

Name: _____

Directions: The following exam consists of 26 questions, for a total of 102 points with 2 bonus points. Read each question carefully (note: answers may break onto the next page).

*For each question, choose one and only one (the best) answer (unless the question states otherwise). In cases where you are asked to choose all that apply, it is possible that the **all** or **none** of the options are correct. Finally, note that “iff” stands for “if and only if”.*

1 Multiple Choice

1.1 Basic Concepts

1. (3 points) What is meant by full coverage of the physical sciences?
 - A. The physical sciences have full coverage over what we can know if and only if *most* of what can be known is determined by the physical sciences.
 - B. The physical sciences have full coverage over what we can know if and only if *all* that can be known is determined by the physical sciences.
 - C. The physical sciences have full coverage if and only if physics can explain the laws of biology.
 - D. The physical sciences have full coverage if and only if physics can explain the laws of biology, chemistry, and astronomy.
2. (3 points) What is a pseudoscience?
 - A. a group of propositions, practices, and attitudes that is not science.
 - B. a systematic body of propositions, practices, and attitudes that gives the appearance of being a science but is not
 - C. a group of propositions, practices, and attitudes that studies objects beyond the senses.
 - D. a group of mostly true statements accepted by individuals both in and outside of the pseudoscientific community.
3. (3 points) Pseudoscience is characterized by two different kinds of properties. What are these properties? (indicate two)
 - A. physical properties
 - B. surface properties
 - C. depth properties
 - D. paranormal properties
 - E. supernatural properties
4. (3 points) What is the main (general) reason why finding demarcation criteria has been so difficult?
 - A. because there is no true criteria that distinguishes science from non-science.
 - B. because proposed criteria thus far has either overdetermined or underdetermined what counts as science.
 - C. because not only must demarcation distinguish science from pseudoscience, but it also must distinguish it from non-science.

- D. because not only does the criteria need to distinguish between science and pseudoscience, but also between good science and bad science (sloppiness, bad data collection, poor experimental design)
5. (3 points) Has the number of people who believe in pseudoscience and/or the paranormal increased or decreased in the last twenty years?
- A. decreased
 - B. increased
 - C. no change
6. (3 points) Under what conditions is a phenomena P paranormal? (indicate all and only those that apply to the definition of “paranormal”)
- A. P is studied in what looks like a “scientific” fashion
 - B. P is not explainable in terms of current scientific theory
 - C. P cannot be explained scientifically without significant revision to current scientific theory
 - D. P deviates from our normal expectations about things associated with P
 - E. P has properties that appear to be investigated scientifically
7. (3 points) What are demarcation criteria for science?
- A. a nonspecific set (a cluster) of properties – used to distinguish science from nonscience and pseudoscience – that a practice must have *some significant* combination of in order to count as a science.
 - B. a specific set of properties – used to distinguish science from nonscience and pseudoscience – that a practice must have *all* of to qualify as a science.
 - C. a specific list of disciplines that count as science as opposed to nonscience and pseudoscience.
8. (3 points) What are delineation criteria?
- A. a nonspecific set (a cluster) of properties – used to distinguish science from nonscience and pseudoscience – that a practice must have *some significant* combination of in order to count as a science.
 - B. a specific set of properties – used to distinguish science from nonscience and pseudoscience – that a practice must have *all* of to qualify as a science.
 - C. a specific list of disciplines that count as science as opposed to nonscience and pseudoscience.
9. (3 points) What is creationism?
- A. the theory that all organisms were created through purely natural processes
 - B. the claim that objects and features of the universe are best explained through the existence of some unknown nevertheless intelligent designer
 - C. the theory that the universe and all life on earth originated in an act of divine creation and that the Genesis creation account in the Bible should be interpreted literally
 - D. the theory that human beings have the power to create complex organisms either by way of selective breeding or genetic engineering.
10. (3 points) What is intelligent design (ID)?
- A. ID is the claim that the earth and all life was created exactly how the book of Genesis (from the Old Testament of the Bible) states.

- B. ID is the claim that evolution by natural selection (Darwinian theory) is true and evolution involves the creation of complex organisms with highly “intelligent” features.
 - C. ID is the claim that objects and features of the universe are best explained through the existence of an intelligent and divine creator.
 - D. ID is the claim that human beings play a role in the evolution of species, e.g. either intentionally through genetic engineering or by way certain cultural events.
11. (3 points) Of the five sociological groups that believe in pseudoscience/paranormal, which best describes those that believe in astrology (this is also the one we covered in class / handout / text)
- A. cranks
 - B. grass-root groups
 - C. client-practitioner group
 - D. religious groups
 - E. individuals who practice the form of science but do not partake in the content of science
12. (3 points) What is the structure of argument employed by each of the investigators in the show *Paranormal Home inspectors*?
- A. a homeowner experiences some phenomena p a repeated number of times. The homeowner makes a hypothesis h concerning p , tests to see whether h is true. When h is falsified, the homeowner knows *not* h is the case instead.
 - B. a homeowner experiences some phenomena p s/he cannot explain. An individual makes an instinctive judgment concerning the truth or falsity of p . They then conclude whether p is true or false.
 - C. a homeowner experiences some phenomena p s/he cannot explain. An explanation e purportedly best explains p . Therefore, e is the case.
 - D. each makes use of the Bayesian approach to reasoning.
13. (3 points) What is astrology?
- A. a system of thought that predicts the movement of heavenly objects (e.g. planets, stars, even solar systems) by relying on Greek mythology.
 - B. a rigorous, and mostly formalistic (mathematical) branch of astronomy
 - C. a system of thought that contends that the size, location, and movement of planets, the sun, and the moon influence both the behavior and the destiny of human beings.
 - D. a system of thought used to cure individuals with illnesses for which there are no known scientific medical treatments
14. (3 points) In the case against the Dover School Board, what two things did the prosecution have to prove in order to show that intelligent design should not be taught (at all) in schools?
- A. that the Dover School Board were aiming to indoctrinate students in the Christian religion
 - B. ID was simply another name for creation-science
 - C. ID was not science.
 - D. that the Dover School Board were trying to discredit evolution
 - E. that the Dover School Board were really religious fanatics who, with the TMLU, aimed to convince young people that evolution is false and intelligent design is true.
15. (3 points) Astrologers / fortune-tellers often perform “cold-readings”. Why are cold-readings convincing?

- A. astrologers search the stars for signs unique to that individual (e.g. using their astrological sign) *and* they use additional information from that individual, especially lines in the palm of the hand; they then use this information to determine what that person will do in the future. Their predictions come true and people reason “how could the astrologer make these startling predictions if their craft wasn’t reliable?”
- B. astrologers channel information from beyond the grave to make startling (and testable) predictions about the future; they then use this information to determine what that person will do in the future. Their predictions come true and people reason “how could the astrologer make these startling predictions if their craft wasn’t reliable?”
- C. these readings fit almost everyone, tend to be accurate about things people care about, and, when specific, they often tend to be based upon information everyone can know just by looking. Given their accuracy and personal nature, people reason “how could the astrologer know this about me if their craft wasn’t reliable?”
- D. astrologers search the stars for signs unique to that individual (e.g. using their astrological sign), they then use this information to determine what that person will do in the future. Their predictions come true and people reason “how could the astrologer make these startling predictions if their craft wasn’t reliable?”
16. (3 points) Individuals who believe or practice pseudoscience are regarded as **deviants** by the scientific community. What does this mean?
- A. they deviate from the norm
- B. they make claims that are evaluated without prejudice (that is, in an unbiased manner); they are not scientific insiders but they are, nevertheless, given a fair and frequent hearing.
- C. they evoke a negative reaction from a certain social group.
- D. they are peers of fellow scientists.
17. (3 points) What establishes the separation of Church and State in the United States?
- A. Establishment clause of the first amendment
- B. third amendment
- C. second amendment
- D. fifth amendment (I plead the fifth!)
- E. fifteenth amendment
18. (3 points) What was the name of the book that the Dover School District (along with the TMLC) tried to make available to public school children?
- A. *Creationism: An Introductory Guide*
- B. *Creationism: A Textbook for Dover School District*
- C. *Of Pandas and People*
- D. *Intelligent Design: A Scientific Treatment*
- E. *Intelligent Design: A Scientific Treatment of the Origin of Life*
19. (3 points) Which characterization best describes the general-purpose (Social Science) Model of the Mind?
- A. The model of the mind that treats the mind like a specialized, mosaic-like machine that takes highly-specific information and performs lightning quick operations upon it.
- B. the model of the mind that treats the mind like an evolving blob-like device that absorbs every bit of information from its surroundings.
- C. The model of the mind that contends that the mind is a broad-purpose learning device that receives information from the external world and/or culture.

- D. the model of the mind that takes the mind to be the result of an evolutionary process – evolved to solve highly specific problems.
20. (3 points) Which characterization best describes the Modular (Nativist) Model of the Mind?
- A. The model of the mind that contends that the mind is a broad-purpose learning device that receives information from the external world and/or culture.
 - B. the model of the mind that treats the mind like an evolving blob-like device that absorbs every bit of information from its surroundings.
 - C. The model of the mind that takes the mind to be a collection of multiple, innate, content-rich, domain-specific structures.
 - D. the model of the mind that takes the mind to be an immaterial, soul-like substance capable of abstract reasoning.
21. (3 points) What is essentialism?
- A. the view that entities do **not** have certain necessary characteristics that underlie the thing, that are unchanging, shared by all members of the species, and cause the thing to do what it does.
 - B. the view that entities only have observable, surface properties, and while there is some overlap, there is no common set of properties that all members of a species share.
 - C. the view that entities have certain necessary characteristics that underlie the thing, that are unchanging, shared by all members of the species, and cause the thing to do what it does.
 - D. the view that every entity has distinct properties and that no members of a species have the same properties.
22. (3 points) What is a heuristic?
- A. a method, tool, or technique that solves a problem slowly and accurately rather than quickly.
 - B. a step-by-step approach to a problem that is written out in such a way that any individual can follow the approach and solve the problem.
 - C. a method, tool, or technique that solves a problem more quickly than alternatives at the expense of exactness/accuracy.
 - D. a sort-of intuitive to approach to a problem that is not rooted in evolutionary theory or science, but is instead associated with some sort of paranormal knowing.
23. (12 points) What is parapsychology? If parapsychological researchers are highly educated individuals, trained in scientific fields, and make use of the methods of science to investigate psi, then why isn't parapsychology a science? (Give both reasons considered)
24. (12 points) What was Arkansas Act 590 of 1981? What did it try to establish? Give two arguments by its supporters for why it should be supported.
25. (12 points) Explain the three heuristics that creationism leverages (taps into, makes use of, relies upon) to persuade people that creationism is an alternative to evolution?
26. (2 points (bonus)) What was your favorite part of the course?