Biomed 370

Final Exam

May 9, 2005

Instructions:

1. There are 90 multiple-choice questions.
2. Each has one best answer.
3. Pick it.
1. Which of the following is true regarding smoking cessation treatment in primary care settings?

   A. Buspirone (Buspar) is more effective than the nicotine patch.
   B. The nicotine nasal spray is emerging as the replacement treatment of choice.
   C. All medication interventions have limited effectiveness.
   D. Serotonin reuptake inhibitors (SSRIs) are highly efficacious for this disorder.

2. A 54-year-old male is admitted to the hospital following a motor vehicle accident for repair of a femur fracture. Approximately 10 hours following admission, the patient begins experiencing facial flushing, mild confusion, and then experiences a seizure. True statements regarding this patient include the following:

   A. His symptoms are likely to be the result of a posttraumatic stress disorder
   B. Further progression of his symptoms can be fatal
   C. The patient is likely experiencing alcoholic hallucinosis
   D. His condition is related to infarction of the mammillary bodies

3. Freudian analysts use their own response to a patient as a tool to help the analyst evaluate the patient’s psychological problem. This is an example of:

   A. Free association
   B. Gestalt
   C. Countertransference
   D. Resistance
   E. Rational-emotional role-playing

4. The patient presents saying that she wants to see you because she needs a new doctor. She explains that her last doctor “was a jerk who didn’t understand me.” She says that she can tell, “that you are a wonderful doctor—I know you’ll be perfect for me.” She explains that her main treatment is “Valium” and asks you to prescribe. When you say that you need more information first, she begins to become angry saying “if you just throw me out without anything, it will be your fault when I’m found dead.”

This behavior is most typical of which personality disorder?

   A. Narcissistic
   B. Schizotypal
   C. Bipolar
   D. Borderline
   E. Dependent
5. J.S. is a 12-year-old boy with asthma. J.S. has been having persistently poor performance on his pulmonary function tests, despite pharmacological treatment. Fearing for his safety, the family decides to take their winter vacation without him; they go to Florida while his aunt stays with him at his home. During this period, his pulmonary function improves. On return of the family, his functioning becomes poor again.

What can be deduced from this vignette?

- J.S.'s family caused his asthma.
- J.S.’s asthma has a non-genetic etiology.
- J.S.’s asthma is triggered by stress.
- J.S. should be separated from his family.
- J.S. would benefit from asthma education.

(Questions 6-8): Mrs. H. is a 49-year-old white female who presents to your office with a desire to lose weight. She is currently 5’5 and weighs 250 pounds. This corresponds to a BMI of 41.6 kg/m2. You measure her waist size to be 42 inches. While taking her past medical history, Mrs. H tells you that she has always been heavy, however, she has recently begun to worry about her health and wishes to lose weight.

6. What is the minimum BMI to be considered obese?

- A. 20 kg/m2
- B. 24 kg/m2
- C. 30 kg/m2
- D. 35 kg/m2
- E. 40 kg/m2

7. You recommend that Mrs. H begin a reduced calorie diet and walk daily for 30 minutes. What daily calorie deficit is required for Mrs. H to lose one to two pounds in a week?

- A. 100 to 300 calories
- B. 250 to 500 calories
- C. 500 to 1,000 calories
- D. 1,000-1,300 calories
- E. 1,300-1,500 calories

8. Which of the following would be an example of a behavioral intervention that is effective in helping people such as Mrs. H. to lose weight?

- A. Keeping a daily dietary to monitor eating and exercise habits
- B. Beginning a regimen of Metformin (Glucophage).
- C. Petitioning a town to build sidewalks and walkways.
- D. Gastric bypass surgery.
- E. Psychodynamic psychotherapy to address the root causes of overeating.
(Questions 9-11): Mrs. Penn is 59-year-old woman who is brought to the hospital because her husband feels “she isn’t herself.” His main complaint is that she is very forgetful. “I tell her to do something, and right away she’s asking me to repeat it. She never seems to pay attention.” On examination, the patient does admit to having poor concentration, saying “I seem to get more stupid every day.” She feels that usually, if she takes time, she can remember what she needs to do, but feels that her husband is understandably impatient. As she describes this, she looks tearful.

Both she and her husband agree that the memory problem began about a month ago, and that she was in her normal state of health prior to that. In addition to poor memory, she notes frequent awakening at night, and a poor appetite.

On mental status testing, she is somewhat poorly groomed and dressed. She appears sad and tearful. She talks and moves very slowly. On cognitive exam, she answers “I don’t know” to most questions. When given three words to remember, she has trouble repeating them and can only do it on the third try. After ten minutes, she cannot spontaneously recall the words. With encouragement, she can recall two, and with a hint can recall the third. Asked to copy a drawing, she throws down the pencil, saying “I can’t do anything.”

9. Of the following, which is the most likely cause of the patient’s current symptoms?

A. Major depression  
B. Alzheimer’s Dementia  
C. Bipolar Disorder  
D. Delirium  
E. Dysthymia

10. Which of the following tests would most likely to be abnormal in her case?

A. Dexamethasone suppression test  
B. Computerized Tomography (CT) Scan of Brain.  
C. 24-hour Electroencephalogram (EEG)  
D. Complete Blood Count (CBC) with differential.

11. Of the following, which is accepted by most experts to be the most effective treatment for her symptoms?

A. Cognitive Behavioral therapy.  
B. Venlafaxine (Effexor).  
C. Clozapine (Clozaril).  
D. Electroconvulsive therapy.  
E. Donepezil (Aricept).
12. Currently, the most effective treatment for Alzheimer’s disease is/are:
A. Cholinesterase inhibitors
B. NMDA receptor antagonists
C. Cholinesterase inhibitors and NMDA receptor antagonists
D. Structuring the daily routine for patients and caregivers
E. Medications to lower amyloid

13. The only condition for which cholinesterase inhibitors are currently approved by the FDA is
A. Moderate-severe Alzheimer’s disease
B. Mild-moderate Alzheimer’s disease
C. Mild cognitive impairment
D. Frontotemporal dementia
E. Vascular dementia

14. In a metanalysis of 20 studies, it was found that about 35% of subjects had an asthma attack when given normal saline that was falsely identified to them as being a bronchoconstrictor. What is the most likely explanation of this finding?
A. The subjects who “responded” were malingerers.
B. Many subjects claiming to have asthma actually have a somatoform illness.
C. 35% of the population are allergic to normal saline.
D. Asthma can be provoked in some patients.
E. Stress is an important trigger for asthma.

15. Which of the following is the best statement about driving and dementia?
A. Though it is not illegal for a patient with an MMSE below 22 to drive, it is the AMA standard for doctors to advise these patients not to drive.
B. All patients are required to have an on the road test to assess driving safety after they are diagnosed with Alzheimer’s disease.
C. Physicians should ask the patient and the family about driving activity and driving safety each follow-up visit in patients with dementia.
D. Many patients with mild dementia can safely drive short distances in familiar places during the day.
E. C and D

16. Which of the following is an accurate pair regarding the activity of hypothalamic nuclei?
A. Ventromedial hypothalamus - control of circadian rhythms
B. Lateral hypothalamic nucleus - satiety center
C. Suprachiasmatic nucleus - control of aggression
D. Mammillary bodies - limbic memory circuit
E. Anterior nucleus - limbic memory circuit
(Questions 17-19): A 28 year old male with a 6 year history of excessive alcohol use presents to an acute rehab facility for alcohol detoxification. The patient states since he began drinking, the patient has used progressively larger amounts of alcohol to achieve similar levels of intoxication. He denies ever having had tremors or seizures following use. He has tried on several occasions to cut down on his drinking, but each time after a few months of sobriety he relapses. Despite his excessive use, the patient states that he still manages to get up in the morning, and that he continues to get to work and to accomplish chores at home on the weekends.

17. The most likely diagnosis is:
   
   A. Substance use  
   B. Substance abuse  
   C. Substance dependence  
   D. Substance intoxication  
   E. Substance withdrawal

18. The immediate treatment of choice for this patient is:
   
   A. Lithium  
   B. Haloperidol (Haldol)  
   C. Lorazepam (Ativan)  
   D. Disulfiram (Antabuse)  
   E. Acamprosate (Campral)

19. The patient is seeking advice regarding the most effective means of achieving long-term abstinence. In your discussion with him, you tell the patient:
   
   A. It is possible to achieve controlled drinking in a substantial number of patients with a prior history of alcohol dependence  
   B. Disulfiram is highly effective as a primary modality for maintaining abstinence from alcohol in the absence of behavioral interventions  
   C. Naltrexone acts at the kappa opioid receptor and has been shown to decrease withdrawal symptoms in alcoholics  
   D. Group therapy has been shown to have greater effectiveness in maintaining abstinence than medical management
Questions 20-30

20. The function of structure “A” could best be described as: amygadala

   A. Modulation of behaviors and memories associated with fear and anxiety
   B. Regulation of motivation and drive
   C. Primary processing of olfactory signals
   D. Consolidation of episodic memories (hippocampus)
   E. None of the above
21. Hyperactivity in the area marked “B” are most closely associated with:

A. Lip-smacking and olfactory hallucinations  
B. Fear and depersonalization  
C. The positive symptoms of schizophrenia  
D. Obsessions and compulsions  
E. Temporally-graded retrograde amnesia

22. The structure marked “C” could best be described as:

A. A posterior nucleus of the hypothalamus  
B. A posterior nucleus of the thalamus  
C. A ventral process of the midbrain  
D. A portion of the medial temporal lobe  
E. A key pontine white-matter tract

23. The key neurotransmitter associated with structure “D” is:

A. Norepinephrine  
B. Serotonin  
C. Acetylcholine  
D. GABA  
E. Dopamine

24. Structure “D” is primarily involved in which of the following functions?

A. Modulation of emotional behavior  
B. Direct activation of the cortical spinal tract  
C. Initiation of movement and regulation of motor tone  
D. The “reward” pathway in substance abuse  
E. Motivation and drive

25. Which of the following drugs would have the strongest effect on the function of pathways beginning at structure “D”?

A. Clozapine  
B. Imipramine  
C. Fluoxetine  
D. Haloperidol  
E. Benzodiazepines

26. Damage to structure “C” is most closely associated with which of the following conditions?

A. Alzheimer’s Disease  
B. Wernicke-Korsakoff syndrome  
C. Kluver-Bucy Syndrome  
D. Herpes encephalitis  
E. Parkinson’s Disease
27. The fornix connects which two structures in figure 5?

A. Structure A and B
B. Structure B and C
C. Structure C and D
D. Structure A and C
E. None of the above

28. Structure E contains primary cell bodies for which neurotransmitter?

A. Norepinephrine
B. Serotonin
C. Acetylcholine
D. GABA
E. Dopamine

29. Abnormalities in this neurotransmitter (the one associated with structure E) are most closely associated with which condition?

A. Alzheimer’s Disease
B. Parkinson’s Disease
C. Huntington’s Disease
D. Depression
E. C and D only

30. The drug that most selectively affects the neurotransmitter in structure E is:

A. Tacrine (Cognex)
B. Haloperidol (Haldol)
C. Fluoxetine (Prozac)
D. L-dopa (Sinemet)
E. Nicotine
(Questions 31-32): A 2 year old boy is evaluated by his pediatrician following complaints from his parents that he is doing poorly in school. The child routinely talks out of turn in class and has difficulty completing academic assignments within the allotted time. He is reported to be unruly, and his teachers find him to be disrespectful. The mother takes the pediatrician, who begins an empirical trial of Methylphenidate (Ritalin). One week later his teachers report him to be more manageable. His grades improve.

31. Which statement about the use of Ritalin in this case is true?

A. If it is continued, it will lead to drug dependence in approximately 70% of cases.
B. A good response is virtually diagnostic of attention-deficit hyperactivity disorder.
C. Given the early response, talking therapy is unlikely to add additional benefit.
D. The doctor should have established a diagnosis before initiating treatment.
E. A Dextroamphetamine/amphetamine combo (Adderall) is more effective than any single drug.

32. After further neuropsychological testing and psychiatric evaluation, it is decided the boy has attention deficit hyperactivity disorder (ADHD). Which of the following is true of this disorder?

A. Technically, this diagnosis cannot be made until the boy is age 10.
B. Stimulants should used only as a last resort for this disorder.
C. The boy is likely to have language deficits and a low IQ.
D. Persistence of symptoms into adulthood is rare.
E. The doctor should involve not only the child, but the family and school.

(Questions 33-34): Mr. Marshall is a 67 year old man with a history of major depression. He believes he has had at least five episodes of depression in his adult life. At least three of those episodes were very serious, two resulting in psychiatric hospitalizations, and one culminating in a near fatal suicide attempt. He has responded well to pharmacotherapy with Sertraline (Zoloft). After one month of therapy, he reports no symptoms of depression, and asks how long he should remain on medication. Though he denies side effects with Sertraline, he says “I never much liked taking pills.”

33. How long should you recommend he remain on Sertraline?

A. At least 2 more weeks.
B. At least 3 more months.
C. At least a year.
D. Indefinitely.

34. Though he is willing to consider continued pharmacotherapy, he asks if there are any other options. Of the following, which has the strongest evidence for the prevention of depressive episodes?

A. Psychoanalytic psychotherapy.
B. St. John’s Wort.
C. Cognitive Behavioral Therapy.
D. Systematic Desensitization.
E. A week in Hawaii.
35. There is strong evidence that weight loss decreases all of the following EXCEPT:

A. Blood pressure  
B. High density lipoprotein (HDL) cholesterol  
C. Low density lipoprotein (LDL) cholesterol  
D. Blood glucose levels in non-diabetics  
E. Serum triglycerides

36. *For this statement:*

In the mesolimbic system, \( \text{hyper-} \) activity of the dopamine neurons is associated with the \( (+) \) symptoms of schizophrenia. In the mesocortical system, \( \text{hyper-} \) activity of the dopamine neurons is associated with the \( (-) \) symptoms of schizophrenia.

*Indicate which series of choices best fills in the blanks:*

A. hyperactivity, positive, hypoactivity, negative  
B. hyperactivity, negative, hypoactivity, positive  
C. hypoactivity, positive, hyperactivity, negative  
D. hypoactivity, negative, hyperactivity, positive  
E. hyperactivity, positive, hyperactivity, negative

37. True statements regarding the relationship between alcoholism and genetics include which of the following?:

A. Daughters of mothers who are alcoholics are at increased risk of alcoholism compared to sons  
B. The risk of alcoholism in children of alcoholics normalizes when they are raised by foster parents  
C. Abnormal EEGs are invariably found in patients with familial alcoholism.  
D. Severe alcoholism is more likely in sons of alcoholic fathers with antisocial personalities.  
E. Identical twins have a similar prevalence as fraternal, suggesting a strong environmental contribution.

38. The following is true regarding metabolism of alcohol:

A. Metabolism follows first-order kinetics  \( \text{zero-order} \)  
B. Hepatic microsomal enzymes are \( \text{induced} \) by \( \text{acute alcohol intake} \)  
C. The rate of activity of alcohol dehydrogenase is higher in women than men  
D. HDL and triglyceride levels increase following alcohol use  
E. Alcohol potentiates the effects of ADH

39. Which of the following is the most potent \( \text{long-term inhibitor of feeding} \)?

A. Leptin  
B. aMSH (alpha melanocyte stimulating hormone)  
C. CCK (cholecystokinin)  
D. Insulin  
E. Neuropeptide Y
40. Which of the following does not stimulate feeding?

A. Neuropeptide Y  
B. AgRP (agouti-related peptide)  
C. CCK (cholecystokinin)  
D. MCH (melanin concentrating hormone)  
E. Orexin (Hypocretin)

(Questions 41-46:) Mrs. Jones, an 80 year old widowed mother of 2 is brought in by one of her daughters. The daughter complains that Ms. Jones is looking more “down” to her. She seems increasingly apathetic, and disinterested in things that used to be enjoyable for her. “My mother used to always want to go bowling, now she just sits and home in a chair doing nothing.” The daughter believes she is eating poorly and has lost 15 pounds over a period of 6 months. She explains that one month ago she took her to a walk in center, and the doctor there put her mother on Fluoxetine (Prozac), but it has done little.

On examination, Mrs. Jones is well dressed and groomed. She smiles when the doctor approaches. When asked why she is here, she laughs and says “my daughter just worries about me.” She denies any significant problems, and reports that her mood is “good.” She admits to getting irritable sometimes “like when my daughter won’t let me drive.” She says her appetite is good, and that she enjoys eating. She describes eating scrambled eggs for breakfast (but her daughter says there are no eggs in the house). Her affect is notable for having little expression: she tends to look straight ahead, neither smile nor frown, and shows little emotional reactivity (though she has short, rare smiles). She has little spontaneous speech, and tends to answer the examiner with short answers that are usually to the point. She is oriented to the day, but is not aware of the date, and gives the year as “1975.” She can repeat back the name of three objects, but when asked to recall them 5 minutes later, she just laughs and says “I have too much on my mind to remember silly things like that.”

41. Mrs. Jones’ symptoms are most likely due to:

A. Bipolar Disorder  
B. Dementia  
C. Psychotic Disorder  
D. Major Depression  
E. Delirium (medication induced)
42. The most reasonable next step in her management would be:

A. Start donepezil (Aricept)
B. Increase fluoxetine.
C. Start olanzapine (Zyprexa)
D. Stop fluoxetine, start sertraline (Zoloft).

43. The preferred initial intervention for the patient’s weight loss is:

A. Start Mirtazapine (Remeron) to stimulate appetite.
B. Stop fluoxetine, which is causing anorexia.
C. Arrange regular “Meals on Wheels” delivery of food.
D. Begin Ensure liquid dietary supplement.
E. Schedule patient for gastrostomy-tube insertion.

44. Magnetic Resonance Imaging (MRI) of this patient is most likely to show:

A. Numerous plaques and tangles
B. Frontal degeneration
C. Markedly enlarged lateral ventricles
D. Generalized atrophy
E. Degeneration of the caudate nucleus

45. Her affect can best be described as

A. Labile
B. Blunted
C. Dulled
D. Dysphoric
E. Tangential

46. Of the following, which would be the best test for establishing the diagnosis?

A. Dexamethasone Suppression Test.
B. Overnight Polysomnography
C. Mini-Mental State Examination
D. Wisconsin Card Sort Test
E. Magnetic Resonance Imagine (MRI)
47. Ms. K is a 55 year old alcoholic female whose daughter brings her to the emergency room for “unusual behavior.” Ms. K’s physical exam is notable for unusual horizontal eye movements and a broad based gait. Her mental status exam shows a confused elderly woman with marked anterograde amnesia and confusion. Deficiency of which of the following caused Ms. K’s symptoms?

A. Alcohol
B. Thiamine
C. Acetylcholine
D. Folate
E. Glutamate

48. Down’s syndrome appears to be a genetic model of Alzheimer’s disease as almost all patients with Down’s syndrome develop Alzheimer’s dementia if they live long enough. From what is known about the neuropathology of Down’s syndrome, when does the deposition of amyloid plaques in Down’s syndrome begin?

A. A few months before the onset of dementia
B. A year before the onset of dementia
C. A few years before the onset of dementia
D. 10 years before the onset of dementia
E. A few decades before the onset of dementia

49. The only condition for which memantine, an NMDA receptor antagonist is currently approved by the FDA is

A. Moderate-severe Alzheimer’s disease
B. Mild-moderate Alzheimer’s disease
C. Mild cognitive impairment
D. Frontotemporal dementia
E. Vascular dementia

50. Which of the following is a common peripheral effect of nicotine on the body?

A. Decreased heart rate
B. Decreased lipolysis
C. Vasoconstriction
D. Skeletal muscle contraction
E. Decreased production of adrenal steroids

51. Which pathway appears to make the biggest contribution to the hedonic reward aspects of feeding?

A. Nucleus accumbens cholinergic pathway
B. Substantia nigra dopaminergic pathway
C. Amygdalar serotonergic pathway
D. Nucleus accumbens dopaminergic pathway
E. Septal nucleus cholinergic pathway
(Questions 52-53:) A 25-year-old woman has a 10 pack-year smoking history. She comes to you requesting information on nicotine replacement therapy.

52. You inform her that the most effective therapy for helping a person to quit smoking with the highest safety margin and lowest abuse potential is:
   A. Nicotine nasal spray
   B. Nicotine inhaler
   C. Nicotine gum
   D. Nicotine patch

53. Aside from nicotine replacement therapy, a number of medical treatments are available for smoking cessation. Which of the following is true regarding Bupropion therapy?
   A. Bupropion is not recommended for use in patients with a history of seizure disorder
   B. Bupropion is at least twice as effective as any form of nicotine replacement therapy
   C. Bupropion plus nicotine replacement therapy is no more effective than either agent alone.
   D. Bupropion is most effective for withdrawal symptoms, but does little for nicotine craving.
(Questions 54-56): A 35-year-old businessperson has an intense fear of being embarrassed when speaking in public; this has been present since his teens. The mere thought of talking in front of a group gives him palpitations and causes sweating, and he is able to give presentations to his company only with great anxiety. At times the episodes are so bad that he feels faint and thinks he is “going crazy.” He can recall at least six of these episodes on the past year. All occurred in the anticipation of having to speak.

54. The most likely diagnosis is:

- A. Specific phobia
- B. Panic disorder with agoraphobia
- C. Agoraphobia without panic.
- D. Social phobia
- E. Scolionophobia

55. The patient asks for you advice about what to do. Which of the following would be considered an inappropriate suggestion for this disorder?

- A. Cognitive behavior treatment
- B. Beta blockers to be used prior to speaking.
- C. Diazepam (Valium) given twice daily.
- D. Public speaking classes.
- E. Once daily fluoxetine.

56. What is true about the epidemiology of this disorder.

- A. As a whole, phobias are very uncommon.
- B. As a whole, phobias are common in adults, but not children.
- C. As a whole, phobias are the most common psychiatric illness.
- D. As a whole, phobias are more common in men than women.

57. Which statement about treatment for weight loss is correct?

- A. There is insufficient evidence to justify recommending any behavioral treatment for weight loss.
- B. Comparison studies suggest that exercise alone is as effective as diet and exercise.
- C. The introduction of the low-carb (Atkins) diet was a major improvement in dietary intervention.
- D. Most effective programs include low fat, low calorie diets, exercise and behavior modification.
- E. Medication treatments are generally more effective than behavioral medication alone.
58. The cognitive behavior therapy model believes that psychological problems result from all of the following EXCEPT:

A. Faulty learning  
B. Incorrect inferences  
C. Inadequate/incorrect information  
D. Not distinguishing between reality and imagination  
E. Unconscious drives

59. A 28 year old male is brought to the hospital by 2 friends who say the prior day he engaged in a 12 hour cocaine binge. The friends are concerned because they had considerable difficulty arousing the patient today. On exam, the patient is hypersonomnolent but responsive to questioning. The primary treatment for this patient is:

A. Flumazenil  
B. Supportive management  
C. Ativan  
D. Naloxone  
E. Psychodynamic psychotherapy

60. Rational targets for treatment of obesity

A. Increasing orexin levels  
B. Increasing leptin levels  
C. Increasing insulin resistance  
D. Deep brain stimulation of the lateral hypothalamic nucleus  
E. Increase production of leptin in skeletal muscle.

61. Mr. T has recently been promoted from assembly line worker to a managerial position where he is now responsible for supervising and disciplining the other assembly line workers whom he used to work with. Mr. T may experience depression due to this role transition according to which school of psychotherapy:

A. Psychoanalysis  
B. Cognitive behavioral science  
C. Interpersonal psychotherapy  
D. Primal therapy  
E. Evocative psychotherapy
62. After knee surgery, you explain to a patient that he is going to need someone to drive him to his rehabilitation appointment. He becomes nervous, and eventually explains that he has few associates, preferring to “keep to myself.”

This is most typical of which personality disorder?

- A. Antisocial
- B. Schizoid
- C. Histrionic
- D. Avoidant
- E. Borderline

63. Mr. Q is a 74 year old male who has been diagnosed with a brain tumor. His wife brings him to your office because she has noticed some changes in his behavior. His wife describes him as a previously active man who loved to volunteer daily at the hospital and prided himself on always being on time. However, she has recently noticed that Mr. Q is more disorganized, often turning up hours late for his volunteer job. As you perform a neurological exam on Mr. Q you detect perseveration and impersistence. Where is Mr. Q’s lesion?

- A. Dorsal lateral prefrontal cortex
- B. Hippocampus
- C. Orbitofrontal cortex
- D. Premotor cortex
- E. Anterior cingulate gyrus
Questions 64-67

64. This scan is a
   A. CT
   B. MRI

65. The two areas of high signal nearest the frontal horns are located in which structure?
   A. Caudate nuclei
   B. Putamen
   C. Globus pallidus
   D. Thalamus
   E. Mammillary bodies

66. Where are the other three areas of high signal located?
   A. Pineal gland and choroid plexus
   B. Mammillary bodies and optic radiations
   C. Cerebellar vermis and substantia nigra
   D. Pineal gland and optic radiations

67. These five areas of high signal are most likely caused by
   A. Acute hemorrhage
   B. A normal variant
   C. Hyperparathyroidism
   D. Benign calcifications that increase with age
   E. Contrast enhancement
68. A 24 year old medical student becomes preoccupied with the concern that she is going to contract tuberculosis after her roommate develops a positive PPD while on the wards. She becomes so preoccupied with her fear that she begins to wash their bathroom repeatedly, sometimes cleaning the toilet up to 8 times a day. She states that cleaning temporarily is able to relieve her anxiety, but it recurs once she stops. The patient has become severely distressed by her actions, and they have interrupted many of her typical daily activities. Which of the following statements is true regarding her condition?

A. Her symptoms are ego-syntonic
B. Antidepressants have minimal effectiveness in treating these patients
C. Benzodiazepines should not be used for acute symptom control in these patients
D. Comorbid mood disorders are uncommon in patients with this condition
E. Cognitive-behavioral therapy is effective in treating this disorder.

69. Which of the following statements regarding Obsessive Compulsive Disorder (OCD) and Obsessive Compulsive Personality Disorder (OCPD) is most true?

A. OCD and OCPD are genetically distinct disorders with no familial overlap.
B. OCPD patients tend to be more distressed by their symptoms than are OCD patients.
C. Though perfectionist, OCPD patients generally do not show true compulsions.
D. Though OCD'ers slip by, OCPD patients are too impaired get into medical school.
E. Though present in both, rituals are more commonly found in OCPD.

70. In your 1st year psychiatric interviewing course you are interviewing Ms. G. In mid-sentence, Ms. G suddenly puts her hand on you and begins to unbutton your shirt. You panic and yell at her to stop, but Ms. G tells you that this behavior is not conscious, in fact, it is due to a lesion in her brain. Your preceptor tells you that Ms. G is correct, and in fact, the same lesion has caused her to lose her drive and motivation. Where is the lesion located?

A. Amygdala
B. Hippocampus
C. Dorsolateral prefrontal cortex
D. Orbitofrontal cortex
E. Cingulate gyrus

71. What is the relationship between nicotine and the dopamine reward pathway?

A. Nicotine directly triggers the release of dopamine
B. Nicotine indirectly modulates this pathway through activation in the globus pallidus.
C. Nicotine blocks dopamine absorption, resulting in a net increase in active dopamine.
D. Nicotine enhances the effects of dopamine at neural synapses.
(Questions 72-76): A 26-year-old male in your care, A.R., believes that he is Jesus Christ. His speech is rambling, he giggles frequently at inappropriate times, and the semantic content of his speech is nearly incomprehensible. He exhibits behaviors that seem purposeful, but do not accomplish any meaningful end. He often "hears voices." The first episode of this behavior occurred when he was 19 years old, when he was a freshman in college.

72. It is determined the A.R likely has schizophrenia. Which subtype of schizophrenia is he most likely to have?

A. Catatonic schizophrenia
B. Disorganized schizophrenia
C. Paranoid schizophrenia
D. Residual schizophrenia
E. Undifferentiated schizophrenia

73. Which of the following is unique to his particular subtype of schizophrenia?

A. Clouding of sensorium
B. Loosening of associations
C. Suicidal ideation
D. Hallucinations
E. Delusions

You are trying to decide what kind of pharmacologic agent you want to use for A.R.'s treatment. For each of the following statements (74-76), indicate whether the statement pertains to

A. Haloperidol (Haldol)
B. Clozapine (Clozaril)
C. Both
D. Neither.

C. 74. Has significant antagonist activity at D2 receptors
B. 75. Has significant antagonist activity at 5-HT2A receptors
A. 76. Likely to cause extrapyramidal side effects
77. Mr. X is a 45 year old male who had neurosurgery 2 months ago for his refractory epilepsy and aggression. After his surgery, Mr. X’s family noticed that he began to constantly place items in his mouth, even non-food items. His wife reports that he frequently attempts to initiate sexual intercourse, even at inappropriate times, such as in public. Which structure did the neurosurgeon bilaterally resect in Mr. X?

A. Amygdala  
B. Anterior cingulated gyrus  
C. Mammillary bodies  
D. Anterior nucleus of the thalamus  
E. Hippocampus

78. Which of the following is true of psychopharmacological treatment in childhood?

A. Treatment should focus on the target symptoms, not diseases.  
B. As the children are legally minors, obtaining informed consent is not important.  
C. Most psychiatric medications are approved by the FDA for use in children.  
D. Medication treatment should be combined with some form of psychotherapy.  
E. Higher metabolism (per kg) necessitates higher doses and more rapid titration.
79. Which statement(s) best describe the symptoms likely to be associated with the MRI scans in this 70 year old man below?

A. emotional disturbance and aphasia with emotional disturbance being more pronounced
B. aphasia only
C. semantic dementia, aphasia, amnesia, and emotional disturbance
D. amnesia only
E. aphasia and amnesia

80. A 7-year-old boy is known to exhibit a number of peculiar behaviors. During conversation, the boy makes poor eye contact and few gestures. He has a fascination with baseball cards and can recite the exact batting averages of all the players on the New York Mets from 1998. His speech pattern is marked by inappropriate inflection and he is of low IQ. He is thought to have some form of a Developmental Disorder, most likely Autism. Which of the following is true of this class of disorders?

A. This class of disorders are the most common childhood psychiatric disorders worldwide.
B. They are caused by a combination of genetic predispositions, and parental neglect.
C. Though often used, these disorders are considered to have poor construct validity.
D. Though they may begin in childhood, they are usually subsyndromal until adulthood.
E. Treatment of these disorders generally require multiple medications.
A patient with a long history of prostate carcinoma with bony metastasis presents with complaints of severe pain. For the pain, he was given continuous morphine tablets (a slow release version of morphine, usually given twice a day). Though helpful at first, after six months he felt the dose he was given was no longer adequate. He denies any euphoria from the medication, saying “all it does is help me with my pain.”

He began asking his doctor for more morphine. His doctor expressed concern, but agreed to increase the dose.

Initial, the patient was satisfied, but after several weeks, the patient felt that the medication was again wearing off. He reported that the medication helped his pain, but only for a few hours. Again he asked his doctor for an increase in his medication. This time, the doctor became alarmed and refused to fill further prescriptions. Later that day, the patient presented to an emergency room with agitation, diaphoresis, diarrhea and vomiting, as well as intolerable pain.

81. Does this patient have a physical dependence on opioids?
   A. Yes
   B. No

82. Is this patient tolerant to opioids?
   A. Yes
   B. No

83. Is this patient addicted to opioids?
   A. Yes
   B. No

84. Does this patient have a DSM-IV defined opioid dependence?
   A. Yes
   B. No
85. Which area of the brain is especially predisposed to both anoxic injury and herpes encephalitis?

A. Anterior thalamus
B. Hippocampus
C. Caudate nucleus
D. Mammillary bodies
E. Globus pallidus

86. Which of the following therapies utilizes Socratic questioning, using others as reference points, and rational-emotional role playing?

A. Interpersonal therapy
B. Psychodrama
C. Cognitive behavioral therapy
D. Psychoanalysis
E. Existential Psychotherapy

87. The patient is brought in by his wife, who says “fix him—he’s crazy.” She explains that the patient is always “correcting everything I do.” As an example, she says that every time she cooks dinner, he recooks it. He is embarrassed, but admits it is true, saying that “I try not to, but the fact is, I’m a better cook than her.” He also rearranges her clothes saying “she’s a slob.” The wife is also upset that he will never let her spend any money, saying that she has not had a new car in 10 years. He counters that their car still runs fine. Though he admits to frequent worries--about money and about his wife leaving him--he denies intrusive thoughts or ritualistic activities.

The most likely disorder is:

A. Obsessive Compulsive Disorder
B. Narcissistic Personality Disorder
C. Hypomania
D. Obsessive Compulsive Personality Disorder
E. Shared Psychotic Disorder (Folie-a-Deux)

88. A 54 year old woman is evaluated by her physician during an annual physical and found to have an enlarged liver and spleen. She denies a history of alcohol use. Laboratory findings that would be suggestive of a history of chronic alcohol abuse include:

A. Microcytic anemia
B. Decreased liver enzymes
C. Decreased cAMP levels
D. Decreased white blood cells
E. Increased numbers of platelets
(Question 89-90):  *Some patient comes to us complaining about something.*

89. The most important thing we can offer them is our:

A. Love
B. Respect
C. Hand (in friendship)
D. Technical expertise
E. Buspar

90. The only thing we have any right to expect from them is their:

A. Money
B. Eternal gratitude
C. Admiration
D. Love
E. Buspar

*That's It...almost:*

*Make sure to check you work. That old adage that you should always stick with your first response is wrong – double checking helps.*

*Also be sure to fill out the course evaluations. The Small Group leaders generally appreciate specific feedback as well (be sure to identify which group you are talking about).*
## INDIVIDUAL SCORES REPORT

Test: 2005 bio 370 final
Grade:
Score: 85.56% (77.00 of 90.00)

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**SUMMARY:**

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Monday, May 23, 2005 09:21:32 AM