States of Consciousness Study Guide

1. The Conscious Experience
   a. Define consciousness
   b. Distinguish the types of consciousness
   c. Conclude the benefits and downsides to “filtering”
   d. Distinguish the 3 consciousness theories
   e. Identify daydreaming cycles
   f. Impact of personality on daydreams
   g. Defend a side of the daydreaming controversy

2. Sleep
   a. Benefits of good sleep
   b. Circadian Cycles (as related to travel, time change, etc)
   c. Stages of sleep and the order in which they occur
   d. Characteristics of our sleep stages
   e. Symptoms and effects of sleep disorders

3. Dreams
   a. Define dreams
   b. Understand the relationship between memory of dreams and the stages in which they occur
   c. Role of age and gender in what we dream
   d. Differentiate the 4 dream explanations
   e. Explain how psychologist know we NEED to dream

4. Drug-Altered Consciousness
   a. Define psychoactive drugs
   b. Explain why drugs have become more problematic to society over time
   c. 3 categories of drugs (relate drugs to correct category and understand effects)
   d. Examine the marijuana controversy
   e. Explain the reasons cited for addictive/abusive behaviors

5. Meditation and Hypnosis
   a. Purpose of each
   b. Effects of each
   c. Implications of posthypnotic suggestions

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Role: Professor of Sleep and Dream Studies at Windsor University
Audience: Sigmund Freud
Format: Letter
Topic: The purpose of sleep/dreaming

Directions:
1. Determine whether or not you agree with Freud’s theory on the human need for sleep and dreaming.
2. Write a letter to Freud detailing his theories.
   a. Discuss the theories point by point
      i. Tell whether you agree or disagree with each point and WHY!
3. You MUST include at least 5 vocabulary words from this unit in your letter. (Please underline or highlight these words.)

Grading Criteria:

1. Correct usage of 5 unit vocabulary words: _____/5 points
2. Demonstration of correct understanding of the Freudian Theory for sleep and dreaming and states of consciousness concepts:
   a. Explains Freud’s theory accurately _____/3 points
   b. Describes other theories accurately _____/3 points
   c. Do you agree _____/1 points
      i. Offer support for your opinion _____/3 points
3. Response is written in correct voice and format: _____3 points
4. Response shows demonstration of creativity and effort: _____2/ points

Total Points: _____/20
# 24 Hour Day Dream Tracker

<table>
<thead>
<tr>
<th>Time you noticed you were day-dreaming</th>
<th>Approximate time spent in day-dream (in minutes)</th>
<th>Activity during which you day-dreamed (ex: notes, watching tv, driving, etc)</th>
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**Day-dream Reflection Questions**

1. do you day-dream more or less frequently than you assumed?

2. Did your day-dreams peak between 12PM-2PM, as psychologists’ findings indicate is most common? If not, when?

3. Where do you stand on the day-dream controversy? Why? Cite evidence from your 24 hour experience to support your stance.

---
Sleep and Dream Journal

For the next week (7 days) you will keep a sleep and dream journal. In class, we are learning about the human need for sleep. In addition to our need to re-energize with sleep, we also need dreams to help us replay events of our previous days and commit them to our long-term memory. This will be due next Tuesday, (without exception) March 25, 2014.

Instructions:
1. Answer the “before you begin” questions.
2. To understand your sleep, each morning when you awaken, you will record the following information: Date, Wake-up Time, Time Out of Bed, Time to Bed, Estimated Time to Fall Asleep, Total Hours of Sleep, and Morning Energy-Level Rating.
3. To understand your dreams, each morning when you awaken, you will write a detailed summary of your dreams for that night. THEN, you will make any connections you find to your recent experiences
   a. For example, if you dream about riding an elephant, you may connect this to the fact that you are planning on going to the circus this coming weekend.
   
   You need to have a minimum of 3 dreams in the journal. Ideally, they will be dreams you remember from this week. Everyone dreams every night, but not everyone remembers those dreams, so if you do not remember 3 dreams, you can supplement this part of the assignment with:
   1. a dream from a time before this week you remember (can go all the way back to childhood)
   2. you can interview another person and have them tell you about one of their dreams and how it connected to an element of their life at the time they dreamed it.
4. On your final wake-up morning, you will answer your “end of project questions.”
5. Be prepared to discuss your findings with the class.
Before you Begin Questions

1. Do you think you need a lot of sleep or a little sleep?

2. How many hours of sleep do you get each night, on average?

3. If you went without sleep, do you think you'd be able to remember things as well as you could with a good night's sleep?

4. Would you be able to think as clearly?

5. How many of your dreams do you remember?

6. Do you remember all of your dreams?

7. What purpose do you suppose dreams serve?
Set-Up for Daily Journal Entries

Date: Tuesday Morning, March 18 (covering sleep from Mon 3/17-now)

Wake-up Time:

Time Out of Bed:

Time to Bed:

Estimated Time to Fall Asleep:

Total Hours of Sleep:

Morning Energy-Level Rating:
   Please use the following scale to determine your “Morning Energy Level Rating”
   5 = woke up before the alarm and jumped out of bed
   4 = woke up with the alarm
   3 = woke up with the alarm, but laid in bed awhile
   2 = hit the snooze button several times (or parent came in several times), but
      eventually woke up
   1 = overslept or slept in

Detailed Account of Dreams:

Connections to Real Life:
Date:

Wake-up Time:

Time Out of Bed:

Time to Bed:

Estimated Time to Fall Asleep:

Total Hours of Sleep:

Morning Energy-Level Rating:
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1 = overslept or slept in

Detailed Account of Dreams:

Connections to Real Life:
Date: Monday Morning, March 24 (This is your last day!) Bring your whole sleep and dream journal packet to class today to finish your end of project questions. Remember, its due tomorrow, with NO exceptions!

Wake-up Time:

Time Out of Bed:

Time to Bed:

Estimated Time to Fall Asleep:

Total Hours of Sleep:

Morning Energy-Level Rating:
  Please use the following scale to determine your “Morning Energy Level Rating”
  5 = woke up before the alarm and jumped out of bed
  4 = woke up with the alarm
  3 = woke up with the alarm, but laid in bed awhile
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  1 = overslept or slept in

Detailed Account of Dreams:

Connections to Real Life:
End of Project Questions

1. Did you go to bed the same time every night and wake up the same time every morning?

2. Make a bar graph (histogram) of the number of hours you slept each night. Label the X-axis Night 1, Night 2, Night 3, etc. The Y-axis will show the number of hours of sleep and should be labeled starting with 0 and ending with the most hours you slept on a single night. Did you sleep the same amount every night or did it vary?

3. Calculate the average number of hours you slept a night (add the number of hours you slept each night and divide by the number of nights).

4. Were there any nights when you got at least an hour less than your average amount of sleep? If so, check your energy-level rating for that day and write it down.

5. Check your journal for a night when you had more than your average amount of sleep. What was your energy-level rating the next morning? Was it what you would expect? Why or why not?
6. Were there any nights when you had a hard time falling asleep? If so, how long did you estimate it took you to fall asleep? Did you note why you couldn't fall asleep? If you did, write down the reason.

7. Were you able to connect dream events with events in your daily life? Provide examples.

8. Did you have some dreams that seemed to have no connections with daily life? Provide examples.

9. Do you think you remembered every dream you had? Why or why not?

10. Based on what you have learned over this past week, explain why is a good night's sleep important before a big test or a competition?
**Dreams Activity**

1. Write out the order of the sleep cycle:
   a. Circle the stage in which most dreaming will occur.
   b. Based on what you know about the stages of sleep, why do you think our most vivid dreams would occur here?

2. Draw a picture illustrating the most typical components of dreams for each of the following groups:

<table>
<thead>
<tr>
<th>2-5 yr olds</th>
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<tbody>
<tr>
<td>5-9 yr olds</td>
</tr>
<tr>
<td>9-15 yr olds</td>
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<tr>
<td>Males</td>
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<tr>
<td>Females</td>
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</tbody>
</table>
## Sleep Now, Remember Later

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
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<tbody>
<tr>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>Issue</td>
<td></td>
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</tr>
</tbody>
</table>
| 1. During sleep, our brain is at rest and fairly inactive.  
*Evidence* |       |
| 2. When problem solving, you are better off sleeping before making decisions.  
*Evidence* |       |
| 3. Positive memories are more likely to “stick” than negative memories.  
*Evidence* |       |
| 4. Lack of sleep has been linked to clinical depression.  
*Evidence* |       |
<p>| | | |</p>
<table>
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</table>
| 5. | The neo-cortex (wrinkly part of the brain) is a temporary holding place for new memories.  
_Evidence_ |   |
|   |   |   |
| 6. | Psychologists have know nothing about how memories are formed in sleep.  
_Evidence_ |   |
|   |   |   |
| 7. | For every 2 hours we spend awake, we need 1 hour of sleep to construct meaning from our experiences.  
_Evidence_ |   |
HEALTH FOR LIFE

Sleep Now, Remember Later

Researchers are exploring the mysterious and important links between memory and slumber. By Robert Stickgold, PH.D., and Peter Wehrwein | NEWSWEEK
Published Apr 18, 2009
From the magazine issue dated Apr 27, 2009

For many years, people believed that the brain, like the body, rested during sleep. After all, we are rendered unconscious by sleep. Perhaps, it was thought, the brain just needs to stop thinking for a few hours every day. Wrong. During sleep, our brain—the organ that directs us to sleep—is itself extraordinarily active. And much of that activity helps the brain to learn, to remember and to make connections.

It wasn't so long ago that the rueful joke in research circles was that everyone knew sleep had something to do with memory—except for the people who study sleep and the people who study memory. Then, in 1994, Israeli researchers reported that the average performance for a group of people on a memory test improved when the test was repeated after a break of many hours—during which some subjects slept and others did not. In 2000, a Harvard team demonstrated that this improvement occurred only during sleep.
There are several different types of memory—including declarative (retrievable, fact-based information), episodic (events from your life) and procedural (how to do something)—and researchers have designed ways to test each of them. In almost every case, whether the test involves remembering pairs of words, tapping numbered keys in a certain order or figuring out the rules in a weather-prediction game, "sleeping on it" after first learning the task improves performance. It's as if our brains squeeze in some extra practice time while we're asleep.

This isn't to say that we can't form memories when we're awake. If someone tells you his name, you don't need to fall asleep to remember it. But sleep will make it more likely that you do.
Sleep-deprivation experiments have shown that a tired brain has a difficult time capturing memories of all sorts. Interestingly, sleep deprivation is more likely to cause us to forget information associated with positive emotion than information linked to negative emotion. This could explain, at least in part, why sleep deprivation can trigger depression in some people: memories tainted with negative emotions are more likely than positive ones to "stick" in the sleep-deprived brain.

Sleep also seems to be the time when the brain's two memory systems—the hippocampus and the neocortex—"talk" with one other. Experiences that become memories are laid down first in the hippocampus, obliterating whatever is underneath. If a memory is to be retained, it must be shipped from the hippocampus to a place where it will endure—the neocortex, the wrinkled outer layer of the brain where higher thinking takes place. Unlike the hippocampus, the neocortex is a master at weaving the old with the new. And partly because it keeps incoming information at bay, sleep is the best time for the "undistracted" hippocampus to shuttle memories to the neocortex, and for the neocortex to link them to related memories.
How sleep helps us consolidate memories is still largely a mystery. A recent study from the University of Lübeck, in Germany, offers one clue. Subjects were given a list of 46 word pairs to memorize, just before sleep. Shortly after they fell asleep, as they reached the deepest stages of sleep, electrical currents were sent through electrodes on their heads to induce very slow brain waves. Such slow waves were induced at random in the brains of one group of subjects, but not another. The next morning, the slow-wave group had better recall of the words. Other types of memory were not improved, and inducing the slow waves later in the night did not have the same effect. Why and how the slow waves improved memory is not yet understood, but they are thought to alter the strengths of chemical connections, or synapses, between specific pairs of nerve cells in the brain. Memories are "stored" in these synapses: changing the strength of the synapses increases the strength of the memories they store.

It's not just memory that is improved by sleep. Recent studies indicate that sleep not only helps store facts, it also helps make connections between them. Scientific history is replete with tales of scientists with nocturnal "ahah!" experiences. Dmitri Mendeleev awakened from a dream that gave him the idea for the periodic table of elements—a landmark in chemistry. Such anecdotes don't prove that sleep can produce insights, but a recent study by Ulrich Wagner and colleagues in Germany does. Wagner used a puzzle in which players were given a string of numbers, and required to make a series of seven calculations based on these numbers. The seventh calculation (which depended on the preceding six) was the "answer." Participants repeatedly played the same game with the same rules, but different sets of numbers. Some of the players played the game in the morning, then did other things for eight hours or so, then played the game again. Others played the game first in the evening, then slept, then played it again after awakening. The players who slept did somewhat better—but that was not the important result. Cleverly, the researchers structured the game such that the second calculation always gave the same answer as the seventh calculation—the final answer. If players recognized this "hidden rule," they could get to the final answer much faster—and speed was a part of the game. The players who slept were almost three times more likely to have the insight that allowed them to spot the hidden rule—even though none of the players had been told there was a hidden rule to spot. Sleeping had allowed them to connect the dots.

Why is this important? Some sleep researchers believe that for every two hours we spend awake, the brain needs an hour of sleep to figure out what all these experiences mean, and that sleep plays a crucial role in constructing the meaning our lives come to hold. Breakdowns in such sleep-dependent processing may contribute to the development of depression, and may explain why some people who experience horrific traumas go on to develop PTSD.

A better understanding of how sleep knits our memories together could lead to new technologies that improve learning, memory and creativity, and even help treat some psychiatric disease. But perhaps the most important reason for studying sleep is simply this: we are a curious species; we spend about a third of our lives asleep; and we realize how little we understand about that third of our lives. So we continue experimenting, hoping to understand sleep better. And perhaps someday we will. After we've slept on it.

Stickgold is associate professor of psychiatry at Harvard Medical School and Beth Israel Deaconess Medical Center. Wehrwein is editor of the Harvard Health Letter. For more information, go to health.harvard.edu/Newsweek.
Sleep Now, Remember Late
Article Comprehension Quiz

1. Which organ directs us to sleep?
   a. Lungs
   b. Heart
   c. Brain
   d. Stomach

2. Which of the following is NOT improved by sleep?
   a. Learning
   b. Physical Disorder/Disease
   c. Memory
   d. Making Connections

3. In sleep research, which explanation best describes the link in sleep deprivation and depression?
   a. Negative memories are less likely to be stored during sleep
   b. Negative memories are more likely to be captured in sleep, while positive memories tend to be lost
   c. Positive memories are more likely than negative to be stored during sleep
   d. All memories are equally stored during sleep

4. Based on the text, which location on the brain most likely houses our long term memories?
   a. The hippocampus
   b. The occipital lobe
   c. The neocortex
   d. The brain stem

5. According to researchers, a person who is awake 16 hours per day needs how many hours of sleep for “constructing the meaning our lives come to hold.”
   a. 6 hours
   b. 16 hours
   c. 12 hours
   d. 8 hours

6. Based on the article, why might homework (especially homework completed before bedtime) improve student success?
**Dream Web Quest**

***This entire class period is to be spent navigating the following website. Please realize that any student found on any other website for any other reason will earn an office referral and a 0 on this assignment.***

*Go to [www.dreammoods.com](http://www.dreammoods.com)*

1. Based on the homepage of this website, to which dream theory do you believe the website authors are most likely to subscribe
   a. Freud- Wish Fulfillment
   b. Information-Processing Theory “aha”
   c. Hobson- Neural Misfires
   d. Extension of waking consciousness

2. Click on any dream theorist other than Freud.
   a. Name of Theorist
   b. Summary of Theory

*Use the links on the Left Side of the Site*

3. Choose any 3 “common dreams” and summarize their meaning according to the site.
   a. Type of Dream
   i. Summary

   b. Type of Dream
   i. Summary
Name ___________________________________________________________
Date ____________________________
Hour ____________________________

c. Type of Dream ____________________________  
i. Summary

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________

*Under Dream Research (on left), Click Importance of Dreams.
4. DEFEND the statement "Everyone has to dream." Cite specific information from
   the study mentioned in this section of the website.
   ________________________________________
   ________________________________________
   ________________________________________
   ________________________________________

*Under Types of Dreams (on left), choose any 3 types to summarize.
5. Type ____________________________  
a. Summary
   ________________________________________
   ________________________________________
   ________________________________________
   ________________________________________
6. Type ____________________________  
a. Summary
   ________________________________________
   ________________________________________
   ________________________________________
   ________________________________________
7. Type ____________________________  
a. Summary
   ________________________________________
   ________________________________________
   ________________________________________
   ________________________________________
8. Once you have completed the above research, you are to spend any remaining
   time researching any dream topic (on this website) that you find interesting.
   You cannot sleep or do other work and you MUST remain on this website only!!!
1. What is the proper, biological name of marijuana?
   
   a. Cannabis exotica 
   b. Cannabis sativa 
   c. Cannabis saliva 
   d. Cannabis punjata 

2. What is the name of the active chemical in marijuana?
   
   a. delta-9 ethanol dehydrogenase 
   b. delta-Fos-B 
   c. delta-9 tetrahydrocannabinol 
   d. delta gamma 

3. How long does it take for marijuana to reach peak levels in the brain?
   
   a. 10 seconds 
   b. 90 seconds 
   c. 10 minutes 
   d. 90 minutes 

4. How long after smoking marijuana are mental and physical abilities weakened?
   
   a. One hour 
   b. Three or four hours 
   c. Twelve to sixteen hours 
   d. Twenty-four hours 

5. What percentage of teenagers try marijuana at least once before graduating from high school?
   
   a. Less than 10% 
   b. About 25% 
   c. Less than 50% 
   d. Almost 75% 
   e. Over 90%
6. Which of the following statements is the most true?
   a. Smoking marijuana has little effect on someone’s ability to drive a car.
   b. Smoking marijuana is less damaging to someone’s ability to drive a car than alcohol is.
   c. People who have been smoking marijuana do not have much trouble passing roadside sobriety ("drunkenness") tests.
   d. People who have been smoking marijuana have just as much trouble passing roadside sobriety ("drunkenness") tests as people who have been drinking.
   e. People who have been smoking marijuana have more trouble passing roadside sobriety ("drunkenness") tests than people who have been drinking.

7. How does risk of lung cancer for a marijuana smoker compare to a tobacco smoker’s risk?
   a. Marijuana causes little risk of lung cancer.
   b. Marijuana contains about 50% more of the cancer-causing chemical benzopyrene than tobacco contains.
   c. Marijuana contains about 50% less of the cancer-causing chemical benzopyrene than tobacco contains.
   d. Marijuana contains a larger number of cancer-causing chemicals in greater amounts than tobacco contains.

8. THC "mimics" which neurotransmitter in the brain?
   a. Anandamide
   b. Serotonin
   c. Dopamine
   d. Norepinephrine
   e. Epinephrine

9. Which of the following statements about THC is false?
   a. It interferes with the formation of short-term memory.
   b. It gets in the way of coordinated movement.
   c. It affects how the user integrates emotions with actions.
   d. It stimulates, or speeds up, brain and body functions.

10. Which of the following is not a short-term negative effect of marijuana use?
    a. Problems with memory and learning.
    b. Inability to sleep.
    c. Distorted sense of sight.
    d. Elevated heart rate.
    e. Increased risk of injury.
11. Does marijuana deposit tar in the lungs, the way tobacco smoking does?
   a. No.
   b. Yes, but somewhat less than tobacco
   c. Yes, about the same as tobacco.
   d. Yes, about two times as much as tobacco.
   e. Yes, about five times as much as tobacco.

12. How does marijuana affect a male’s ability to father a child?
   a. It makes him impotent and sterile.
   b. It kills most of the sperm cells in his body.
   c. It decreases sperm count.
   d. It decreases sperm count and make abnormal sperm.
   e. It has no effect on a male’s ability to father a child.

13. What effect does marijuana not have when used during pregnancy?
   a. Increases the miscarriage rate.
   b. Causes severe facial and limb abnormalities.
   c. Causes lower birth weight, leading to health problems.
   d. May cause brain damage in the fetus.

14. What is amotivational syndrome?
   a. Psychological addiction to using marijuana
   b. Loss of interest in goals and life outside of marijuana use
   c. Lack of sense of humor and creativity due to marijuana use
   d. Increase in aggression, anger, and violence due to marijuana use

15. Which of the following signs of addiction do most marijuana abusers not suffer?
   a. Withdrawal symptoms: heavy sweating, abdominal cramps, racing heart, nausea, and dizziness
   b. Increased tolerance (the need for more and more to feel the same effect)
   c. Compulsive drug craving and drug seeking
   d. Continued use despite negative consequences in life
<table>
<thead>
<tr>
<th>Biological/Genetic Indicators for Addiction</th>
<th>Psychological Indicators for Addiction</th>
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<td>5.</td>
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<tr>
<th>Social Setting Related Indicators for Addiction</th>
<th>Cultural Indicators for Addiction</th>
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</thead>
<tbody>
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<tr>
<td>5.</td>
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</table>
Drugs IQ Test

1. "Special K" is a PCP-like drug that can cause users to believe they've been contacted by extraterrestrials.
   a. True
   b. False

2. Hash oil is derived from hashish and rarely contains other drugs.
   a. True
   b. False

3. Which can increase the risk of HIV infection?
   a. Alcohol
   b. Rohypnol
   c. Heroin and/or other IV drug usage
   d. All of the above

4. Which of the following drugs is most often linked to incidents of date rape?
   a. Rohypnol
   b. Cocaine
   c. Alcohol
   d. Meth

5. The main active ingredient in most forms of "herbal ecstasy" is:
   a. St. John’s Wort
   b. Ephedrine
   c. Users imagination
   d. None of the above

6. "Ecstasy" is:
   a. An amphetamine-based hallucinogen
   b. A powerful barbiturate
   c. An orange powder with purple flavor crystals
   d. A synonym for nirvana

7. What's the best treatment for heroin overdose?
   a. Mouth to mouth resuscitation
   b. Induce vomiting
   c. Take a laxative
   d. Just let them die

8. Does cocaine produce dependence?
   a. Yes
   b. No
   c. Infrequently
   d. In 50% of users
9. Which is used in Native American religious ceremonies?
   a. Bhang
   b. Ganja
   c. Peyote
   d. Guarana

10. Which class doesn't cause physical dependence?
    a. Opiate
    b. Hallucinogens
    c. Barbiturates
    d. Alcohol

11. "Designer drugs" are:
    a. Safe when taken as directed
    b. Copycat chemicals designed to mimic illegal drugs
    c. Made in 3rd world sweatshops by child chemists
    d. Always deadly

12. Alcohol contains about how many calories per ounce?
    a. 75
    b. 125
    c. 200
    d. 350

13. The most potent form of marijuana or cannabis is:
    a. Hashish
    b. Kif
    c. Ganja
    d. Aguablong

14. Which is most likely to trigger overdose with alcohol?
    a. Marijuana
    b. Amphetamine
    c. Barbiturates
    d. Sleep

15. What side effects are linked to long-term use of anabolic steroids?
    a. Heart Disease
    b. Severe Acne
    c. Impotence
    d. All of the above
16. Which drug causes the most proven birth defects?
   a. LSD
   b. Marijuana
   c. Alcohol
   d. Heroin

17. The most-widely used tranquilizer in America is:
   a. Xanax
   b. Darvon
   c. Valium
   d. C-Span

18. A cheap, smokable form of cocaine is known as:
   a. Snap
   b. Crack
   c. Pop
   d. Rock
   e. Both B and D

19. On the street, PCP is sold as:
   a. Angel Dust
   b. Tic
   c. Wac
   d. All of the above

20. "Ice" is a smokable form of which drug?
   a. Methampetamine
   b. LSD
   c. Cocaine
   d. Barbituate
Drug Altered Consciousness
Note Guide

Psychoactive Drugs are:

Drugs are a bigger problem now than historically because:
1. 
2. 
3. 

<table>
<thead>
<tr>
<th>The Three Categories of Psychoactive Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressants</td>
</tr>
<tr>
<td>Examples:</td>
</tr>
<tr>
<td>Characteristics:</td>
</tr>
</tbody>
</table>

Long Term Use of Pot Causes:

Abuse stems from any or all of the following:
* Biology/Genetics  * Psychology  * Social Setting  * Cultural Factors
Up in Smoke: Marijuana Toasts Memory

By Robert Roy Britt, LiveScience Managing Editor
posted: 13 March 2006 04:01 pm ET

If you can't remember the headline of this article or are already struggling to recall some of the words at the beginning of the story, try hard to recall how much pot you smoked in your youth.

A new study finds those who've used a lot of marijuana have worse memories and don't think as quickly.

It's not the first study to suggest pot hurts memory, but the findings are stark. In one memory test, long-time users remembered seven of 15 words, on average. Non-users remembered 12 of 15. On a decision-making test, those who had rarely smoked pot had impaired performance 8 percent of time, while long-term tokers had 70 percent impairment.

The results are detailed in the March 14 issue of the journal Neurology.

The study involved 64 people age 17 to 49 selected from a larger study group. They were split into three groups: those who had smoked four or more joints per week for more than 10 years; those who'd been smoking for five to 10 years; and those who had smoked at least once but not more than 20 times and not at all in the past two years.

The middle group consistently scored in between the other two.

"We found that the longer people used marijuana, the more deterioration they had in these cognitive abilities, especially in the ability to learn and remember new information," said Lambros Messinis of the Department of Neurology at the University Hospital of Patras in Patras, Greece.

A separate study in Neurology last year found higher blood flow velocity in the marijuana users even a month after they stopped smoking. Researchers said the change could help explain other studies that have revealed memory problems in pot smokers.

A Harvard Medical School study in 2003 found lasting memory impairment in people who had started smoking marijuana before age 17, when the brain is still forming.

And research published in November indicated that heavy marijuana use might put adolescents who are genetically predisposed to schizophrenia at greater risk of developing the brain disorder.

Some 3.1 million Americans age 12 and older use marijuana daily or almost daily, according to the National Institute on Drug Abuse. In 2004, 5.6 percent of 12th graders reported daily use of marijuana.
Up in Smoke: Marijuana Toasts Memory

Directions: Read the article, *Up in Smoke: Marijuana Toasts Memory*. Using the information provided in the article, write a letter to someone (real or fictional) that you know who uses marijuana on a regular basis (don’t use any identifying names, please) describing to them why they should quit. Cite at least 3 pieces of factual evidence (from the article and/or class) to help them understand the seriousness of chronic usage of this drug. Underline or highlight all evidence.

Dear __________________________,

__________________________________________
__________________________________________
__________________________________________
__________________________________________
__________________________________________
__________________________________________
__________________________________________
__________________________________________
__________________________________________
__________________________________________
__________________________________________

Sincerely,
Diagnosis and Drugs: You Be the Doctor

Directions: For Part I: Below is a table of drugs that are commonly used in the medical and psychological field and are known to create an altered state of consciousness in the person taking them. You have been given several scenarios in which you must be the physician and prescribe the drug that you think would best help your patient. You must also include the intended effect of the drug on the patient, as well as any possible side effects. For Part II, you will be given a description of a patient in which you must diagnose which substance he/she has been abusing and explain your reasoning for your conclusion.

<table>
<thead>
<tr>
<th>Heroin</th>
<th>Phenobarbitol</th>
<th>Alcohol</th>
<th>Amphetamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valium</td>
<td>LSD</td>
<td>Marijuana</td>
<td>Cocaine</td>
</tr>
</tbody>
</table>

1. A mother comes into your office after having her child tested for ADHD. The doctors have found no Central nervous damage and are recommending he begin drug therapy for his symptoms. Prescription:
   Intended Results:
   Possible Side Effects:

2. Your patient comes in complaining of temporary insomnia. She believes that she is only experiencing a short term sleeping problem and wants to take a medication that she will only need for about two weeks or so. Prescription:
   Intended Results:
   Possible Side Effects:

3. Your patient comes into your office suffering from severe muscle spasms due to a motorcycle accident. He needs a drug with a tranquilizing effect that will help him get through the initial pain of his therapy after his accident.
   Prescription:
   Intended Results:
   Possible Side Effects:

For Part II, you will be given a description of a patient in which you must diagnose which substance he/she has been abusing and explain your reasoning for your conclusion with evidence from your research.
1. A patient is brought in from a fraternity party who is experiencing severe hallucinations. He is experiencing extreme paranoia, increased heart rate and has dilated pupils. He was brought into your hospital after attempting to fly off of the roof of his apartment.
   Drug of Use: ____________________________
   Evidence:

2. A girl is brought into your hospital suffering from severe malnutrition. She has not eaten in over a week and her pupils are shrunken to the size of a pin point. Her veins have begun to collapse and she is experiencing dry heaving and nausea.
   Drug of Use: ____________________________
   Evidence:

3. A patient comes into your office experiencing nausea, vomiting and extreme paranoia. He has also been experiencing enhanced sounds and colors, while claiming that this is his first experience with any kind of illegal drug.
   Drug of Use: ____________________________
   Evidence:

4. A 40 year old man enters your office complaining of heavy sweats and yellowing of his skin. After an exam you find that the kidneys and liver of this patient are functioning at a very weakened level, and the man is also experiencing high levels of depression.
   Drug of Use: ____________________________
   Evidence:

5. A 32 year old women comes into your office experiencing a tingling, itching feeling that resembles bug bites all over her body. After finding no sign of allergic reaction, you also learn that the woman experiences frequent nosebleeds, has difficulty swallowing and experiences frequent auditory hallucinations (she hears things).
   Drug of Use: ____________________________
   Evidence:
Drug Report

Research Paper Basics:
1. Due Wed, 3/24- you will have an assigned classroom to work on this today and Monday. All other work must be done on your time.
2. You must use 4 sources (cite them in text and on works cited page). 1 MUST be from a book, the rest can be from reputable online sources (NO wikipedia).
3. 2-3 pages typed
   a. Times New Roman Font size 12.
   b. 1 inch margins
   c. 1 ½ spaced (NOT double)
   d. Cover page should include Title, your name, hour, etc and does NOT count toward your page minimum.
4. Your body of work must address at least 7 of the 13 concepts listed below.

Concepts for Consideration:
- Chemical Structure and/or Natural Origin
- US drug classification
- Original/intended use
- Likelihood of forming dependence or tolerance
- Severity of Addiction
- Typical addictive behaviors associated with the drug
- Side-effects of the drug: physical, emotional, psychological/mental, family
- Rehabilitation and Treatment options
- Withdrawal symptoms
- % of people for whom rehabilitation does not work
- Relationship to Crime
- Legal Ramifications for possession
- Estimated number of US or World addicts
- Impact of this drug on society

Your are assigned to research ___________________________