

Varcarolis: Foundations of Psychiatric Mental Health Nursing, 6th Edition

Chapter 03: Biological Basis for Understanding Psychotropic Drugs

Test Bank

MULTIPLE CHOICE

1. A patient asks, “What are neurotransmitters? The doctor said mine are imbalanced.” Select the nurse’s best response.
 - a. “How do you feel about having imbalanced neurotransmitters?”
 - b. “You must feel relieved to know that your problem has a physical basis.”
 - c. “Neurotransmitters are substances we eat daily that influence memory and mood.”
 - d. “Neurotransmitters are natural chemicals that pass messages between brain cells.”

ANS: D

The patient asked for information, and the correct response is most accurate.

Neurotransmitters are chemical substances that function as messengers in the central nervous system. They are released from the axon terminal, diffuse across the synapse, and attach to specialized receptors on the postsynaptic neuron. The distracters either do not answer the patient’s question or provide untrue, misleading information.

DIF: Cognitive Level: Application

REF: Text Page: 49

TOP: Nursing Process: Implementation

MSC: Client Needs: Physiological Integrity

2. The parent of an adolescent with schizophrenia asks the nurse, “My child’s doctor ordered a PET. What kind of test is that?” Select the nurse’s best reply.
 - a. “This test uses a magnetic field and gamma waves to identify problem areas in the brain. Does your teenager have any metal implants?”
 - b. “PET means *positron-emission tomography*. An injection is given and images are taken. It shows blood flow and activity in the brain.”
 - c. “A PET scan passes an electrical current through the brain and shows brain-wave activity. It can help diagnose seizures.”
 - d. “It’s a special type of x-ray that shows structures of the brain and whether there has ever been a brain injury.”

ANS: B

The parent is seeking information about PET scans. It is important to use terms the parent can understand, so the nurse should identify what the initials mean. The correct response is the only option that provides information relevant to PET scans. The distracters describe MRI, CT scans, and EEG.

DIF: Cognitive Level: Application

REF: Text Pages: 55-58

TOP: Nursing Process: Implementation

MSC: Client Needs: Physiological Integrity

3. A patient with a long history of hypertension and diabetes now develops confusion. The health care provider wants to make a differential diagnosis between Alzheimer's disease or multiple infarcts. Which diagnostic procedure should the nurse expect to prepare the patient for first?
- PET
 - Skull x-rays
 - Computed tomography (CT) scan
 - Single-photon emission computed tomography (SPECT)

ANS: C

A CT scan shows the presence or absence of structural changes, including cortical atrophy, ventricular enlargement, and areas of infarct, information that would be helpful to the health care provider. PET and SPECT show brain activity rather than structure and may be completed later.

DIF: Cognitive Level: Analysis

REF: Text Pages: 55-58

TOP: Nursing Process: Planning

MSC: Client Needs: Physiological Integrity

4. A patient has delusions and hallucinations. The health care provider wishes to rule out the presence of a brain tumor. For which test will the nurse need to prepare the patient?
- PET
 - MRI
 - SPECT
 - Cerebral arteriogram

ANS: B

CT scans and MRIs visualize neoplasms and other structural abnormalities. A scan giving information about brain function (PET) is not indicated. An arteriogram would not provide the needed information.

DIF: Cognitive Level: Application

REF: Text Pages: 55-58

TOP: Nursing Process: Planning

MSC: Client Needs: Physiological Integrity

5. The nurse wants to assess a patient with major depression for disturbances in circadian rhythms. Select the best question for this aspect of the assessment.
- "Have you ever seen or heard things that others do not?"
 - "What are your worst and best times of day?"
 - "How would you describe your thinking?"
 - "Do you think your memory is failing?"

ANS: B

Mood changes throughout the day may be related to circadian rhythm disturbances. Questions about sleep pattern are also relevant to circadian rhythms. The distracters apply to assessment for illusions and hallucinations, thought processes, and memory.

DIF: Cognitive Level: Application

REF: Text Page: 48

TOP: Nursing Process: Assessment

MSC: Client Needs: Psychosocial Integrity

6. The nurse administers a medication that potentiates the action of GABA. Which effect would be expected?
- a. Reduced anxiety
 - b. Improved memory
 - c. More organized thinking
 - d. Fewer sensory perceptual alterations

ANS: A

Increased levels of GABA reduce anxiety. Acetylcholine and substance P are associated with memory enhancement. Thought disorganization is associated with dopamine. GABA is not associated with sensory perceptual alterations.

DIF: Cognitive Level: Application

REF: Text Pages: 58-59

TOP: Nursing Process: Evaluation

MSC: Client Needs: Physiological Integrity

7. A nurse could anticipate that treatment for a patient with memory difficulties might include medications designed to:
- a. inhibit GABA.
 - b. increase dopamine activity.
 - c. reduce neurotensin metabolism.
 - d. prevent destruction of acetylcholine.

ANS: D

Increased acetylcholine plays a role in learning and memory. Preventing destruction of acetylcholine by acetylcholinesterase would result in higher levels of acetylcholine, with the potential for improved memory. GABA affects anxiety rather than memory. Increased dopamine would cause symptoms associated with schizophrenia or mania rather than improve memory. Decreasing dopamine at receptor sites is associated with Parkinson's disease rather than improving memory.

DIF: Cognitive Level: Application

REF: Text Pages: 50-51

TOP: Nursing Process: Planning

MSC: Client Needs: Physiological Integrity

8. A patient has disorganized thinking associated with schizophrenia. Neuroimaging would most likely show dysfunction in which part of the brain?
- a. Hippocampus
 - b. Frontal lobe
 - c. Cerebellum
 - d. Brainstem

ANS: B

The frontal lobe is responsible for intellectual functioning. The hippocampus is involved in emotions and learning. The cerebellum regulates skeletal muscle coordination and equilibrium. The brainstem regulates internal organs.

DIF: Cognitive Level: Application
TOP: Nursing Process: Assessment

REF: Text Pages: 54, 56
MSC: Client Needs: Physiological Integrity

9. The nurse should assess a patient taking a drug with anticholinergic properties for inhibited function of the:
- parasympathetic nervous system.
 - sympathetic nervous system.
 - reticular activating system.
 - medulla oblongata.

ANS: A

Acetylcholine is the neurotransmitter found in high concentration in the parasympathetic nervous system. When acetylcholine action is inhibited by anticholinergic drugs, parasympathetic symptoms such as blurred vision, dry mouth, constipation, and urinary retention appear.

DIF: Cognitive Level: Comprehension
TOP: Nursing Process: Assessment

REF: Text Page: 51
MSC: Client Needs: Physiological Integrity

10. The therapeutic action of neurotransmitter inhibitors that block reuptake cause:
- decreased concentration of the neurotransmitter in the central nervous system.
 - increased concentration of neurotransmitter in the synaptic gap.
 - destruction of receptor sites.
 - limbic system stimulation.

ANS: B

If the reuptake of a substance is inhibited, it accumulates in the synaptic gap and its concentration increases, permitting ease of transmission of impulses across the synaptic gap. Normal transmission of impulses across synaptic gaps is consistent with normal rather than depressed mood. The other options are not associated with blocking neurotransmitter reuptake.

DIF: Cognitive Level: Comprehension
TOP: Nursing Process: Implementation

REF: Text Page: 52
MSC: Client Needs: Physiological Integrity

11. A patient taking medication for mental illness develops restlessness and an uncontrollable need to be in motion. The nurse analyzes that these symptoms relate to which drug action?
- Anticholinergic effects
 - Dopamine-blocking effects
 - Endocrine-stimulating effects
 - Ability to stimulate spinal nerves

ANS: B

Medication that blocks dopamine often produces disturbances of movement such as akathisia, because dopamine affects neurons involved in both thought processes and movement

regulation. Anticholinergic effects include dry mouth, blurred vision, urinary retention, and constipation. Akathisia is not caused by endocrine stimulation or spinal nerve stimulation.

DIF: Cognitive Level: Application

REF: Text Pages: 68-70

TOP: Nursing Process: Assessment

MSC: Client Needs: Physiological Integrity

12. A nurse assesses that a patient has fear as well as increased heart rate and blood pressure. The nurse suspects increased activity of which neurotransmitter?

- a. GABA
- b. Histamine
- c. Acetylcholine.
- d. Norepinephrine

ANS: D

Norepinephrine is the neurotransmitter associated with sympathetic nervous system stimulation, preparing the individual for “fight or flight.” GABA is a mediator of anxiety level. A high concentration of histamine is associated with an inflammatory response. A high concentration of acetylcholine is associated with parasympathetic nervous system stimulation.

DIF: Cognitive Level: Application

REF: Text Pages: 48, 50

TOP: Nursing Process: Assessment

MSC: Client Needs: Physiological Integrity

13. A patient has acute anxiety related to an automobile accident 2 hours ago. The patient needs teaching about drugs from which group?

- a. Tricyclic antidepressants
- b. Antipsychotic drugs
- c. Antimanic drugs
- d. Benzodiazepines

ANS: D

Benzodiazepines provide anxiety relief. Tricyclic antidepressants are used to treat symptoms of depression. Antimania drugs are used to treat bipolar disorder. Antipsychotic drugs are used to treat psychosis.

DIF: Cognitive Level: Comprehension

REF: Text Page: 61

TOP: Nursing Process: Planning

MSC: Client Needs: Physiological Integrity

14. A patient is hospitalized for severe depression. Of the medications listed below, the nurse can expect to provide the patient with teaching about:

- a. clordiazepoxide (Librium).
- b. clozapine (Clozaril).
- c. sertraline (Zoloft).
- d. tacrine (Cognex).

ANS: C

Sertraline (Zoloft) is an SSRI. This antidepressant blocks the reuptake of serotonin, with few

anticholinergic and sedating side effects. Clozapine is an antipsychotic. Chlordiazepoxide is an anxiolytic. Tacrine treats Alzheimer's disease.

DIF: Cognitive Level: Comprehension REF: Text Page: 55
TOP: Nursing Process: Planning MSC: Client Needs: Physiological Integrity

15. A patient with bipolar disorder has an unstable mood, aggressiveness, agitation, talkativeness, and irritability. The nurse begins care planning based on the expectation that the health care provider is most likely to prescribe a medication classified as a(n):
- anticholinergic.
 - mood stabilizer.
 - psychostimulant.
 - antidepressant.

ANS: B

The symptoms describe mania, which is effectively treated by mood stabilizers such as lithium and selected anticonvulsants (carbamazepine, valproic acid, and lamotrigine). Drugs from the other classifications listed are not effective in the treatment of mania.

DIF: Cognitive Level: Application REF: Text Pages: 66-69
TOP: Nursing Process: Planning MSC: Client Needs: Physiological Integrity

16. A drug causes muscarinic receptor blockade. The nurse will assess the patient for
- dry mouth.
 - gynecomastia.
 - pseudoparkinsonism.
 - orthostatic hypotension.

ANS: A

Muscarinic receptor blockade includes atropine-like side effects such as dry mouth, blurred vision, and constipation. Gynecomastia is associated with decreased prolactin levels. Movement defects are associated with dopamine blockade. Orthostatic hypotension is associated with α_1 antagonism.

DIF: Cognitive Level: Application REF: Text Pages: 48, 50
TOP: Nursing Process: Assessment MSC: Client Needs: Physiological Integrity

17. A patient begins therapy with a phenothiazine medication. What teaching should the nurse provide related to the drug's strong dopaminergic effect?
- Chew sugarless gum
 - Increase dietary fiber
 - Arise slowly from bed
 - Report muscle stiffness

ANS: D

Phenothiazines block dopamine receptors in both the limbic system and basal ganglia. A movement disorder such as dystonia is likely to occur early in the course of treatment and is

often heralded by sensations of muscle stiffness. Early intervention with antiparkinsonian medication can increase the patient's comfort and prevent dystonic reactions.

DIF: Cognitive Level: Application REF: Text Pages: 68-69
TOP: Nursing Process: Implementation MSC: Client Needs: Physiological Integrity

18. A patient tells the nurse, "My doctor prescribed Paxil (paroxetine) for my depression. I assume I'll have side effects like I had when I was taking Tofranil (imipramine)." The nurse's reply should be based on the knowledge that paroxetine is a:
- selective norepinephrine reuptake inhibitor.
 - tricyclic antidepressant.
 - MAO inhibitor.
 - SSRI.

ANS: A

Paroxetine is an SSRI and will not produce the same side effects as imipramine, a tricyclic antidepressant. The patient will probably not experience dry mouth, constipation, or orthostatic hypotension.

DIF: Cognitive Level: Comprehension REF: Text Page: 64
TOP: Nursing Process: Implementation MSC: Client Needs: Physiological Integrity

19. A nurse can anticipate anticholinergic side effects are likely when a patient takes:
- lithium (Lithobid).
 - buspirone (BuSpar).
 - risperidone (Risperdal).
 - fluphenazine (Prolixin).

ANS: D

Fluphenazine, a conventional antipsychotic, exerts muscarinic blockade, resulting in dry mouth, blurred vision, constipation, and urinary retention. Lithium therapy is more often associated with fluid-balance problems, including polydipsia, polyuria, and edema. Risperidone therapy is more often associated with movement disorders, orthostatic hypotension, and sedation. Buspirone is associated with anxiety reduction without major side effects.

DIF: Cognitive Level: Application REF: Text Pages: 68-69
TOP: Nursing Process: Planning MSC: Client Needs: Physiological Integrity

20. Which instruction has priority when teaching a patient taking clozapine (Clozaril)?
- "Avoid unprotected sex."
 - "Report sore throat and fever immediately."
 - "Reduce foods high in polyunsaturated fats."
 - "Use over-the-counter preparations for rashes."

ANS: B

Clozapine therapy may produce agranulocytosis; therefore, signs of infection should be immediately reported to the health care provider. In addition, the patient should have white blood cell levels measured weekly. The other options are not relevant to clozapine administration.

DIF: Cognitive Level: Application

REF: Text Page: 70

TOP: Nursing Process: Planning

MSC: Client Needs: Physiological Integrity

21. A nurse cares for patients taking various medications, including buspirone (BuSpar), haloperidol (Haldol), carbamazepine (Tegretol), trazodone (Desyrel), and phenelzine (Nardil). The nurse will order a special diet for the patient who takes:
- buspirone.
 - haloperidol.
 - carbamazepine.
 - trazodone.
 - phenelzine.

ANS: E

Patients taking phenelzine, an MAO inhibitor, must be on a low tyramine diet to prevent hypertensive crisis.

DIF: Cognitive Level: Application

REF: Text Pages: 65-66

TOP: Nursing Process: Planning

MSC: Client Needs: Physiological Integrity

22. A nurse instructs a patient taking a drug that inhibits monoamine oxidase (MAO) to avoid certain foods and drugs because of the risk of:
- cardiac dysrhythmia.
 - hypotensive shock.
 - hypertensive crisis.
 - cardiogenic shock.

ANS: C

Patients taking MAO-inhibiting drugs must be on a low tyramine diet to prevent hypertensive crisis. In the presence of MAO inhibitors, tyramine is not destroyed by the liver and in high levels produces intense vasoconstriction, resulting in elevated blood pressure.

DIF: Cognitive Level: Application

REF: Text Pages: 65-66

TOP: Nursing Process: Implementation

MSC: Client Needs: Physiological Integrity

23. A nurse caring for a patient taking an SSRI will develop outcome criteria related to:
- mood improvement.
 - coherent thought processes.
 - reduced levels of motor activity.
 - decreased extrapyramidal symptoms.

ANS: A

SSRIs affect mood, relieving depression in many cases. SSRIs do not act to reduce thought disorders. SSRIs reduce depression but have little effect on motor hyperactivity. SSRIs do not produce extrapyramidal symptoms.

DIF: Cognitive Level: Application
TOP: Nursing Process: Planning

REF: Text Pages: 64-65
MSC: Client Needs: Physiological Integrity

24. SSRIs improve depression by which action? SSRIs:
- destroy increased amounts of serotonin.
 - block muscarinic and α_1 norepinephrine receptors.
 - make more serotonin available at the synaptic gap.
 - increase production of acetylcholine and dopamine.

ANS: C

Depression is thought to be related to lowered availability of the neurotransmitter serotonin. SSRIs act by blocking reuptake of serotonin, leaving a higher concentration available at the synaptic cleft. SSRIs prevent destruction of serotonin. SSRIs have little or no effect on acetylcholine and dopamine production. SSRIs do not produce muscarinic or α_1 norepinephrine blockade.

DIF: Cognitive Level: Comprehension
TOP: Nursing Process: Implementation

REF: Text Page: 65
MSC: Client Needs: Physiological Integrity

25. The laboratory report for a patient taking clozapine (Clozaril) shows a white blood cell count of 3000 mm^3 . Select the nurse's best action.
- Report these results to the health care provider immediately.
 - Give the next dose as prescribed.
 - Give aspirin and force fluids.
 - Repeat the laboratory test.

ANS: A

These laboratory values indicate the possibility of agranulocytosis, a serious side effect of clozapine therapy. These results must be immediately reported to the health care provider, and the drug should be withheld. The health care provider may repeat the test, but in the meantime, the drug should be withheld.

DIF: Cognitive Level: Analysis
TOP: Nursing Process: Implementation

REF: Text Page: 70
MSC: Client Needs: Physiological Integrity

26. A drug blocks the attachment of norepinephrine to α_1 receptors. The patient may experience:
- hypertensive crisis.
 - orthostatic hypotension.
 - severe appetite disturbance.
 - an increase in psychotic symptoms.

ANS: B

Sympathetic-mediated vasoconstriction is essential for maintaining normal blood pressure in the upright position. Blockage of α_1 receptors leads to vasodilation and orthostatic hypotension. Orthostatic hypotension may cause fainting and falls. Teach patients ways of minimizing this phenomenon.

DIF: Cognitive Level: Application

REF: Text Pages: 47-48

TOP: Nursing Process: Implementation

MSC: Client Needs: Physiological Integrity

27. A nurse cares for four patients who are receiving clozapine, lithium, fluoxetine, and venlafaxine, respectively. With which patient should the nurse be most alert for alterations in cardiac or cerebral electrical conductivity and fluid and electrolyte imbalance? The patient receiving:
- lithium (Lithobid).
 - clozapine (Clozaril).
 - fluoxetine (Prozac).
 - venlafaxine (Effexor).

ANS: A

Lithium is known to alter electrical conductivity, producing cardiac dysrhythmias, tremor, convulsions, polyuria, edema, and other symptoms of fluid and electrolyte imbalance. Patients receiving clozapine should be monitored for agranulocytosis. Patients receiving fluoxetine should be monitored for acetylcholine block. Patients receiving venlafaxine should be monitored for heightened feelings of anxiety.

DIF: Cognitive Level: Application

REF: Text Pages: 66-67

TOP: Nursing Process: Assessment

MSC: Client Needs: Physiological Integrity

28. An obese patient has schizophrenia. Medications that block which receptors would contribute to further weight gain?
- H₁
 - 5 HT₂
 - GABA
 - Acetylcholine

ANS: A

H₁ receptor blockade results in weight gain, which is undesirable for an obese patient. Blocking of the other receptors would have little or no effect on the patient's weight.

DIF: Cognitive Level: Application

REF: Text Page: 69

TOP: Nursing Process: Planning

MSC: Client Needs: Physiological Integrity

29. A category 5 hurricane is approaching. Which change in an individual's vital signs is most likely?
- Pulse rate changes from 90 to 72
 - Pupil size changes from 6 mm to 4 mm

- c. Complaints of *intestinal cramping* begin
- d. Blood pressure changes from 114/62 to 136/78

ANS: D

This frightening experience would stimulate the sympathetic nervous system, causing a release of norepinephrine, an excitatory neurotransmitter. It prepares the body for fight or flight. Increased blood pressure, pupil size, and pulse rate signify release of norepinephrine. Intestinal cramping would be associated with stimulation of the parasympathetic nervous system.

DIF: Cognitive Level: Analysis

REF: Text Pages: 47-48

TOP: Nursing Process: Assessment

MSC: Client Needs: Physiological Integrity

30. Consider these medications: carbamazepine (Tegretol), lamotrigine (Lamictal), gabapentin (Neurontin). Which medication below also belongs with this group?
- a. Galantamine (Reminyl)
 - b. Valproate (Depakote)
 - c. Buspirone (BuSpar)
 - d. Tacrine (Cognex)

ANS: B

The medications listed in the stem are mood stabilizers, anticonvulsant types. Valproate (Depakote) is also a member of this group. The distracters are drugs for treatment of Alzheimer's disease and anxiety.

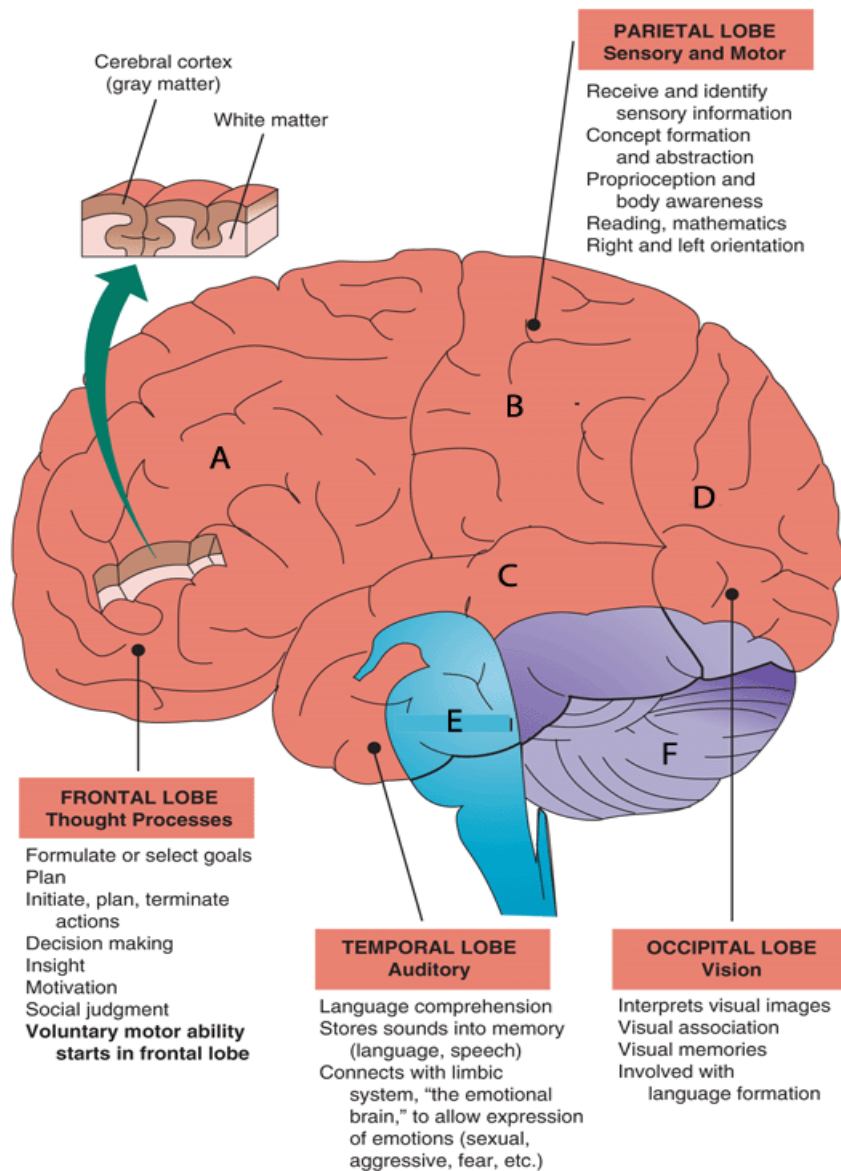
DIF: Cognitive Level: Analysis

REF: Text Pages: 67-68

TOP: Nursing Process: Assessment

MSC: Client Needs: Physiological Integrity

31. A patient has difficulty with mathematical calculations. Which area of the brain is most likely involved with this problem?



- frontal lobe
- parietal lobe
- temporal lobe
- occipital lobe
- brainstem
- cerebellum

ANS: B

The parietal lobe is involved with mathematical calculations, as well as proprioception and sensory information.

DIF: Cognitive Level: Comprehension

REF: Text Page: 54

TOP: Nursing Process: Assessment

MSC: Client Needs: Physiological Integrity

MULTIPLE RESPONSE

1. A nurse prepares to administer antipsychotic medication to a patient with schizophrenia. Additional monitoring for adverse effects will be most important if the patient is also has which health problem? *Select all that apply.*
- a. Diabetes
 - b. Parkinson's disease
 - c. Osteoarthritis
 - d. Grave's disease
 - e. Epilepsy

ANS: A, B, E

Antipsychotic medications may produce weight gain, which would complicate care of a patient with diabetes and/or lower the seizure threshold, which would complicate care of a patient with epilepsy. Parkinson's disease involves changes in transmission of dopamine and acetylcholine, so these drugs would also complicate care of this patient. Osteoarthritis and Grave's disease should have no synergistic effect with this medication.

DIF: Cognitive Level: Analysis
TOP: Nursing Process: Planning

REF: Text Page: 69
MSC: Client Needs: Physiological Integrity

2. Questions that would be nonjudgmental when obtaining information about patient use of herbal remedies include: *Select all that apply.*
- a. "You don't regularly take herbal remedies, do you?"
 - b. "What herbal medicines have you used to relieve your symptoms?"
 - c. "What over-the-counter medicines and nutritional supplements do you use?"
 - d. "Have you experienced toxic effects from mixing herbals and prescription drugs?"
 - e. "What differences in your symptoms do you notice when you take herbal supplements?"

ANS: B, C, D, E

The correct responses are neutral in tone and do not express bias for or against the use of herbal medicines. The distracter, worded in a negative way, makes the nurse's bias plain.

DIF: Cognitive Level: Application
TOP: Nursing Process: Assessment

REF: Text Page: 72
MSC: Client Needs: Psychosocial Integrity

3. An individual is experiencing problems with memory. Which of these structures are most likely to be involved in this deficit? *Select all that apply.*
- a. Amygdala
 - b. Hippocampus
 - c. Occipital lobe
 - d. Temporal lobe
 - e. Basal ganglia

ANS: A, B, D

The frontal, parietal, and temporal lobes of the cerebrum play a key role in the storage and processing of memories. The amygdala and hippocampus also play roles in memory. The occipital lobe is predominantly involved with vision. The basal ganglia influence integration of physical movement, as well as some thoughts and emotions.

DIF: Cognitive Level: Comprehension

REF: Text Pages: 54-55

TOP: Nursing Process: Planning

MSC: Client Needs: Physiological Integrity

OTHER

1. Correctly sequence these structures of the brainstem, beginning with the most superior.

A. Pons

B. Midbrain

C. Medulla oblongata

ANS:

1. B

2. A

3. C

The brainstem is composed of the midbrain, pons, and medulla oblongata.

DIF: Cognitive Level: Comprehension

REF: Text Page: 53

TOP: Nursing Process: Assessment

MSC: Client Needs: Physiological Integrity