

8 FEB

Duke University Tossups

1. Among his numerous works are Bend Sinister, The Defense, Despair, The Eye, Invitation to a Beheading, Laughter in the Dark, Look at the Harlequins!, Mary, Pnin, Speak, Memory, Strong Opinions, and Transparent Things. For 10 points, name this Russian-American author best known for Ada, or Ardor, Pale Fire, King, Queen, Knave, and Lolita.

ANSWER: Vladimir Nabokov

2. In response to this document, the sections, which were radical workers also known as sans-coulottes, decided to invade the Tuileries on August 10, 1792. Louis XVI, then, fled to the meeting of the National Assembly to plead for his safety. Announced on July 25, 1792, it threatened that if the French people did anything to harm Louis XVI, the Prussian and Austrian armies would attack Paris without mercy. For 10 points, name the document.

ANSWER: the Brunswick Manifesto

3. The value of this scientific process lies in the fact that the effective field at a nucleus in a compound depends upon its electron distribution, and thus, its chemical environment. It provides information upon which to configure the quality and quantity of the presence of specified atoms. Analysis is based on peak areas of magnetic field intensity based on the above principles from proton or carbon atoms. For 10 points, name this analytical process accomplished with a spectrometer.

ANSWER: NMR or Nuclear Magnetic Resonance or MRI or Magnetic Resonance Imaging

4. In an appendix to The Sound and the Fury, William Faulkner tells about the subsequent history of the lives of characters Quentin MacLachlan, Charles Stuart, Jason Lycurgus, Quentin III, Jason IV, Candace, Benjamin, TP, Frony, and Luster. However, when speaking of this character, he simply said, "They endured." For 10 points, name the character, the maid of the Compson family and subject of the last quarter of the novel.

ANSWER: Dilsey

5. Classical music in the Viennese Classical Style often used a certain typical genre which was very light and frivolous presented in several movements. Many composers during the middle of the 18th century used this simple, light, but empty music in order to amuse, entertain, and divert its audience. For 10 points, name this style of music, often used by Johann Christian Bach which comes from the Italian for "amusing".

ANSWER: divertimento

6. He is widely regarded as one of the greatest architects of the international style. In 1936, at age 27, he was working for Lucio Costa and Le Corbusier, and his first major achievement was helping design his nation's pavilion at the New York World's Fair in 1939. He was on the team of architects that designed the UN in New York, and he designed the French Communist building in Paris. But he is best known by far for designing the new airplane-shaped capital of his home country. Name this Brazilian architect.

ANSWER: Oscar Niemeyer

7. In his 1798 work, he started with two postulates: "that food is necessary for existence", and that the passion between the sexes is necessary and will remain. He concluded that while the world's population would increase by doubles, food supply would increase linearly, projecting a pessimistic view of future subsistence. FTP, name this controversial social scientist, author of the influential pamphlet Essay on the Principles of Population.

ANSWER: Thomas Malthus

8. In 1864 a Massachusetts Congressman sold stock in a company to his fellow congressmen at a huge, illegal discount, and many of them received huge dividends as a result. When Oakes Ames's misconduct came to the public's attention in 1872, implicating Vice President Schuyler Colfax and then congressman James A. Garfield as well, and raised the issue of lax ethical standards in Congress. FTP, give the name of this construction company that built the Union Pacific Railroad at inflated prices under government contract, and you have named the scandal.

ANSWER: the Credit Mobilier

9. You probably know that Professor Ian Malcolm returns in The Lost World by Michael Crichton, which takes its name from a novel by Sir Arthur Conan Doyle. Doyle's protagonist, the analogue to Malcolm, has an appropriately adventurous last name. For ten points, give this name which he shares with the British ship which produced the first maps of the ocean floor in 1872 and the ill-fated space shuttle of 1986.

ANSWER: \_Challenger\_

10. During the Cambrian Period, they were generally created by enigmatic, sessile, cup-like sea creatures called Archaeocyathids. Theories of their growth and change have been proposed by both Reginald Daly and Charles Darwin. Three general types are recognized based on geometric form and location: fringing, barrier, and atolls. For 10 points, identify this type of natural underwater structure normally associated with coral.

ANSWER: \_reefs\_

11. In the late summer of 1970, U.S. intelligence sources noted something odd occurring at a Cuban port: a soccer field had been cleared. According to a statement made by Secretary of State Henry Kissinger, this was the tip off: "As an old soccer fan I knew the Cubans did not play soccer...this stamped it indelibly as a Russian base." FTP name the Cuban port of "one hundred fires" at which the Soviets were attempting to construct a submarine base.

ANSWER: \_Cienfuegos\_

12. Located off the coast of the Anatolia, this Aegean island's primary Mycenaean settlements were Antissa and Thermi. By the 5th century B.C. Eresus, Methymna, and Mytilene had become the dominant cities on the island. FTP give the name of Sappho of Mytilene's home island, which contrary to conventional wisdom is inhabited by heterosexual men and women.

ANSWER: \_Lesbos\_

13. This artificial line is drawn so as to divide the bird populations of the Indonesian archipelago into a region dominated by Asian species and a region dominated by species associated with Australia species. FTP, what is this line, named for the naturalist who with Darwin co-discovered natural selection.

ANSWER: \_Wallace's Line\_

14. He conquered what is now Afghanistan, Baluchistan, and Sri Lanka. His remorse over the deaths of 100,000 people and the great damage caused by his conquest of Kalinga lead him to his strong Buddhist conviction and the practice of ahimsa, the non-injury of living creatures. FTP, name this 3rd ruler of the Mauryan Dynasty of India, known for his zeal in propagating Buddhism.

ANSWER: \_Asoka\_

15. This post-impressionist gave up his job as an exchange clerk to become a professional painter in 1883. Never able to consistently sell his paintings such as "Vision After the Sermon", he lived a life of urban poverty in Paris until his departure to Martinique and French Polynesia. FTP, name this artist famous for his paintings of Tahitian women.

ANSWER: Paul \_Gauguin\_

16. In genetics, this is a unit of genetic function common in bacteria and phages and consists of regulated clusters of genes for a specific function. The clusters include a promoter, an operator, and structural units, and is controlled by a regulatory unit located some distance away from the operating unit. An example of its function is the control on the synthesis of tryptophan. FTP, give the term.

ANSWER: \_operon\_

17. This book, written in 1968, won awards as the New York Times Outstanding Book of the Year and as a Newberry Honor Book among others. It recounts the experiences of women, men, and children of the nineteenth century that lived through slavery. For 10 points, name this powerful book, written by Julius Lester.

ANSWER: \_To Be a Slave\_

18. You would find such landmarks as the Rodriguez Ridge, the Mascarene Plain, the Chagos-Laccadive Ridge, the Ninety East Ridge, the Wilkes Rise, the Java Trench, and the Ganges Fan there. For ten points, on the floor of what large body of water would you have to look?

ANSWER: the Indian Ocean

19. Edward Lewis, Christine Nusslein-Vohard, and Eric Wieschaus recently won this year's Nobel Prize in Medicine for their studies of gene control on embryonic development. Their research involved a particular species, which has been popular among geneticists ever since the basics of heredity were established by Thomas Morgan. For ten points, give the full genus and species name of this vinegar fruit fly.

ANSWER: Drosophila melanogaster (Reader: prompt for more if "fruit fly" given)

20. The Equestrian Statue at Gattamelata, Mary Magdalen, The Feast of Herod, Prophet, St. Mark, St. George are all sculptural works of this early Italian Renaissance artist. For ten points, name this pupil of Ghiberti who is perhaps best remembered for his creation during the 1430s of a bronze free-standing nude statue of the young David.

ANSWER: Donatello

21. Jack Kramer won men's singles title at Wimbledon, James Michener published "South Pacific," chemist Frank Libby discovered carbon-14, the Code of Hammurabi was discovered, the Taft-Hartley Act was passed, Britain set up Pakistan as an independent state, and the U.S. Secretary of State announced his "Marshall Plan" for European recovery. All of these events, FTP, happened during which year?

ANSWER: 1947

22. This literary genre, popular in nineteenth century, is a novel about the moral and psychological growth of the main character. The story is told using a first-person narrative, through which the author gives a social critique. FTP, give this term, taken from a German word meaning "educational novel".

ANSWER: Bildungsroman

23. In 1837, a man seized a slave woman and her children and took them back to their slaveholder in Maryland. He was later charged with kidnapping but appealed to the Supreme Court. In its decision, the Court upheld the fugitive slave law of 1793, but ruled that its enforcement was a federal responsibility. For 10 points, name this 1842 case which opened the floodgates to many personal liberty laws banning state facilities in the recapture of slaves.

ANSWER: Prigg v. Pennsylvania

24. For 10 points, convert the number AC in base 16 to a binary number.

ANSWER: 10101100 (just convert each digit in base 16 to base 2 and put them together)

25. Of sucrose, maltose, lactose, cellulose, galactose, and amylose, which is a simple sugar?

ANSWER: galactose

26. Give the equivalent resistance value of two parallel resistors with values 10 ohms and 40 ohms.

ANSWER: 8 ohms

Duke University Bonuses

1. There were seven astronauts originally in the Mercury program. The first one to go into space, of course, was Alan Shepard. For five points each, identify the other six.

ANSWER: Virgil (Gus) Grissom, John Glenn, Scott Carpenter, Walter (Wally) Schirra, Donald (Deke) Slayton, Gordon Cooper

2. Answer the following questions on the two famous one-act operas, each by a noted one-hit wonder

- a) (5 points) Give the full name of the opera commonly known as "Cav". ANSWER: Cavalleria rusticana
- b) (10 points) Name the composer of Cavalleria rusticana. ANSWER: Pietro Mascagni
- c) (5 points) Give the full name of the opera commonly known as "Pag". ANSWER: Pagliacci
- d) (10 points) Name the composer of Pagliacci. ANSWER: Leoncavallo

3. Identify these Russian lakes, given a brief description. (10 pts each)

- a) St. Petersburg lies on a strip of land between the Gulf of Finland and what lake?  
ANSWER: Lake Ladoga
- b) It contains the most water of all the world's lakes.  
ANSWER: Lake Baykal
- c) This is a rapidly shrinking salt lake into which the Syr Darya flows.  
ANSWER: the Aral Sea

4. Given some works by a philosopher, name him/her on a 10-5 basis.

- a) Genealogy of Morals, Twilight of the Idols  
ANSWER: Friedrich Nietzsche
- b) Thus Spake Zarathustra  
ANSWER: Friedrich Nietzsche
- a) General History of Nature and Theory of the Heavens  
ANSWER: Immanuel Kant
- b) Critique of Pure Reason  
ANSWER: Immanuel Kant
- a) Hebrew Grammar, Political Treatise  
ANSWER: Benedict Spinoza
- b) Ethics Demonstrated in a Geometrical Manner  
ANSWER: Benedict Spinoza

5. Does it seem like your life is in a downward spiral? Then you should have no problem identifying the following spirals, given their equations in polar form. (10 points each)

- a)  $r = a$  times theta, where  $a$  is constant  
ANSWER: Spiral of Archimedes
- b)  $r = e$  to the  $a$  theta, where  $a$  is constant  
ANSWER: Logarithmic Spiral
- c) a double spiral,  $r^2 = a$  theta, where  $a$  is constant  
ANSWER: Fermat's or Parabolic spiral

6. Answer the following questions about anthropologist Margaret Mead on a 5-10-15 basis.

(5 pts) a) In which 1928 book did she describe temperamental differences between the sexes on a Pacific Island?

ANSWER: The Coming of Age in Samoa

(10 pts) b) Who was her third husband, with whom she published Balinese Character in 1942?

ANSWER: Gregory Bateson

(15 pts) c) Name the island in the Admiralty Islands and the people with the same name she visited seven times in 47 years.

ANSWER: Manus island, or the Manus

7. Identify the following computer acronyms, 5 pts. each.

- a) FLOPS  
ANSWER: Floating point Operations Per Second
- b) LAN  
ANSWER: Local Area Network
- c) ASCII  
ANSWER: American Standard Code for Information Interchange
- d) VLSI  
ANSWER: Very Large Scale Integration
- e) RISC  
ANSWER: Reduced Instruction Set Computing (or Computer)
- f) MIPS  
ANSWER: Million Instructions Per Second

8. No religion makez greater uze of the letter Z than Zoroastrianism. Identify the following Parzi itemz, many of which begin with thiz bezt letter of the alphabet for 10 pointz each.

a) The huge pyramidal ztructurez upon which Zoroastrians placed their dead.

ANSWER: ziggurats

b) The Perzian word for "camel driver", it iz an alternate name for Zoroaster.

ANSWER: Zarathustra

c) The holy text of Zoroastrianism, containing zeventeen religiouz poemz.

ANSWER: the Zend Avesta

9. Given the subtitle of a movement in Holst's "The Planets," give the title for 5 points apiece. For example if the movement were "The Bringer of War", the answer would be Mars.

- |                             |                  |
|-----------------------------|------------------|
| a) "The Magician"           | <u>Uranus</u> ✓  |
| b) "The Bringer of Peace"   | <u>Venus</u> ✓   |
| c) "The Bringer of Jollity" | <u>Jupiter</u> ✓ |
| d) "The Mystic"             | <u>Neptune</u> ✓ |
| e) "The Bringer of Old Age" | <u>Saturn</u> ✓  |
| f) "The Winged Messenger"   | <u>Mercury</u> ✓ |

10. Answer the following questions about various laws in chemistry

a. This law states that at low to moderate pressure, gas solubility is directly proportional to the pressure.

ANSWER: Henry's Law ✓

b. This law gives the relationship between solvent vapor pressure and its concentration.

ANSWER: Raoult's Law ✓

c. The Law of Thermodynamics which states reactions proceed in the direction that increases in entropy.

ANSWER: the Second Law

11. Answer the following questions about pontiffs during the Great Schism for 10 points each.

a) The pope forced upon the college of cardinals by the Rome mob after the death of Gregory XI.

ANSWER: Urban VI ✗

b) The the French clergyman the college attempted to replace Urban VI with, causing the schism.

ANSWER: Clement VII ✗

c) The Roman nobleman chosen to be pope by the General Council held at Constance, ending the schism.

ANSWER: Martin V ✓

12. From a brief description identify the following glacial features for 10 points each.

a) These features are smooth, elongate, parrallel, asymmetrical hills composed of till. They normally occur in clusters called "fields" and can be 15 to 50 meters high and up to a kilometer long. Bunker Hill is an example.

ANSWER: Drumlins

b) These features are long, narrow, sinuous ridges compose of stratfied drift. The origin of these features is meltwater flowing through a confimed space within, on top of, or beneath a mass of motionless ice.

ANSWER: Eskers

c) This term refers to rocky debris deposited at the end of the farthest advance of a glacier.

ANSWER: Terminal Moraine

13. Given the country name its capital for 5 pts. each (Hint: The capitals all begin with the same letter as the country.)

- |                  |                    |
|------------------|--------------------|
| a) Mozambique    | ANSWER: Maputo     |
| b) New Caledonia | ANSWER: Noumea     |
| c) Niger         | ANSWER: Niamey     |
| d) Barbados      | ANSWER: Bridgetown |
| e) Guyana        | ANSWER: Georgetown |
| f) Burundi       | ANSWER: Bujumbura  |

answer: George Eliot

20. Given a class of macromolecules from biochemistry, give the type of bond that links its monomers for 10 pts. each.

- a. Carbohydrates
- b. Proteins
- c. Nucleic Acids

ANSWER: glycosidic bond

ANSWER: peptide bond

ANSWER: phosphodiester linkage

21. Given the paintings, give the artist

- a. Garden of Earthly Delights, Ship of Fools
- b. Ghent Altarpiece, Man in a Red Turban, the Wedding Portrait
- c. The Agony in the Garden, The Burial of Count Orgaz

ANSWER: Hieronymous Bosch

ANSWER: Jan van Eyck

ANSWER: El Greco

22. Given the values of the following constants from physics, identify them for five points each.

- a.  $6.6 \times 10^{-34} \text{ J}\cdot\text{s}$
- b.  $1.4 \times 10^{-23} \text{ J/degreeK}$
- c.  $1.6 \times 10^{-19} \text{ C}$
- d.  $9.65 \times 10^4 \text{ C/mol}$
- e.  $6.6732 \times 10^{-11} \text{ (N m}^2 / \text{kg}^2)$
- f.  $2.997925 \times 10^8 \text{ m/s}$

ANSWER: Planck's constant or h

ANSWER: Boltzmann constant or k

ANSWER: Electron charge or fundamental charge

ANSWER: Faraday constant or F

ANSWER: Gravitational constant or G

ANSWER: Speed of light or c

23. Identify the following from Celtic myth, for ten points each.

a) The Celtic holiday which gave rise to modern Halloween, also the name of a defunct British punk rock group fronted by Glenn Danzig.

ANSWER: SamHain

b) The celtic symbol of good luck, it is derived from the sun, and represents a wheel with broken spokes. It is more commonly associated with a more modern ideology.

ANSWER: the swastika

c) The neck rings that celts wore to indicate high status.

ANSWER: torcs

24. Answer the following questions about various types of transport proteins:

- a. Transports a single molecule across the membrane
- b. Transports two molecules in the same direction
- c. Transports two molecules in opposite directions

ANSWER: uniport

ANSWER: symport

ANSWER: antiport



14. Given the name of a European war name first the treaty which ended the war and second name the war's North American component. Five points will be awarded for each correct answer. For Example given the Seven Year's War, you would answer the Treaty of Paris and the French and Indian War.

a) The War of the Grand Alliance

ANSWER: 1) the Treaty of Ryswick 2) King William's War ✓

b) The War of the Spanish Succession

ANSWER: 1) the Treaty of Utrecht 2) Queen Anne's War ✓

c) The War of the Austrian Succession

ANSWER: 1) the Treaty of Aix-la-Chapelle 2) King George's War ✓

15. Ah, at last my midterm for my early twentieth century art history class is over! The big essay on the test was to compare and contrast "The Joy of Life" with "The City Rises." Now I get to share my pain and suffering with you. Answer these questions for 5 points each:

a. What French artist painted "Le Bonheur de Vivre" or "The Joy of Life"?

Henri Matisse ✓

b. What art movement did Matisse found?

Fauvism ✓

c. Within two years, when was "The Joy of Life" first exhibited?

1906 (accept 1904-08) ✓

d. What Italian painted "The City Rises"?

Umberto Boccioni ✓

e. With what art movement was Boccioni associated?

Futurism ✓

f. Within two years, when was "The City Rises" first exhibited?

1910 (accept 1908-12) ✓

16. How much do you know about fractals? Not much? Too bad. Answer these questions for 10 points each.

a. Name the field of research, which has influenced the study of topics such as turbulent flow, electromagnetism, and cardiology, which entails the notion of sensitivity to initial conditions.

Chaos theory

b. Chaos originated with the studies of this 1960s MIT meteorologist, who determined that a very small error in computer calculations could result in enormous changes in his predicted weather patterns. Name him.

Edward Lorenz

c. This theory holds that an insect flying around in Rio de Janeiro could have a serious result for the weather in Tokyo several weeks later.

the Butterfly effect

17. Give the name of the prominent author given one or more of his/her lesser known works. (5 pts each)

a) "John Brown, The Making of a Martyr" and "Brother to Dragons" ANSWER: Robert Penn "Warren"

b) "The Apple-Tree Table" and "Pierre" ANSWER: Herman "Melville"

c) "The White Rose of Memphis" and "Spotted Horses" ANSWER: William "Faulkner"

d) "Clock Without Hands" and "The Mortgaged Heart" ANSWER: Carson "McCullers"

e) "In Our Time" and "The Torrents of Spring" ANSWER: Ernest "Hemingway"

f) "Couples" and "Pigeon Feathers" ANSWER: John "Updike"

18. For this bonus, you're going to solve clues from a geography crossword. (10 points each)

a) 7 letters, 2nd letter "A" - Oil producing Arab island nation ANSWER: "Bahrain"

b) 8 letters, 2nd letter "A", 7th letter "I" - Russian island north of Japan. ANSWER: "Sakhalin"

c) 11 letters, 2nd letter "U", capital of Burkina Faso. ANSWER: "Ouagadougou"

19. 30-20-10. Given the works, give the English author

30: Romola, Felix Holt

20: Silas Marner, Daniel Deronda

10: Middlemarch, The Mill on the Floss