

ACF Fall 2013

Packet by Yale A (Laurence Li, Jacob Reed, Alex Tafur, Nicholas Wawrykow)

Edited by Stephen Liu, Tanay Kothari, Ankit Aggarwal, Adam Silverman, Stephen Eltinge, Lloyd Sy, John Lawrence, and Andrew Hart

1. One of this thinker's works begins with the sentence "I hate voyages and explorers" and details his time with the Caduveo and Bororo. Another work by this author, which begins with the Bororo myth of the bird-nester, examines binary oppositions like "moist" and "parched." This author, who studied the development of table manners in the third volume of one work, contrasted the engineer with the bricoleur in another work that argued that civilized and uncivilized ways of thought used the same structures. For 10 points, name this French structuralist anthropologist of *Tristes Tropiques*, *The Savage Mind*, and *Mythologiques*, which includes the volume *The Raw and the Cooked*.

ANSWER: Claude **Lévi-Strauss**

2. After being left by these people in Colchester, the title character of a Defoe story is raised by a "very house" woman. Along with Primitivo, another of these people is the only member of Pablo's gang who goes with Robert to survive the final attack in *For Whom the Bell Tolls*. This type of person is told "Go, for they call you, Shepherd, from the hill" in a companion poem to "Thyrsis," written by Matthew Arnold. After pushing Frodo to his death, a son of these people lies down next to his love, who was adopted by them. For 10 points, name this nomadic ethnic group exemplified by Esméralda in *The Hunchback of Notre Dame*, who are sometimes called *Roma*.

ANSWER: **gypsies** or **gypsy** [accept **Roma** or **Romani**]

3. This philosopher argued that man is distinguished from other animals by his "perfectibility" and discussed the ill effects of the progression from non-destructive to destructive modes of "self-love" in one work. That work by this philosopher describes the true founder of civil society as the first man to fence in a piece of land and proclaim, "this is mine." The most famous work of this author of *Discourse on Inequality* outlines a process in which humans give up their natural rights in favor of the general will, and begins with the line "Man is born free, and everywhere he is in chains." For 10 points, name this Swiss philosopher who wrote *The Social Contract*.

ANSWER: Jean-Jacques **Rousseau**

4. A reaction of this type is coupled with elimination to form the final product after transmetallation in the Suzuki reaction. Another reaction of this type is often coupled to Friedel-Crafts acylations, to compensate for carbocation rearrangements during Friedel-Crafts alkylations. The most common method of synthesizing amines forms them from carbonyls in one of these that uses sodium cyanoborohydride. LAH commonly catalyzes these reactions. In general, the conversion of aldehydes to alcohols is one of these reactions, in which the oxidation state decreases and the molecule gains electrons. For 10 points, name these reactions often contrasted with oxidations.

ANSWER: **reduction** [prompt on "redox" reactions]

5. The STAR Collaboration reported the observation of this particle's antiparticle, the most massive antiparticle observed to date. George Gamow discovered the mechanism for the release of these particles via quantum tunnelling. This particle and a neutron are produced by the fusion of triton and deuteron particles. These particles followed a one over sine to the fourth scattering in an experiment in that detected them using a zinc sulfide screen. That experiment was conducted by Geiger and Marsden and disproved the plum-pudding model of the atom. For 10 points, name this particle used in Rutherford's gold foil experiment, which is identical to a helium-4 nucleus.

ANSWER: **alpha** particle [accept **helium nucleus** until said]

6. Although this man was originally betrothed to Ceionia Fabia, his predecessor in office requested that this man marry his daughter instead. This emperor's tutors included Herodes Atticus and Fronto, and the legions from this man's campaigns in the east brought back the Antonine Plague. This emperor led an expedition into Pannonia to

confront marauding tribes in the Marcomannic Wars. False reports of his death lead to a revolt in Syria by Avidius Cassius, and this man co-ruled with Lucius Verus. This husband of Faustina named Commodus his successor. For 10 points, name this member of the Five Good Emperors, a Stoic philosopher who wrote *Meditations*.

ANSWER: Marcus Aurelius Antoninus Augustus

7. In one novel by this author, Fancy Day accepts a marriage proposal from a vicar despite being engaged to Dick Dewy. The speaker of a poem by this author of *Under the Greenwood Tree* muses on “Some blessed Hope” that the title creature knew “And I was unaware.” That poem was written in 1899 or 1900 and opens, “I leant upon a coppice gate.” In one of his novels, the title stonemason from this author’s invented region of Wessex has relationships with Sue Bridehead and Arabella Donn, while another novel sees Michael Henchard auction off his wife and daughter for five guineas. For 10 points, name this English author of *Jude the Obscure* and *The Mayor of Casterbridge*.

ANSWER: Thomas Hardy

8. One work by this composer includes the aria “Bub und Reu” and several versions of the tune “O haupt voll Blut und Wunden.” The soloists in one of his concerti are a violinist, an oboist, a recorder player, and a trumpeter. A religious piece by this man used a libretto by Picander to depict scenes from the Gospels. The third concerto in one collection by this composer is scored entirely for strings and only has two movements. That set of concerti by this composer was written for the Margrave a certain German state. For 10 points, name this baroque composer of the *St. Matthew Passion* and the *Brandenburg Concertos*.

ANSWER: Johann Sebastian Bach [prompt on “Bach”]

9. Depictings of this city include *The Little Street* and a lost painting entitled *House Standing in this city*. In the center of a depiction of this city, a bridge lies below a large tree and several houses with orange roofs. The bottom of that work shows four people talking next to a boat, and a figure in yellow and blue talks to another woman wearing a similar white head scarf beside two wooden posts. A clock tower reads 7:15 in that depiction of this city, whose bottom third mostly depicts a canal with the buildings on the opposite side reflected in the water. For 10 points, name this Dutch city famed for its tiles that was home to Jan Vermeer, who painted *A View of it*.

ANSWER: Delft

10. This city’s “South Axis” business district is home to the headquarters of ING Group. The 1287 St. Lucia’s flood changed the coastline and led to the rise of this port city, whose largest park is the Vondel. Many glass doors are found in its De Wallen district, and its semicircular rings of canals flow from the central *Grachtengordel*. A body of water called the IJ in this city is connected to the Rhine and the North Sea by a series of canals. This city, the most populous in the Randstad conurbation that also includes Utrecht, is located on polders built up around the Amstel River. For 10 points, name this city that is, with the Hague, the capital of the Netherlands.

ANSWER: Amsterdam

11. One of this author’s characters is a bicyclist who gives up her job at the Naval Hospital, and is later shot in the back at the Kongo Temple. Another of this man’s characters watches a soldier drink breast milk out of a cup of tea and is paid in cigarettes to run over the stomach of a pregnant girl. This author also wrote about the homosexual Kochan, who admires a painting of St. Sebastian, in *Confessions of a Mask*. The protagonist meets various reincarnations of his friend Kiyooki in a series by this author about Shigekuni Honda. For 10 points, name this Japanese author of *The Temple of the Golden Pavilion* and *The Sea of Fertility*, who committed *seppuku* after a failed coup.

ANSWER: Yukio Mishima [accept Mishima Yukio or Kimitake Hiraoka]

12. Hugh Hammond Bennett was one of the first to study this phenomenon, calling it “a national menace” in the title of a paper. An equation modeling this process includes factors for topographic effects and crop management and is called the USLE. It’s not the dispersal of fungal spores, but one mechanism by which this process occurs is called rain splash. A gabion is a structure built to prevent this phenomenon, which may involve particles moving by either saltation or creep. When the products of this process, which is often paired with weathering, are deposited, they become sediment. For 10 points, name this process by which soil and rocks are broken down by wind or water.

ANSWER: soil **erosion**

13. One of this author’s protagonists writes a set of articles for *Harper’s* about the murder of Rick Lester by a black man. That novel follows Albert Corde’s month in Bucharest. In another novel by this author of *The Dean’s December*, Dr. Tamkin wastes the final savings of failed actor Tommy Wilhelm. The protagonist of another novel by this author is abandoned by his wife in favor of Gersbach and writes letters to Hegel and Eisenhower. Thea and Stella are romantically involved with Einhorn’s well-traveled assistant, the “Chicago-born” title character of his breakout novel. For 10 points, name this author of *Seize the Day*, *Herzog*, and *The Adventures of Augie March*.

ANSWER: Saul **Bellow** [or Solomon **Bellows**]

14. This man’s chaplain was William of Chartres, and the Treaty of Meaux made peace with Raymond VII of Toulouse at the beginning of his reign. This king defeated Hugh of Lusignan at the Battle of Taillebourg during the Saintonge War, while another of his campaigns saw him capture the port of Damietta. He gained fame for arbitrating disputes across Europe and commissioned the Sainte Chapelle. This king’s mother, Blanche of Castile, twice served as his regent, and he directed the construction of buildings to house relics of the “True Cross” which he hoped to gain on the Seventh and Eighth Crusades. For 10 points, name this only French king to be canonized.

ANSWER: **Louis IX** [accept **Saint Louis** until mentioned; prompt on “Louis”]

15. This man argued that architecture has historically been dominated by the influence of “regulating lines.” The Carpenter Center for the Visual Arts at Harvard is one of this man’s two buildings in the Americas. He connected one of his buildings with the wings of a dove and included irregularly spaced rectangular openings within its two-foot thick walls. This man based his designs on the Modulor system, based on the figure of a human male. This city planner of Chandigarh, India used columns called pilotis to raise many of his buildings above the ground. For 10 points, name this Swiss-French architect who designed Notre Dame du Haut and the Villa Savoye.

ANSWER: Le **Corbusier** [accept Charles-Edouard **Jeanneret-Gris**]

16. One committee created in the lead-up to this event included Lord Salisbury and Harold Macmillan. Sir Robert Menzies offered one participant in this event eighteen proposals, all of which were rejected. This event saw the invasion of Port Said as part of Operation Musketeer. It began with Operation Kadesh, carried out by a country led by David Ben-Gurion. This event led to the resignation of Anthony Eden, and it was caused by the refusal of the American and British governments to continue financing the Aswan High Dam. For 10 points, name this event in which Nasser’s Egypt tried to nationalize a certain canal between the Mediterranean and Red Seas.

ANSWER: **Suez** Crisis [or **Tripartite Aggression**; or **Suez War**; or **Second Arab-Israeli War**]

17. After getting a new PSP and reaching level 60 in a game, this character is recruited by God to command the forces of Heaven against the armies of Hell, placing him in a coma and causing his friends to build a tower to Heaven. An alter ego of this character wears a purple hooded cloak with a green question mark attached to it. This character’s first film appearance revealed that he has blond hair, and on many occasions his friends try and fail to replace him with Butters Stotch. This character is the son of Stuart and Carol McCormick and is repeatedly insulted by Cartman for being poor. For 10 points, name this *South Park* character who wears an orange parka and dies all the time.

ANSWER: **Kenny** McCormick [prompt on “McCormick”]

18. After receiving three serious wounds while fighting his best friend in Armorica, this knight died on the beach of Dover. This man stood up in the middle of a procession of a bleeding spear, a cup, and a platter to ask what it all meant, lifting the curse on the Waste Land. In another story, this man married the ugly Lady Ragnell, who turned out to be a beautiful woman under a spell. This son of Morgause and Lot had brothers named Gaheris and Gareth, and in his most famous adventure he traded the kisses of his host's wife for food after hacking off another man's head. For 10 points, name this nephew of Arthur who befriended the Green Knight.

ANSWER: Sir Gawain

19. This man led a group of people indigenous to the Wallowa valley, and won the battle of White Bird Canyon to start his most famous campaign. His last engagement was at Bear Paw Mountain, and this ally of Looking Glass said, "Hear me, my chiefs! My heart is sick and sad" in a speech where he told General Oliver Howard that he knew his heart. This man surrendered to Nelson Miles in the Montana Territory, less than 80 miles away from his goal of reaching the Canadian border. He famously proclaimed, "From where the sun now stands, I will fight no more forever." For 10 points, name this Nez Perce chief who retreated for over a thousand miles from the US army.

ANSWER: Chief Joseph [or Young Joseph; or Hin-mah-too-yah-lat-kekt]

20. This process begins with the formation of the 43S complex from the 40S complex and an eIF2 ternary complex. The hydrolysis of GTP during this process in elongation factor 2 permits the translocation from the A site to the P site. Release factors bind after the amber, ochre, or opal sequence is revealed, terminating this process. Francis Crick proposed wobble to explain why there were only 45 and not 64 anticodon loops to bind during this process. This biological process is initiated by methionine and in eukaryotes it occurs on the rough ER. For 10 points, name this process in which RNA facilitates the synthesis of proteins in the ribosome.

ANSWER: translation

21. Some adherents of this faith believe in a karma-like "Rule of Three." The major statement of this faith originates from 26 rhymed couplets written by Lady Gwen Thompson, and is usually rendered as "An it harm none do what ye will." This dualistic religion venerates the Horned God and the Triple Goddess. Members of this religion make up the majority of those who celebrate Imbolc and Beltane, which are two of the eight Sabbats spaced equally in the year. Gerald Gardner, or Scire, popularized this faith in 1954. Some members of this faith congregate at covens. For 10 points, name this neopagan faith frequently associated with witchcraft.

ANSWER: Wiccan [prompt on "paganism" or word forms; prompt on "neopaganism" or word forms; prompt on "witchcraft" or "witches" or similar answers]

X. In general relativity, a quantity named for this man is proportional to the square root of the negative of the metric tensor. More generally, the derivative of that quantity with respect to a generalized coordinate appears in an equation named for this man and Euler. In a method named for this man, one sets the gradients of a function and a constraint proportional to one another. In addition to that method of multipliers, he names a set of five points at which a small object orbits in sync with two larger objects, as well as a quantity equal to kinetic energy minus potential energy. For 10 points, name this French scientist who developed a namesake form of mechanics.

ANSWER: Joseph-Louis Lagrange

X. A character created by this author attempts to kiss a girl but is stopped when she rings a service bell, after which he monitors her obsessively, fearing that she may be a lesbian. That girl dies by falling off a horse and is the central character of this author's *The Fugitive* and *The Prisoner*, which appear in a cycle that also includes *Within a Budding Grove*. In one novel by this creator of Albertine, the protagonist romances Gilberte and the Duchesse de Guermantes, and another work begins as the narrator is reminded of the town of Combray when a madeleine is dipped in tea. For 10 points, name this French novelist who created Mr. Swann in his *Remembrance of Things Past*.

ANSWER: Marcel **Proust**

[Note to teams: Two answers required.]

X. These two nations formed a union following a succession crisis in one of them that saw the Prior of Crato claim the throne. That military occupation was later followed by a restoration war won by John IV, who founded a new dynasty. These two nations have quarreled since 1801 over the sovereignty of Olivenza. The most notable treaty between these two countries was renegotiated after the location of the line of demarcation set by Pope Alexander VI was deemed unfair, and these two nations expelled Napoleon during the Peninsular War. For 10 points, name this pair of countries that split South America in the Treaty of Tordesillas and share the Iberian Peninsula.

ANSWER: Kingdom of **Portugal** and the Algarves AND Kingdom of **Spain** [or *Reino de **Portugal** e dos Algarves* AND *Reino de **España***]

1. Answer the following about adaptations plants have to avoid water loss, for 10 points each:

[10] To avoid excess transpiration, pineapples use this metabolic cycle in which carbon dioxide is absorbed at night, then used to form sugars during photosynthesis later.

ANSWER: **crassulacean acid metabolism** [or **CAM** photosynthesis]

[10] Carbon dioxide is absorbed through these pores in the leaf, which are surrounded by guard cells. Water evaporates through these structures in transpiration.

ANSWER: **stomata** [or **stomates**]

[10] Xerophytes often have an exaggerated “waxy” type of these structures which cover the leaf’s epidermis.

ANSWER: **cuticles**

2. Herodotus wrote that this man’s Alcmaeonid mother Agariste dreamed of giving birth to a lion. For 10 points each:

[10] Name this 5th century BCE Athenian statesman responsible for a funeral oration mentioned in a Thucydides work. He died of plague in 429 BCE.

ANSWER: **Pericles**

[10] Pericles led the charge in ostracizing this son of Miltiades and victorious general at the Eurymedon River for leading a hoplite force to aid Sparta in besieging Mt. Ithome, where rebellious Spartan helots had taken refuge.

ANSWER: **Cimon**

[10] Pericles led Athens during the first few years of this massive war between the Athenian-led Delian League and another league led by Sparta. It saw the Battle of Aegospotami and the Sicilian Expedition.

ANSWER: Second **Peloponnesian** War

3. Answer the following about a period in the Christian calendar, for 10 points each:

[10] This three-to-four week period directly leads up to Christmas. It is famous for its use of a candle-laden wreath, and the hymn “O Come, O Come, Emmanuel” is often sung during it.

ANSWER: **Advent**

[10] This is the liturgical color of Advent for most Christian denominations. In addition to a rose candle, three candles of this color are used in the Advent wreath, and it’s also commonly used in vestments for Lent.

ANSWER: **purple** [or **violet**]

[10] Advent begins on the Sunday nearest November 30th, a day dedicated to this Saint. He names a kind of cross seen on the flag of Scotland.

ANSWER: Saint **Andrew** the Apostle

4. This empire with a capital at Gao was ruled by men like Askia Muhammad and Sonni Ali. For 10 points each:

[10] Name this Islamic empire centered on the Niger River that reached its zenith around the end of the 16th century. Its rise took advantage of the waning power of the Mali Empire.

ANSWER: Songhai Empire

[10] Askia Muhammad encouraged scholarship in Timbuktu, though its manuscripts were lost to attacks by rebels belong to this ethnic group. This Sahara-based nomadic group frequently raided the Mali and Songhai Empires.

ANSWER: Tuaregs [prompt on Berbers]

[10] This mineral substance was important to the economy of the Songhai Empire and was traded widely in western Africa at the time. It is traditionally used to preserve and flavor foods, especially meat.

ANSWER: salt

5. The title character of this play loses a ring given to her by Dushyanta. For 10 points each:

[10] Name this play by Kalidasa in which Dushyanta finds the signet ring inside a fish, and then proceeds to recall the title figure and her son, Bharata.

ANSWER: *The Recognition of Shakuntala*

[10] Shakuntala is also present in this epic, which describes the Kurukshetra War between the Pandavas and Kauravas. One portion of this text is the *Bhagavad Gita*.

ANSWER: *Mahābhārata*

[10] The *Mahābhārata* was written in this classical Indian language also used by Kālidāsa. Many Hindu texts were originally written in this language, which uses the Devanagari script and forms the foundation for Hindi.

ANSWER: Sanskrit

6. One work by this man includes a version of Gershwin's "A Foggy Day" and a ten-minute tone poem about the rise and fall of man. For 10 points each:

[10] Name this jazz musician who wrote the song "Goodbye Pork Pie Hat." His albums include *Pithecanthropus Erectus* and *The Black Saint and the Sinner Lady*.

ANSWER: Charles Mingus

[10] Charles Mingus was best known for his playing of this string instrument, which in jazz is usually plucked and played standing up. In a standard orchestra, it is the largest instrument in the string section.

ANSWER: double bass

[10] Another jazz bassist was Eugene Wright, who worked on the song "Take Five" as part of the album *Time Out*, which was released by this man's namesake quartet. This pianist died in 2012.

ANSWER: Dave Brubeck

7. Certain mythological figures met their ends in bizarre fashions. For 10 points each:

[10] This son of Odin and Frigg was killed by a dart of mistletoe, the only object on earth that didn't vow to hurt him. His funeral took place on the seashore and his body was burned on Hringhorn, the largest ship in the world.

ANSWER: Baldr

[10] This Irish hero, also known as the Hound of Ulster, was weakened by eating dog meat before being killed. He died fighting the armies of Connacht and tied himself to a tree so that he would die standing up.

ANSWER: Cúchulainn [accept Setanta]

[10] This Ancient Greek hero was killed when Zephyrus blew Apollo's discus throw off course. Apollo created a namesake flower from this youth's blood.

ANSWER: Hyacinthus

8. The Marshallian demand function finds the consumption bundle that maximizes this quantity at a given budget constraint. For 10 points each:

[10] Name this quantity whose "marginal" type is the additional benefit of purchasing one more unit of a good.

ANSWER: utility [accept marginal utility]

[10] These utility isoquant curves show bundles of goods between which a given consumer has no preference.

ANSWER: indifference curves

[10] The compensated demand function named for this British economist gives demand derived from the consumer's cost-minimization problem, and is related to Marshallian demand by the Slutsky equation.

ANSWER: Sir John (Richard) Hicks [accept Hicksian demand function]

9. One member of this family kills a queen at the end of *Bring Up the Bodies*, the second novel in Hilary Mantel's trilogy about him. For 10 points each:

[10] Give the surname of the man who "could not cease / in the inglorious arts of peace," according to a "Horatian Ode" by Andrew Marvell. That figure is described in another poem as "guiltless of his country's blood."

ANSWER: Cromwell [accept Oliver Cromwell or Thomas Cromwell]

[10] The aforementioned reference to Oliver Cromwell occurs in this poem about a location where "some mute inglorious Milton may...rest." It opens by stating that "the curfew tolls the knell of parting day."

ANSWER: "Elegy Written in a Country Churchyard"

[10] "Elegy Written in a Country Churchyard" is by this poet, who stated "where ignorance is bliss / 'Tis folly to be wise" in his "Ode on a Distant Prospect of Eton College."

ANSWER: Thomas Gray

10. The narrator of this poem hears a hermit thrush sing a "death carol" and places a sprig of the title flower on a "coffin that passes through lanes and streets." For 10 points each:

[10] Name this elegy mourning the death of Abraham Lincoln, which states that after the title event, "the great star early droop'd in the western sky."

ANSWER: "When Lilacs Last in the Dooryard Bloom'd"

[10] This poet of "When Lilacs Last in the Dooryard Bloom'd" also memorialized Lincoln by stating that "our fearful trip is done" in "O Captain! My Captain!" which appears in his *Leaves of Grass*.

ANSWER: Walt Whitman

[10] A much younger Lincoln appears in this man's play *Abe Lincoln in Illinois*. Duke Mantee kills Alan Squier during a standoff, allowing Gabby to use his life insurance money to study art in his play *The Petrified Forest*.

ANSWER: Robert Emmet Sherwood

11. As an OB-GYN in Texas, this man refused to charge or accept federal funds. For 10 points each:

[10] Name this former representative who ran for the Republican Presidential nomination in 2008 and 2012 and advocates eliminating most federal agencies. His son became a senator from Kentucky in 2010.

ANSWER: Ron Paul [prompt on "Paul" or "R. Paul"; do not accept "Rand Paul"]

[10] This New Mexico politician also ran for president in 2012, as the Libertarian candidate.

ANSWER: Gary Johnson

[10] More recently, Libertarian candidate Robert Sarvis was banned from participating in an important debate for this state's 2013 gubernatorial race, which will be contested between Terry McAuliffe and Ken Cuccinelli II.

ANSWER: Virginia

12. The Smoluchowski equation can be used to model the interaction of two different phenomena. For 10 points each:

[10] One of those phenomena is this one, which transfers mass and heat by bulk motion. Advection is a specific form of this process.

ANSWER: convection

[10] The other phenomenon modeled by the Smoluchowski equation is this one, in which particles move from areas of higher concentration to those of lower concentration.

ANSWER: diffusion

[10] In the presence of certain forces, solving the Smoluchowski equation gives a distribution named for this man, in which the fraction of particles in a state is proportional to the exponential of the negative of the state's energy.

ANSWER: Ludwig **Boltzmann**

[Note to moderator: Accept the alternate answer for the first part, but do not read it otherwise.]

13. This symphony's famous D flat major *Largo* movement is dominated by themes played by the English horn. For 10 points each:

[10] Name this piece largely inspired by themes of Native American and African American music. This symphony was inspired by the composer's trip to America, which also sparked the creation of his American String Quartet.

ANSWER: Symphony No. 9 in E minor, "From the **New World**" [accept **Dvorak**'s 9th symphony]

[10] The New World Symphony was written by this composer, whose first symphony is nicknamed "The Bells of Zlonice." Of the eight *Humoresques* he composed, only the seventh is still frequently performed.

ANSWER: Antonin **Dvorak**

[10] William Arms Fisher wrote this song using the theme from the *Largo* section of the New World Symphony. Its title location is said to be "not far, yes close by, through an open door."

ANSWER: "**Goin' Home**"

14. Japan lost four aircraft carriers in this battle. For 10 points each:

[10] Name this battle in which Admiral Nimitz inflicted a crippling blow to Japanese naval power, thanks to the work of American codebreakers. It was a decisive victory that occurred six months after Pearl Harbor.

ANSWER: Battle of **Midway**

[10] This battle took place one month prior to Midway. This was the first ever naval action in which neither side's ships directly sighted the other, and also the first in which aircraft carriers fought each other.

ANSWER: Battle of the **Coral Sea**

[10] The fleet carriers *Sōryū* and *Hiryū* assisted in the assault on this American-held island that took place at the same time as Pearl Harbor. The Japanese held this island north of the Marshalls until the end of the war.

ANSWER: **Wake Island**

15. One of his works includes a magic square above a winged figure resting his head on one hand. For 10 points each:

[10] Name this German Renaissance artist and creator of the engraving *Melencolia I* as well as a self-portrait in which he looks like Jesus Christ. Other works by him include *The Four Horsemen of the Apocalypse*.

ANSWER: Albrecht **Dürer**

[10] One of Dürer's engravings depicts this figure riding a pale horse, alongside a Knight and the Devil. That work shows him holding an hourglass and wearing a crown with a snake curling through it.

ANSWER: **Death**

[10] Dürer's last major painting was this two-panelled work that includes a red-clad St. John the Evangelist with an open book and a white-clad St. Paul on the opposite side with a closed book.

ANSWER: *The* **Four Apostles** [or *Die* **vier Apostel**]

16. This oft-censored novel was originally written under the pseudonym Alcofribas Nasier, an anagram of the author's name. For 10 points each:

[10] Name this novel, in which a giant goes on an expedition to find the Oracle of the Holy Bottle. The other title character of this novel builds the Abbey of Thélème.

ANSWER: **Gargantua and Pantagruel**

[10] This French Renaissance author wrote *Gargantua and Pantagruel*.

ANSWER: François **Rabelais**

[10] This friend of Pantagruel spends a lot of time thinking about getting married, but is hesitant because he does not want to get cuckolded. Pantagruel first discovers this character in tatters during a walk from St. Anthony's Abbey.

ANSWER: **Panurge**

17. When substituted with a methyl group, it's called toluene. For 10 points each:

[10] Name this hydrocarbon which has formula C_6H_6 . Its molecular structure was suggested by August Kekulé.

ANSWER: **benzene**

[10] Benzene is the characteristic compound with this property, which makes it inert to normal electrophilic addition reactions. This property requires planarity and $4n+2 \pi$ electrons according to Huckel's rule.

ANSWER: **aromaticity** [or word forms]

[10] Benzene is planar because all of its carbon atoms have this hybridization. The oxygen atom in furan takes on this hybridization for the molecule to be aromatic.

ANSWER: **sp²** [do not accept or prompt on "sp"]

18. One man from this state declared "The great questions of the day" will be decided with "Iron and Blood." For 10 points each:

[10] Name this kingdom mostly based in what is now Germany. It was home to Otto von Bismarck, warred with Denmark over Schleswig-Holstein, and was ruled by the Hohenzollerns.

ANSWER: **Prussia** [or **Preußen**]

[10] This mainly Catholic state in the south of modern Germany with capital at Munich fought on Prussia's side during the Franco-Prussian war.

ANSWER: **Bavaria** [or **Bayern**]

[10] The Electors of this other German state with capital at Dresden were also kings of Poland from 1697 to 1763. The Ottonian Dynasty was based here, and its Electors included August the Strong.

ANSWER: **Saxony** [or **Sachsen**]

19. Cities in this river's delta include Alexandria. For 10 points each:

[10] Name this longest river in the world, which also passes through Cairo en route to the Mediterranean.

ANSWER: **Nile** River

[10] This lake in the Ethiopian Highlands near the city of Bahir Dar is the source of the Blue Nile, which tumble over a large waterfall about 20 miles downstream.

ANSWER: Lake **Tana** [or Lake **Tsana**; or **Tana Hayk**]

[10] This national capital is located at *al-Mogran*, the place where the White and Blue Niles converge.

ANSWER: **Khartoum**

20. This philosopher argued that the subjects of all true statements contain their predicates within themselves, his so called "predicate-in-notion" principle of truth. For 10 points each:

[10] Name this philosopher who claimed that our world is the best of all possible worlds in his *Theodicy*, and who invented calculus independently of Newton.

ANSWER: Gottfried Wilhelm **Leibniz**

[10] A key component of Leibniz's later metaphysics was his proposition that all beings are composed of these mind-like simple substances that possess perception.

ANSWER: **monads** [accept **monadology**]

[10] This principle articulated by Leibniz suggests that for everything that exists, there must be an explanation for its existence.

ANSWER: the principle of **sufficient reason**

21. In *Enumerative Combinatorics*, Richard Stanley supplied 66 equivalent ways of producing these numbers, one of which asks for the number of ways to insert parentheses into a set of factors. For 10 points each:

[10] Identify this sequence of numbers important in combinatorics problems. The n th term in this sequence equals 1 over the quantity n plus 1, times the quantity “ $2n$ choose n .”

ANSWER: Catalan numbers

[10] Catalan posed a conjecture concerning a Diophantine equation, which is one in which all of the variables are of this type. Fermat’s last theorem also deals with equations in which all of the numbers are of this type.

ANSWER: integers

[10] Catalan also proved an identity involving the numbers in this sequence. Each term in this sequence equals the sum of the two previous terms, and it starts 0, 1, 1, 2, 3, 5, 8.

ANSWER: Fibonacci sequence [or Fibonacci numbers]

X. This device uses an electric field to vary the width of a channel through which charge carriers can flow. For 10 points each:

[10] Name this type of transistor. The feature which distinguishes it from a more general class is the thin insulating layer that separates the gate electrode from the source and the drain.

ANSWER: MOSFET [or metal-oxide-semiconductor field-effect transistor; prompt on field-effect transistor]

[10] Like many semiconductor devices, MOSFETs make use of this group-4 element with symbol Si.

ANSWER: silicon

[10] Semiconductors often use silicon dioxide as one of these polarizable, electrically insulating materials. Their strength is measured by their permittivity, and one is often placed inside a capacitor to increase its strength.

ANSWER: dielectric

X. This man was Prime Minister from 1902 to 1905, but he is most famous for a letter he wrote while he was Foreign Secretary. For 10 points each:

[10] Name this man, whose namesake “declaration” in 1917 called for the establishment of a Jewish homeland in Palestine..

ANSWER: Arthur James Balfour, 1st Earl of Balfour

[10] Balfour was the Foreign Secretary for this British Prime Minister, who headed Britain for part of World War I and attended the Paris Peace conference. This Welshman was the last Liberal Prime Minister.

ANSWER: David Lloyd George, 1st Earl Lloyd-George of Dwyfor [do not accept partial answers for “Lloyd George,” but prompt on his title]

[10] This prime minister was the predecessor of Lloyd George. His ministership saw an act that limited the power of the House of Lords, but he is better known for his mismanagement of World War I.

ANSWER: Herbert Henry Asquith, 1st Earl of Oxford and Asquith

X. In this novel, a crook who goes by “The Unnamed” rescues Gertrude’s disciple from a convent and ensures that she gets back to Milan, where she meets Don Cristoforo. For 10 points each:

[10] Name this novel by Alessandro Manzoni about the marriage of Renzo and Lucia, which has been forbidden by Don Rodrigo.

ANSWER: *The Betrothed* or *I promessi sposi*

[10] *The Betrothed* includes a lengthy description of the Great Plague of Milan, whose rampant progress causes ten young people in this work to flee Florence and tell each other dozens of stories in the countryside.

ANSWER: *The Decameron* [or Decamerone; or Book of Prince Galehaut]

[10] This Italian author wrote *The Decameron*. His poem *Il Filostrato* is one of the first literary treatments of the myth of Troilus and Criseida.

ANSWER: Giovanni Boccaccio