

# WIT 2002

## Round 8

Texas A&M

October 22, 2002

### 1 Toss-Ups

Individuals with this genetic disease are more susceptible to osteomyelitis caused by Salmonella as well as infections caused by encapsulated bacteria, because they lose their spleen due to autoinfarction. The namesake morphology occurs in only 1% of affected cells in heterozygotes but in up to 50% of cells in homozygotes, particularly under conditions of low oxygen tension. FTP, name this hemolytic disease, caused by the substitution of valine for glutamate on hemoglobin b-chains, whose name is derived from the crescent shape taken by red blood cells.

Answer: sickle-cell anemia

Its second capital was Sarai Berke, and it peaked under Oz Beg and won its greatest victory when it sacked and burned Kiev in 1240. The Russian princes avenged that defeat with a victory over this empire by defeating the forces of Mamai at Battle of Kulikovo. Destroyed by Tamerlane in 1395, FTP name this Khanate founded by Juchi and Batu, the son and grandson of Genghis Khan.

Answer: Golden Horde or Kipchak Khanate

It acquired Kmart Canada in 1997, adding to a department store empire that began in 1912. Their expansion into retail followed the Parliamentary Inquiry of 1857, which stripped some of their monopoly powers; they once controlled Rupert's Land, composing one third of present-day Canada. After the voyage of the Nonsuch, they obtained a 1670 charter as the "Company of Adventurers." FTP—name this oldest corporation of Canada, founded to trade furs and named for a large body of water.

Answer: Hudsons Bay Company

Theodore Roosevelt dedicated a plaque to it in 1903 calling its delivery "one of those memorable scenes in accordance with which the whole future of a nation

is molded." It was stated north of the Brewster House in response to a question concerning situations prior to the formation of state constitutions. The answer stated that the people of a territory could exclude slavery because slavery could not exist without the support of local police. FTP, identify Stephen Douglas's response to a question by Abraham Lincoln, named for the Illinois city where the debate took place.

Answer: Freeport Doctrine

The solution to Hilbert's second problem, in basic form it generalizes the 'Epimenides Paradox.' It may be stated as 'For every omega-consistent primitive recursive class  $k$  of FORMULAS, there exists a primitive recursive class expression  $r$  such that neither  $v\text{-Gen-}r$  nor the negation of  $v\text{-Gen-}r$  belongs to  $\text{Flg}(k)$ '. Named for a Austrian Mathematician, FTP name the theorem which states that all consistent axiomatic formulations of number theory include undecidable propositions.

Answer: Godel Incompleteness Theorem

Entering service in 1955, the first of the A series flew in 1954 and the first of the H series was delivered in 1962; only the latter remains in service. Designed to hold a crew of 5 and carry up to 244 tons, it can drop conventional bombs, carry an X-15 to altitude, or launch cruise missiles. Used in Vietnam and the Gulf War to perform "carpet bombing", FTP name the Boeing strategic bomber commonly referred to as the Stratofortress.

Answer: B-52 Prompt: Stratofortress

Its preface uses Goldsmith's *Deserted Village* as to show that powerful arguments and high poetic charms do not necessarily convince. Written while its author was campaigning in Savoy for deputy to the French National Assembly, it celebrates the glories of American simplicity over the decadence of Europe. Name this three canto mock epic by Joel Barlow about a flour and milk breakfast dish, and, for 10 points, you also name North America's oldest theatrical group, the Harvard society that bestows Man and Woman of the Year awards.

Answer: The Hasty Pudding (the group is the Hasty Pudding Society)

Born to an interracial family, he flunked out of the 9th grade in Pittsburgh, where he co-founded the Black Horizons Theatre and set all but one of his plays. He used a cab company as the setting for his first play, *Jitney*, the 1970s segment of a projected 10 play cycle on the twentieth-century African-American experience. FTP-name the playwright, whose other segments of that cycle include *Moon Going Down*, *King Hedley II*, and *Ma Rainey's Black Bottom*, *The Piano Lesson* and *Fences*.

Answer: August Wilson

Mr. Carmichael becomes a successful poet. Prue marries and dies in childbirth. Andrew enlists, is sent to France to fight the First World War, and is killed by

an exploding shell. The mother dies in her sleep. Lily Briscoe returns to the Isle of Skye to attempt to finish her picture of the cottage from whose window James and Camilla saw the title black and white striped structure to which James sails. They appear in—for 10 points—which novel about the Ramsey family by Virginia Woolf?

Answer: To The Lighthouse

An attempt to capture ammunition from Phoenix Park was unsuccessful, as was a similar endeavor of Sir Rodger Casement, after which Eoin MacNeill recommended calling it off. The tide began to turn when Liberty Hall was destroyed by shellfire from the gunboat Helga, though gunfire killed many civilians. FTP, name this uprising crushed by the British which began on April 24, 1916 in Dublin and which is named for the holiday on which it took place.

Answer: Easter Rebellion

In Act 3, the town is excited by the arrival of a traveling circus featuring a live American bear that turns out to be Vasek in a costume. Marenka is in love with Jenik, a handsome villager with an unknown past, but Kecal arranges for her to marry Vasek. However, all ends happily when Jenik is identified as Vasek's elder brother and is thus eligible to marry Marenka under Kecal's contract. FTP, name this Czech folk opera by Bedrich Smetana.

Answer: The Bartered Bride

He made about 400 ceramic pots late in his career after learning the art from his friend Joan Artigas. His paintings, in a style called "Biomorphic Abstraction," included the series "dream pictures," "imaginary landscapes," and "constellations." FTP name this Catalan artist of a ceramic wall at UNESCO's headquarters, whose typical works contain oddly shaped color patches connected by thin black lines.

Answer: Joan Miró

In the Anabasis, Xenophon called this city Mespila. First surveyed and mapped by Claudius J. Rich, the city was surrounded by a 7.5 mile wall with 15 gates, including the Nergal Gate, Sin Gate, Adad Gate, and Ashur Gate. Across the Tigris from the modern-day Iraqi city of Mosul, kings who ruled from this city included Esarhaddon, Shalmaneser I, and Sennacherib. FTP, name this eventual destination of Jonah, the oldest and largest Assyrian city.

Answer: Ninevah

Peter Debye independently discovered this effect, which gave powerful evidence for Planck's quantum hypothesis. It occurs as a result of the transfer of energy and momentum from a photon to an electron, resulting in the recoil of the electron and production of new photons of lesser energy; the photons' scattering angles depend on the amount of energy lost to the recoiling electron. FTP—name the effect used by its American namesake to explain the increase in wavelength of X rays scattered by electrons.

Answer: Compton effect

Methane cannot be formed directly from graphite and hydrogen, but carbon dioxide can be formed from graphite and oxygen and water can be formed from hydrogen and oxygen. Carbon dioxide and water can then combine to form methane and oxygen. You can use the chemical process just described to determine the enthalpy change for the formation of methane from pure carbon and pure hydrogen. FTP this is an example of what law of chemistry that states that the enthalpy change for a reaction is the same whether it occurs by one step or by a series of steps.

Answer: Hess's Law or the Law of Heat Summation

The Miller integrator may be implemented using this device with a resistor on its input and a capacitor on its feedback loop. The term slew rate is used to describe its maximum voltage output and it takes 3 inputs: a non-inverting one, and a positive and negative power source. In the ideal case, i.e. without a feedback loop, its gain is an infinite factor of the difference between its inputs sources. FTP name the circuit element used to multiply voltage.

Answer: Operational Amplifier

Conceived in 1983, its manifesto was completed that year by Richard Stallman and its first component was Stallman's text editor emacs. Its original mission—to include a kernel and all the utilities needed to write and run C programs—was completed with Linux. A response to the move of software to the proprietary domain, FTP name this free software project with a famous Public License and a self-referential acronym.

Answer: GNU or Gnu's Not Unix

In a recent gaff, he asked whether Republicans would be so keen to go to war if the first half-million troops sent to the front came from millionaires' families. He's been suggested for the 2008 Vice-Presidential nomination if he manages to overcome a double-digit poll margin to defeat John Cornyn to succeed Phil Gramm in the Senate. FTP name this Texas Democrat and current mayor of Dallas.

Answer: Ron Kirk

Louis Agassiz attempted to formalize this doctrine via the study of fish fossils under Cuvier. Since metazoans go through a developmental stage called a gastrula, Ernst Haeckel suggested that a one time a organism he called "gastraea" must have existed in a form similar to the gastrula. Holding that development from an ovum to maturity mimics the evolution of a species, FTP name this incorrect theory of development, also known as the Biogenic Law, known by a pithy three word phrase.

Answer: Otogeny Recapitulates Phylogeny (Prompt: Biogenic Law)

## 2 Bonuses

Name these Biblical personages to whom angels appeared, for 10 points each:

1. Sent out into the desert by the jealousy of her husband's other wife, an angel told her that she and her son would survive, and that he would become the father of a great nation.

Answer: Hagar

2. While he was in the temple, an angel appeared to this priest, telling him that his barren wife would have a son. As a punishment for his disbelief, the angel made this man unable to speak until his child was christened.

Answer: Zechariah

3. While he was threshing wheat, an angel appeared to this man, telling him that God had chosen him to deliver Israel from the Midianite invaders. Answer: Gideon

Answer the following about Philosophical principles FTPE.

1. Advocated by Hume, this doctrine states that we can verify "X implies Y" using Precedence, Contiguity, or Constant Conjunction . One drawback to the theory is the necessity of an infinite number of tests required for absolute certainty.

Answer: David Hume

2. A philosophical doctrine fundamental to the school of Logical Positivism, it holds that a statement is meaningful only if it is either empirically confirmable or else tautological

Answer: Verifiability

3. Elucidated by Karl Popper, this doctrine is based on a rejection of the inductive method in the empirical sciences, which according to Hume required an infinite number of tests, and instead called for a contradictory evidence which could exist but doesn't.

Answer: falsifiability

Answer the following about Antarctic geography FTPE.

1. Framed by Coats Land, the Ronne Ice Shelf, Palmer Land, and the Antarctic Peninsula, it is a southern extension of the Atlantic that shares its name with a species of seals of the Phocidae family.

Answer: Weddell Sea

2. Sailing north from the Weddell Sea, the South Shetland and South Orkney Islands flank this passage into the Scotia Sea that separates South America from Antarctica.

Answer: Drake Passage

3. Southwest from the Drake Passage, on the opposite side of the Antarctic Peninsula from the Weddell Sea, is this sea, named for the man sent by Czar Alexander I to explore the area.

Answer: Bellingshausen Sea [BELL-ing-SCHOW-sin]

FTPE, name these works by Nikolai Rimsky-Korsakov.

1. This symphonic suite is based on The Thousand and One Nights.

Answer: Scheherazade

2. This orchestral work in 5 movements that features two contrasting dance themes and an extremely original middle gypsy scene. Unusual instruments used include tambourines, triangles, and drum accompanies .

Answer: Spanish Caprice or Capriccio Espagnol

3. This symphonic poem uses Slav church themes with modality that flips from the major to minor keys. Bells are heard in the distance to announce the coming to the title holiday.

Answer: Russian Easter Overture

Name each of the follow works of art from descriptions on a 15-10 basis.

15 In the center is a lute, various navigational instruments, and a sundial in the center reading 10:30 am.

10 Painted by Hans Holbein the Younger, there is an elongated skull at the bottom of the picture below the two title figures.

Answer: The Ambassadors

15 A brown clock at the top of the work reads 12:15, and four luminous lamps are seen against the red walls.

10 Painted by Vincent Van Gogh , a man in white stands beside a pool table in the center of a room with a green ceiling.

Answer: Night Cafe

Name the following types of Stars for 10 points each:

Our own sun is part of this broad class of stars running from the top left to the bottom right of the Hertzsprung-Russell diagram.

Answer: Main Sequence

Larger and brighter than our sun, members of this class are positioned above the main sequence stars on the H-R diagram. Subclasses include Red, Blue, and Super types.

Answer: Giant

The last stage of stellar evolution, they occur when a star collapses on itself, and are located below the main sequence stars in the H-R Diagram. Pup, the companion star to Sirius, is an example.

Answer: White Dwarf

FTPE, name these organic catalysts.

1. This catalyst, often used in alkene hydrogenations, is a reagent consisting of platinum oxide.

Answer: Adams catalyst

2. This catalyst is used to reduce alkynes it is important because it allows incomplete reduction to alkenes. It consists of palladium precipitated onto calcium carbonate.

Answer: Lindlar catalyst

3. This catalyst system, a mixture of an aluminum trialkyl with a titanium compound, is used to make polymers, most notably high-density polyethylene. The catalyst can be modified to produce stereo-regular polymer.

Answer: Ziegler-Natta catalysts

Name the following algebraic constructs for 10 points each:

1. A set with a binary operation satisfying the associativity, identity, inverse, and commutativity laws.

Answer: abelian group (do not prompt on group)

2. A set with the binary multiplication that is merely associative and may have neither an identity nor inverses of all of its elements.

Answer: semigroup (do not accept monoid)

3. A set, e.g. the integers, with binary operations called "multiplication" and "addition" which is an abelian group under addition and a semi-group under multiplication in a compatible manner.

Answer: ring or rng

Consider a dihybrid cross between two individuals heterozygous for both traits. For 10 points each:

1. Give the total number of different phenotypes possible for the offspring.

Answer: 4

2. What fraction of the offspring will show the dominant phenotype in trait A and the recessive phenotype in trait B?

Answer: 3/16

3. Give the total number of different genotypes possible for the offspring.

Answer: 9

Name the following works of Russian Literature each of which includes a character named Pavel FTPE:

1. Pavel Chichikov comes into town with an innovative, albeit repugnant, scheme to become gentleman by buying the title entities. He fails and is forced to leave town.

Answer: Dead Souls or Myortvye dushi

2. In this work Pavel Petrovich is the brother of Nikolai and Uncle of Arkady. Arkady defines the nihilist as "a person who does not bow to any authorities; who doesn't accept any principle on faith"

Answer: Fathers and Sons or Ottsy i deti

3. In this comedy by Griboyedov, Alexandr Chatsky, a friend of the daughter of Pavel Famusov, is slandered by others who believe he is mad. He becomes a misfit and flees.

Answer: Woe from Wit or Wit Works Woe or Gore ot uma

Name the following poems from A. E. Housman's *A Shropshire Lad* FTPE.

1. Musing upon the burial of a youth, the poet decides that he was lucky to die with his accomplishments intact, at the height of his glory, rather than to live and fade.

Answer: To an Athlete Dying Young

2. Recalling rejected love during his Oxford days, this poem addresses unrequited love in lively cadence: Give crowns and pounds and guineas, but never your heart away.

Answer: When I Was One and Twenty

3. Typifying the elegiac tone of the collection, this poem speaks of childhoods lightfoot lads and rose-lipt maidens buried among memories.

Answer: With Rue My Heart Is Laden

Disabled for more than a decade by lupus, a group of her letters was published posthumously under the title *The Habit of Being* while her other works include *The Violent Bear It Away*. FTPE:

1. Name this American author.

Answer: Flannery O'Connor

2. Name O'Connor's first novel, about Hazel Motes, a preacher for the Church without Christ in Tennessee who competes with Hoover Shoats and his Church of Christ without Christ

Answer: Wise Blood



3. O'Connor wrote this collection of 10 short stories that including "Artificial Nigger" "Circle in the Fire" and "Good Country People"

Answer: A Good Man is hard to find

Given a plot summary of an Aristophanes work, name it FTPE.

1. Chremylus and his slave Cario follow an old, blind man on the advice of the Oracle at Delphi. The blind man turns out to be the title god and when Asclepus heals him, his neighbor Chremylus benefits from the just dispersal of wealth.

Answer: Plutus (or Ploutos)

2. While inspecting a school for his son Pheidippides, old Stredsiades is questioned by Socrates, the headmaster, and found to be stupid. Stepsaides sets fire to the school.

Answer: Clouds or Nephelai

3. Fed up with the antics of the Senate, Dicaeopolis makes an individual treaty with Sparta. As a result of his personal peace, the chorus tries to kill him and he prospers selling contraband.

Answer: Acharnians (Acharnes)

Name these novels by Nathaniel West FTPE.

1. The main character is mocked by his boss, Willie Shrike, for taking his job as a newspaper columnist too seriously.

Answer: Miss Lonelyhearts

2. A set designer's completion of the painting "The Burning of Los Angeles" coincides with the explosion of the other characters' unfulfilled dreams in a conflagration of riot and murder.

Answer: Day of the Locust

3. In a surrealistic fantasy, a man stumbles upon the Trojan Horse, climbs into its rectum, and meets various folks as he meanders through the horse's lower intestines.

Answer: Dream Life of Balso Snell

Answer the following about a Rock Opera FTPE

1. Written by Andrew Lloyd Webber and Tim Rice, it tells the story of the last days of Christ from the point of view of Judas.

Answer: Jesus Christ Superstar

2. In the original cast, Jesus was played by Ian Gillan the vocalist of this band.

Answer: Deep Purple

3. This final song of the Opera takes its name from the bible passage which reads, "At the place where Jesus was crucified, there was a garden, and in the garden a new tomb, in which no one had ever been laid"

Answer: John 19:41

It was formed in 1987 by Sheikh Ahmad Yassin as a Palestinian offshoot of the Muslim Brotherhood. FTPE:

1. Name this group that advocates an Islamic Palestinian state.

Answer: Hamas

2. Give the general term referring to the uprising in the Palestinian occupied territories to protest the Israeli occupation. Hamas is among its main supporters.

Answer: Intifada

Hamas Terrorist Activities are typically carried out by squads from this military wing, named for a sheikh martyred in 1935.

Answer: Izzedine al-Qassam

FTPE, name the following terms associated with Henry Kissinger.

1. In 1960 Kissinger coined this term referring to a perceived inequality that led superpowers to stockpile nukes. It was spoofed by an analogous perception of an incipient inequality in mineshafts in "Dr. Strangelove".

Answer: missile gap

2. Kissinger brokered a cease-fire to end the 1973 Arab-Israeli War via this type of diplomacy in which he flew back and forth between the various parties.

Answer: shuttle diplomacy

3. During the negotiations for which he would later receive a Nobel Peace Prize, Kissinger and Nixon devised this strategy meant to portray Kissinger as the last bastion of sanity standing between them and a president hell-bent on obliterating North Vietnam.

Answer: mad dog tactic

Name the country from how it gained independence FTPE:

1. When Argentina tried to annex it when Argentina declared independence in 1810, militia captains Pedro Juan Cabellero and Fulgencio Yegros repulsed General Manuel Belgrano and declared its independence as a separate country on May 14, 1811.

Answer: Paraguay

2. Led in part by José Miguel Carrera, it declared independence Feb. 12, 1818 and defeated Spain two months later at the Battle of Maipu.

Answer: Chile

3. Inspired by the failed revolt of Tiradentes, the "toothpuller," independence was declared in January 1822 in the defiant "I am staying" speech by Dom Pedro.

Answer: Brazil

FTPE, name each of the following concerning advisors of old rulers.

1. Li Siu helped promulgate Legalism under this wall-building, book-burning Chinese ruler, the only emperor from the Ch'in dynasty.

Answer: Shih Huang Ti or Chao Cheng

2. Kautilya, a philosopher sometimes known as "the Indian Machiavelli", wrote the treatise Artha and helped this King overthrow the Nanda to found the Maurya dynasty.

Answer: Chandragupta

3. A vizier under Djoser, this physician is best remembered for his step pyramid.

Answer: Imhotep

Name the following US Vice-Presidents FTPE:

This Ohioan, Coolidge's vice president, was awarded the Nobel Prize for Peace with Sir Austen Chamberlain in 1925 for his namesake plan rescheduling payments for German reparations.

Answer: Charles Dawes

He was the son of Harding's Sec of Agriculture and he served in the same position for the 8 years preceding his vice-presidency. He broke with Truman, and formed the Progressive party to run for president in 1948.

Answer: Henry Agard Wallace

This Indiana representative, senator, and governor was the running mate of Samuel Tilden but had to wait until 1884 to become Grover Cleveland's first vice president, and died the next year.

Answer: Thomas Hendricks

Name the following Monarchs of England related to John of Gaunt FTPE.

The father of John, he led England into the Hundred Years War. The descendants of his 12 children contested the throne amongst themselves until the end of the War of the Roses.

Answer: Edward III

The son of Edward the Black Prince and nephew to John, he succeeded Edward III and during his reign fought with the so called Lords Appellant.

Answer: Richard II

Upon the death of John, Richard II seized his inheritance.

This member of the Lords Appellants, then known as Bolingbroke, reclaimed his father's right and usurped the throne, ruling until 1413.

Answer: Henry IV

Answer the following certain a European Treaty FTPE:

1. It was signed in July 1807 in Poland following victories by Napoleon over Russia at Friedland and the Prussians at Jena and Auerstedt.

Answer: Treaties of Tilsit

2. Under the terms of the Treaties of Tilsit, France and Russia became allies and divided Europe between them. Napoleon carved this entity from eastern Prussia, to be ruled by the King of Saxony.

Answer: Grand Duchy of Warsaw

3. Napoleon created this kingdom from Western Prussia for his brother Jerome. Also called the Grand Duchy of Berg, the region gave its name to a famous 1648 peace.

Answer: Westphalia

30-20-10-5 Name the Economic Concept:

30: Milton Friedman attempted to reconcile the concept with the Phillips Curve, which did not appear to allow for it.

20: In his attempt, Friedman assumed no money illusion – people would properly anticipate inflation – and argued that the Phillips curve was actually a vertical line.

10: Its occurrence corresponds to incidences of supply-side shock, which happened when OPEC tripled oil prices in 1973.

5: It is defined as sluggish economic growth coupled with a high rate of inflation and unemployment

Answer: Stagflation

Answer the following about techniques used in DNA analysis FTPE

1. It separates mixtures of molecules by their charge-to-mass ratios. Charged molecules move through an inert medium such as an agarose or acrylamide towards the appropriate electrode.

Answer: gel electrophoresis

2 Fragments formed as a result of DNA cleavage undergo gel electrophoresis and are then denatured to form single-strands. Transferred to nitrocellulose filter

and labeled with a radioisotope, the strands then hybridize with complementary strands. It is named for its American originator.

Answer: Southern blotting or Southern hybridization

3. Southern blotting detects and analyzes genetic markers these provide. This term describes the occurrence of different cleavage sites for restriction enzymes in the DNA of different individuals resulting from random base changes in the noncoding stretches of DNA.

Answer: RFLP [RIF-lips] or restriction fragment length polymorphisms

For five points each, name the sport associated with the current and former US Congressmen.

1. Tom McMillan (D-MD) Answer: Basketball
2. JC Watts (R-OK) Answer: Football
3. Jim Bunning (R-KY) Answer: Baseball
4. Jim Ryun (R-KS) Answer: Track
5. Steve Largent (R-OK) Answer: Football
6. Bill Bradley (D-NJ) Answer: Basketball