspirate to identify *Mycobacterium avium-intracellulare*

*E. Stool specimen to identify *Cryptosporidium*



3. Further studies to evaluate her HIV infection show the ratio of helper T lymphocytes to suppressor T lymphocytes to be 0.3. This occurs because HIV

A. induces proliferation of helper T lymphocytes

B. induces proliferation of suppressor T lymphocytes

*C. infects cells with CD4 receptors

D. infects macrophages

E. stimulates the synthesis of leukotrienes

References

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