ACF Nationals 2016
Packet by Columbia A (Charles Dees) and Columbia B (Saul Hankin, Kailee Marie
Pedersen, Wilton Rao, Shreyas Vissapragada, and more)
Tossups

1. A painting by this artist held by the Walters Art Museum depicts a scene from the aftermath of the battle of Baecula in which a young Numidian royal turns away from a gesturing Roman general in shame. This artist of *Scipio Africanus Freeing Massiva* included a black dwarf in a particolored outfit standing at the extreme right of his canvas depicting a queen holding a pearl above a glass of vinegar. He collaborated with Gerolamo Mengozzi Colonna on paintings like *Bellerophon on Pegasus* and *The Banquet of Cleopatra* for the Palazzo Labia, and was assisted by his son Giandomenico in decorating the Royal Palace in Madrid. This painter of *Apotheosis of Spain* included a portrait of architect Balthasar Neumann in a ceiling painting showing a Greek god touring Africa, America, Asia, and Europe. For 10 points, name this 18th century Venetian painter of *Apollo and the Continents*, a part of his fresco series for the Würzburg Residence.
ANSWER: Giovanni Battista **Tiepolo** [or Giambattista **Tiepolo** or Gianbattista **Tiepolo**]

2. The movement to prevent this practice gained steam after the People's Grocery incident involving Thomas Moss, which occurred in a neighborhood called the Curve. One legislative attempt to curb this practice was a bill sponsored by Colorado Senator Edward Costigan and New York Senator Robert Wagner, which was introduced a second time after a case involving Claude Neal, but still failed to pass. Another law dealing with this practice was introduced by Leonidas Dyer, who had been influenced by the Silent Parade of 1917, a march down the Fifth Avenue of Manhattan. Several studies on this practice, such as *The Red Record*, were released by Ida Wells-Barnett. The American Crusade against this practice was founded by actor Paul Robeson. For 10 points, name this practice protested by Billie Holiday's song "Strange Fruit," a form of mob violence once prominent in the South.
ANSWER: **lynching** [accept **anti-lynching** movement, prompt descriptive answers such as mob violence]

3. The Elwert-Haug formula applies when the product of the fine structure constant and this quantity is much less than 1. The Born approximation for bremsstrahlung is valid when the relativistic beta of the electron is much larger than this quantity times the fine structure constant. The Bethe-Bloch formula can be improved by adding a Barkas term proportional to the 3rd power of this quantity. The cross-sections of pair production and bremsstrahlung vary with the square of this quantity. The linear attenuation coefficient of a material depends on the density and this quantity of the material. Because the rate of the photoelectric effect varies sharply with this quantity, gamma ray absorbers are typically made from materials with high values for this quantity, such as lead, where it equals 82. This quantity is symbolized Z. For 10 points, give this term for the sum of the number of protons in a nucleus.
ANSWER: **atomic number** [prompt on Z]

4. A 1907 composition with this title originated as incidental music to a Hjalmar Procopé play, features an extensive flute solo in its second-movement *Nocturne*, and opens with an *Oriental Procession*. That Sibelius composition with this title premiered at the same concert as his third symphony. Another work with this title onomatopoeically pairs *col legno* violins and xylophones in a line mentioning wood and brass instruments with gold in a passage in which the baritone soloist exhorts "praise ye the god of" various things. This composition was scored in part for two seven-piece brass bands to take advantage of musicians who were already performing Berlioz's *Requiem* at the 1931 Leeds Festival. The chorus shouts the word "Slain!" at a climactic moment of this work, whose Osbert Sitwell-selected text includes elements of Psalm 137 and the Book of Daniel. For 10 points, name this oratorio featuring a chilling depiction of the writing on the wall, a masterpiece by William Walton.
ANSWER: ***Belshazzar's Feast*** [or ***Belsazars gästabud***]

5. An essay about works of this type includes the humorous suggestion that since we are used to "thinking of an expression like 2 = 2 as correct, we do not realize that the second 2 is obviously a hair younger than the first", and is titled "No Two Snowflakes Are Alike." The PEN American center triennially gives a medal for this sort of work; its winners have included Burton Watson and Ralph Manheim. This kind of work is called "the secret metaphor of all … communication" in a book by Edith Grossman, though George Steiner argues that they overcome a "shared secrecy" in *After Babel*. Gregory Rabassa produced multiple works of this type, including one that begins by describing "that distant afternoon when [a certain character's] father took him to discover ice." For 10 points, name this kind of work, one example of which is the English-language edition of *100 Years of Solitude*.
ANSWER: **translation**s [accept equivalent answers involving such as **translated** works; accept more specific answers such as Spanish **translations**]

6. A treatise from this present-day country describes a trial by combat whereby a club-wielding man stands in a pit fighting a woman armed with a stone in a sling. This was the country of origin for a medieval treatise which depicts a woman teaching her student to use a sword and buckler. That early fencing treatise, once kept in the Tower of London, is known as I.33. The "plough," "ox," and "from the day" guard positions were taught by a man from this country, Paulus Kal. In the 16th century, some of this country's mercenaries were paid double for wielding large two-handed swords. Some of those mercenary pikemen fought in the Black Band, a group of renegade soldiers from this country who fought in both the Battle of Marignano and the Battle of Pavia in the service of the French king. For 10 points, name this country which used combat manuals known as *fechtbuch,* and where Georg von Frundsberg led the *landsknechts*.
ANSWER: Federal Republic of **Germany** [or Bundesrepublik **Deutschland**]

7. The central character of a poem by this man repeatedly imagines an object being shaken "for a flag on the bare hills" and murmurs"if I could bear you" to signify a sexual fantasy about the title character. This poet assured the reader "you are not Catullus, you know, / to lampoon these crude sketches of Caesar" in one poem, and asserted "meteors are not needed less than mountains" in another. He dubbed his personal philosophy "inhumanism," examples of which include the line "I'd sooner, except the penalties, kill a man than" the title figure of a poem that begins "The broken pillar of the wing jags from the clotted shoulder." This author of "Be Angry At the Sun" and "Shine, Perishing Republic" built a stone dwelling called Tor House in Carmel-by-the-Sea, and wrote a long narrative poem whose title character stomps Johnny to death before being shot by California. For 10 points, name this American poet of "Hurt Hawks" and "Roan Stallion."
ANSWER: Robinson **Jeffers** [or John Robinson **Jeffers**]

8. Mechanical agitation is added to this process by devices named for Scheibel or Kuhni. It's not heat exchange, but in industry, mixer-settlers are used to perform this process in a countercurrent fashion. A graphical method used to predict the results of this process involves extending tie lines toward an operating point outside the graph, which is shaped like an equilateral triangle. That method determines the number of equilibrium stages required to obtain a desired raffinate composition and is named for Hunter and Nash. Phase transfer catalysts work by performing this process on one reactant. The efficiency of this process can be quantified by calculating the octanol/water partition coefficient. For 10 points, name this technique typically performed in a separatory funnel, in which immiscibility between organic and aqueous liquids allows one to pull a solute from one solvent to another.
ANSWER: liquid-liquid **extraction**

9. In 2007, Clive Ruggles and Ivan Ghezzi identified one of these structures built 2300 years ago at Chankillo by the Casma-Sechin culture of Peru. Another ancient one of these things called the Cheomseongdae was built by Queen Seondeok in South Korea. Five of these structures called the Jantar Mantar, one of which has the Vrihat samrat yantra, were built by the Rajput prince Sawai Jai Singh starting in 1719. Matthias Corvinus financed one of these buildings at Oradea. Another one known as the Gurkhani Zij was operated by Ali Qushji, and was the primary building project of Ulugh Beg in Samarkand. One of these on the island of Hven built by Frederick II of Denmark was known as Uraniborg, while another was founded by John Flamsteed. One of these structures at Jaipur includes the world's largest sundial. For 10 points, name these buildings like the royal one at Greenwich, used by scientists like Tycho Brahe.
ANSWER: **observatory** [accept solar or lunar or any reasonable kind of **observatories**]

10. This religion's founder wrote a commentary on the *Surut Yusuf* of the Quran that is divided into 111 chapters each consisting of 42 verses. Since this religion's founder considered himself to be the *nuqt-yi ula,* or the "primal point" of all things, he called his first eighteen disciples the "Letters of the Living" that emanate from him. This religion split between its Azali school and the school headed by Azal's half-brother, who claimed to be the messiah described as "man yozheroho'llah," or "he whom God shall make manifest" in this religion's scripture *The Bayan*. This religion was practiced by Mirza Husayn-Ali, who later founded another religion. It was founded by Sayyed Ali Mohammed Sirazi, who was executed by a firing squad in Tabriz after claiming to be "The Gate" to prepare for the Hidden Imam. For 10 points, name this offshoot of Shi'ism which inspired one of its practitioners to found Baha'i.
ANSWER: **Bab**ism [or **Babi**; do not accept or prompt on "Baha'i" or "Bahaism"]

11. This person compares his speech to that of a man bitten like an adder, since the only people who will understand him will be those who have been bitten themselves. During a severe frost, this character praises another man for "walking barefoot" and going out in the "same cloak he always wore." When this character is introduced, he is wearing a garland of ivy and violets, and wishes to make a garland of ribbons for another character. He gives an extended speech that compares the "inner beauty" of a certain man to both a statue of Silenus and to the flute-playing Marsyas. This character complains to the gods that Agathon has lied down next to this man's ex-lover at the conclusion of a speech in which he states that Socrates was the only person who has ever made him feel shame. For 10 points, name this politician and general who gives a drunken speech in *The Symposium*.
ANSWER: **Alcibiades**

12. A committee called in this city by Charles V determined that it was allowable for Vesalius to dissect the human body. The phrase "Quod natura non dat [this city] non praestat" became a motto for this city, which, in 1335, was the site of a council that prohibited Christians from using Jewish or Muslim doctors. A battle named for this city began on the Greater and Lesser Arapiles hills, and saw Bertrand Clausel forced into taking command for the losing side. Before relocating to Burgos, this city was chosen as temporary capital by Francisco Franco, and it still houses the main archives on the Spanish Civil War. The loss of Marshal Auguste Marmont in a battle at this city led to the liberation of Madrid during the Peninsular War. King Alfonso IX recognized a "General School of the Kingdom" in this Leonese city. For 10 points, name this site of a major victory for the Duke of Wellington, which is home to the oldest Spanish university.
ANSWER: **Salamanca** [or **Salmantica**]

13. A glutamine-to-leucine mutation in the P-loop of these proteins can cause type 2A Charcot-Marie-Tooth disease. One class of these proteins contains a KVD finger in its loop 2 domain. Whether the critical functional domain of these proteins is in the middle or the end of their amino acid sequence determines whether they are C, N, or M-type. A "bipolar" one of these proteins called Eg5 is critical for the splitting of sister chromatids. The "conventional" type of these proteins contains an alpha-helical coiled-coil "stalk" domain bound to two light chains, whose TPR domains are important in cargo binding. These proteins utilize ATP hydrolysis to move in the anterograde direction, such as down the axon toward the synapse. For 10 points, name this class of two-footed motor proteins which carry proteins toward the plus ends of microtubules, in the opposite direction to dyneins.
ANSWER: **kinesin**s

14. After eating horse meat and falling asleep next to a camp fire in Shamshevo, this character dreams that his teacher gives him a "vibrating, liquid globe" made of droplets as he is told "That is life." As a youth, this man is exiled after he and his comrades acquire a bear, strap a police officer onto the bear, and throw both of them into the Moyka Canal. While imprisoned, this man befriends Platon Karataev, whose life-affirming philosophy inspires him for the rest of his life. This character believes that he must build hospitals, schools and other good projects, after the Martinist Osip Bazdeyev invites him to "combat the paramount evil" of the world. This character kicks out his first wife Helene Kuragin from his home and joins the Freemasons; later, he uses numerology to deduce that Napoleon must be the Antichrist. For 10 points, name this character, a philosophical opposite to Prince Andrei in *War and Peace*.
ANSWER: **Pierre** **Bezhukov** [accept either underlined name]

15. This composer wrote the aria "Vieni, o figlio" for an opera about a king who loves the Byzantine emperor's daughter Teofane. John Byram's epigram that coined the phrase "Tweedledum and Tweedledee" compared this man with his rival Giovanni Bononcini. This composer reused the melody of a sarabande from his first opera as the basis for an aria sung by a woman held captive by the Queen of Damascus in a Tasso-inspired opera. Another aria written by this composer of *Ottone* is sung by a man admiring the shade of a plane tree and, despite being marked "larghetto," is commonly known as the "Largo from" that opera. "Lascia ch'io piange" and "Ombra mai fu" are the most famous arias by, for 10 points, what German-British composer of the operas *Serse* and *Rinaldo*, the *Music for the Royal Fireworks*, and the oratorio *Messiah*?
ANSWER: George Frideric **Handel** [or Georg Friederich **Handel**]

16. A character in this novel who is obsessed with capturing the "ignobly decent" fights his way through a house fire to retrieve the manuscript of his novel *Mr Bailey, Grocer*. Another character in this novel maintains a long-running grudge against Clement Fadge, who gives the protagonist his first break at *The Current*. Harold Biffen commits suicide in this novel after an encounter in which Mr. Whelpdale reveals his engagement to Dora, the protagonist's sister. That protagonist breaks his engagement with Marian Yule after her father Alfred goes blind, leaving her poor; later, the protagonist marries Amy, the widow of his artistically-uncompromising foil Edwin Reardon. For 10 points, name this novel about the literary journalist Jasper Milvain set in the 19th-century home of hack writers in London, the most famous novel by George Gissing.
ANSWER: *New Grub Street*

17. Along with his graduate student Paul Bugos Jr., this man wrote an article describing the process of "village fissioning," observing that certain villages split up because tight kinship relations are necessary for mate selection. Late in life, he formulated a plan with Cecilia Matos to create a research center run by the dentist Charles Brewer-Carias. One of this man's close associates was known for developing the "thrifty gene hypothesis;" that man was James Neel. This man, who was given the name "Shaki," or "pesky bee," produced films like *Magical Death* and *The Ax Fight*. He was accused of helping to propagate a measles epidemic in the slander-filled book *Darkness in El Dorado*. This University of Missouri professor researched a people that he claimed participated in "chronic warfare," from whom he took thousands of blood samples. For 10 points, name this anthropologist who studied the Yanomamo tribe.
ANSWER: Napoleon **Chagnon** [or Napoleon Alphonseau **Chagnon**; accept "Nap" **Chagnon**]

18. A pulpit with an inscription of this man's history is placed in the Cave of the Patriarchs in Hebron, and a place of worship bearing this man's name was destroyed on orders of Moshe Dayan in 1950. In Trinidad and Tobago, as well as Jamaica, multi-colored model mausoleums are ritually offered to the sea in commemoration of this man's death, known as the Tadjah or Taziyah. When Saladin asks a nobleman how he survived wearing a cap of centipedes on his head as punishment, the nobleman claims he carried a relic of this man on his head. Known as the "Master of the Youth of Paradise," this man led his family to Kufa from his hometown of Medina, whereupon his caravan was held up by a general of Yazid I. Along with his 72 companions, this man was beheaded at the Battle of Karbala at the hands of the Umayyads. For 10 points, name this grandson of Muhammad and son of Ali.
ANSWER: **Husayn** Ibn-Ali ibn Ali Talib [or **Hussein** or **Hosay**n]

19. A prophet in these people's mythology was suddenly born when a man working in a field plowed an especially deep furrow. A sacred text of these people called "The Art of the Thunderstruck" was attributed to the seer-demigoddess Vegoia. Their love goddess was represented by a swan and accompanied by a retinue of Lasas, while their many death gods include the wolflike Calu and the torch-bearer Vanth. The names of many of these people's deities, though not that of their smith god Sethlans, were engraved on a life-size bronze model of a sheep's liver found at Piacenza. During a war, a king of these people freed hostages in recognition of the bravery of Cloelia and was impressed by the valor of a man who burned his own hand off, Mucius Scaevola. For 10 points, Lars Porsenna was a king of what people, whose chief triad of deities was made up of Menrva, Uni, and Tinia?
ANSWER: **Etruscan**s [or **Rasenna**; prompt on "Roman mythology' or "Rome" until "Roman" is read]

20. The most-commonly accepted alternate theory about these phenomena is Ian Browne's suggestion that they are type 1 Fanaroff-Riley sources. Boettcher et al. proposed an evolutionary scenario to unify these phenomena, suggesting that they evolve from their FSRQ to LBL to HBL subtypes. The Global Telescope Network was created to observe these things, which are thought to comprise two-thirds or more of all flat-spectrum radio sources. Edward Spiegel coined the name for these phenomena, since they appeared to have properties of OVVs and BL Lac objects. Because these structures exhibit extreme Doppler boosting, they unusually have no emission lines. Usually found in large elliptical galaxies, these structures are often studied as sources of superluminal motion since it is thought that their relativistic jets point towards Earth. For 10 points, name these active galactic nuclei, thought to be a type of quasar.
ANSWER: **blazar**s [prompt on quasars; prompt on AGNs or active galactic nuclei]

Tiebreaker: The first full-length book on this people's origins was written in the 1780s by Heinrich Grellmann, and the reports of an agency that gathered information on them were collected in a 1905 book by Alfred Dillmann. Writers like Jean-Paul Clébert associated a semi-mythological figure called the "phuri dai," or Old Mother, with these people. When writing about these people in 1863, Richard Liebich coined the phrase "life unworthy of life." A 1971 international conference of these people adopted the national anthem *Dželem Dželem,* and a green and blue flag with a red, sixteen-spoked chakra. According to legend, one of them made the nails used to crucify Jesus. They are sometimes broken into three confederations - the Kalderash, Gitanos, and the Manush. The genocide of these people during World War II is known as the *Porajmos*, or the Devouring. For 10 points, name these itinerant people now found mostly in Europe.
ANSWER: **Rom**anies [or **Gypsy** or **Gypsies** or **Sinti** or **Gitanos** or **Gitans** or **Zigeuner** or **Tsiganes** or **Cingaros**]

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Bonuses

1. Alcohols are often converted to tosylates prior to performing a substitution reaction because tosylates are much better examples of these molecular fragments than alcohols are. For 10 points each:
[10] Name these molecular fragments in organic reactions. Halogens are common examples of them, since they form very stable free anions.
ANSWER: **leaving group**s [or **LG**s, do not accept or prompt on "groups"]
[10] In this type of organic reaction, a hydrogen atom and a leaving group are removed from a molecule to form an alkene in either one or two steps.
ANSWER: **elimination** reactions
[10] Another good leaving group is this functional group, which is like a tosylate, only with a triply-halogenated carbon atom in the place of the toluene group.
ANSWER: **triflate** [or **trifluoromethane sulfonate**, do not accept or prompt on partial answers like "sulfonates"]

2. This composer made a graphic-notation preliminary sketch for his early work *Metastasis* that he then used as the basis for the Philips Pavilion at Expo 58 in his day job as an architect in Le Corbusier's firm. For 10 points each:
[10] Name this 20th-century composer. His pieces *Rebonds* and *Psappha* are written for solo percussion, while his *Pleiades* is for six percussionists.
ANSWER: Iannis **Xenakis**
[10] Xenakis used the symmetry group of the octahedron as the basis for the first "phase" of his 1965 composition *Nomos Alpha*, a solo piece for this instrument. It is played by Mstislav Rostropovich and Yo-Yo Ma.
ANSWER: **cello** [or **violincello**; but do not prompt on "violin"]
[10] Xenakis created the UPIC system to produce music in this genre, which involves the manipulation of blocks of recorded sound. Pierre Schaeffer was the most prominent early developer of this genre.
ANSWER: **musique concrète** [prompt on "electronic music" or "electroacoustic music"]

3. This literary character conducts an interview as part of the "Solid Men of Boston" series in the first chapter of the second novel in which he appears. For the stated number of points:
[10] Name this character who moves to Boston from Equity, Maine with his wife Marcia Gaylord shortly after their marriage in an 1882 novel.
ANSWER: **Bartley** **Hubbard** [accept either underlined portion]
[5,5] For 5 points each, name the two novels in which Bartley Hubbard appears. The first was the first major American novel to center on a divorce, while the second details the changing fortunes of its title Boston paint merchant.
ANSWER: A *Modern Instance* and *The **Rise of Silas Lapham***
[10] *A Modern Instance* and *The Rise of Silas Lapham* were written by this "Dean of American Letters," who also spent ten years as chief editor of the *Atlantic Monthly*.
ANSWER: William Dean **Howells**

4. Susan Sontag criticized the absence of beauty in this artist's work in her essay "America, Seen Through Photographs, Darkly." For 10 points each:
[10] Name this American photographer, whose portrait of Norman Mailer for the *New York Times Book Review* featured an awkward spread-legged pose. She also took a famous picture of Eddie Carmel.
ANSWER: Diane **Arbus** [or Diane **Nemerov**]
[10] An Arbus photograph of a young boy with a maniacal expression holding a toy grenade in his hand was taken in this New York City landmark. It was designed by the landscape architects Calvert Vaux and Frederick Law Olmsted.
ANSWER: **Central Park**
[10] Arbus's recurring themes made her something of an artistic heir to this earlier American, who took many freelance crime photographs. His book *Naked City* inspired the visual aesthetic of the Jules Dassin film of the same title, and one of his photos appeared on the original cover of *The Presentation of Self in Everyday Life*.
ANSWER: **Weegee** [or Arthur **Fellig**; or Ascher **Fellig**]

5. Answer the following about the Committees of Correspondence, for 10 points each.
[10] Joseph Warren and Sam Adams proposed a Massachusetts Committee of Correspondence after the namesake 1772 "affair" of this British ship, which was raided by the Sons of Liberty after running aground in Rhode Island.
ANSWER: HMS *Gaspée* [or the *Gaspée* **Affair**]
[10] While serving on the Committee, Joseph Warren drafted the 1774 resolves known by this name, which threatened a boycott of British goods if the Intolerable Acts were not repealed, and rejected the Massachusetts Government Act.
ANSWER: **Suffolk** Resolves
[10] Together with Benjamin Franklin and Dr. Arthur Lee, this Connecticut-born man became the first U.S. diplomat sent abroad when he went to France as a secret agent. He had been sent by the so-called Secret Committee, and met with the Comte de Vergennes in 1776 to secure munitions.
ANSWER: Silas **Deane**

6. In Latin, this principle is called *ex contradictione quodlibet*, and was first discussed in an article by a man known only as Pseudo-Scotus, since he is not actually Duns Scotus. For 10 points each:

[10] Name this principle used in para-consistent logics, which follows from making the assumption that both a statement and its negation are true. It takes its name from the fact that an enormous amount of statements could be proven true if one uses it.

ANSWER: principle of **explosion**s

[10] The principle of explosions uses this kind of statement, since no objects in the domain of discourse can satisfy both a statement and its negation. In this kind of statement, the antecedent consists of members of the empty set.

ANSWER: **vacuous**ly true statement [or **vacuous** truth; do not accept or prompt on "truth"]

[10] A vacuous truth is similar to this other kind of statement since it often does not convey any logically useful information. This kind of statement is always true by necessity, such as "If green is a color then green is a color."

ANSWER: **tautology** [accept word forms]

7. Answer the following about the period leading to the Law of the Twelve Tables, for 10 points each.

[10] The law was adopted after a "secession" by these ordinary citizens of Rome, who waged a "Conflict of the Orders" against the patricians.

ANSWER: **plebeian**s [or **plebs** or **plebes**]

[10] The plebs' complaints about distribution of public land led this consul to put forth the first agrarian law circa 486 BC. He also made a treaty with the Latin towns and formed a league with the Hernican tribe. Unfortunately, the patricians ganged up on him, put him on trial for treason, and had him beheaded.

ANSWER: Spurius **Cassius** [or Spurius Cassius **Viscellinus** or **Vecellinus**]

[10] Table Eight stipulates that "whoever is convicted of speaking false witness shall be flung from" this place, named for the legendary figure whom Titus Tatius bribed to gain entry to the Capitoline Hill.

ANSWER: **Tarpeian Rock** [or **Rupes Tarpeia** or **Saxum Tarpeium**]

8. John Gielgud played this role in a famed 1950 production directed by Peter Brook. For 10 points each:

[10] Name this merciless character who attempts to coerce Isabella into sleeping with him, despite his pronounced ban on fornication, in exchange for sparing her brother Claudio for his violation of that ban.

ANSWER: **Angelo**

[10] Angelo is given control of Vienna during Duke Vincentio's "absence" in this Shakespearean "problem play," whose title refers to the retributive justice that would doom Angelo alongside Claudio.

ANSWER: *Measure for Measure*

[10] One of the sources for the plot of *Measure for Measure* was "The Story of Epitia" from this Italian author's collection *Hecatommithi*, which was also a source for *Othello*.

ANSWER: **Cinthio** [or **Cynthius**; or Giovanni Battista **Giraldi** or Giraldi **Cinthio**]

9. Sherwood algorithms are sometimes considered to be an example of this class of other algorithms, such as choosing a pivot at random in quicksort. For 10 points each:
[10] Name this this class of randomized algorithms, which is guaranteed to produce a result that is correct, but whose runtime is probabilistic.
ANSWER: **Las Vegas** algorithm [accept synonyms for algorithm such as "method"]
[10] Las Vegas algorithms are contrasted with this other type of algorithm, which produces a result that may be correct, but the runtime is not-probabilistic. A hybrid of this type of algorithm and the Las Vegas algorithm was used to define the Atlantic City class of algorithms.
ANSWER: **Monte Carlo** algorithm [accept synonyms for algorithm such as "method"]
[10] One example of a Las Vegas algorithm would be randomly assigning values of true or false to variables of a Boolean formula in this problem, checking to see if the overall formula is valid, and backtracking if not.
ANSWER: Boolean **satisfiability** problem [or **SAT**; accept 2-**SAT** or 3-**SAT**]

10. Answer the following about national animals, for 10 points each.
[10] This mythical bird beloved by Bruce Arthur and all other Hungarians carries the flaming Sword of God. A massive statue of it stands on Gerecse Mountain in Tatabánya, and it was part of the foundation myth for Hungary's Arpad Dynasty.
ANSWER: **Turul** [prompt on falcon]
[10] Réunion Island was once thought to be home to a white one of these extinct flightless birds, the usual mascots of Mauritius.
ANSWER: **Dodo** [or **Raphus cucullatus**]
[10] The national animal of Papua New Guinea, the dugong, is a modern relative of the enormous extinct sea cow named for this naturalist. This man accompanied Vitus Bering on his Kamchatka expedition.
ANSWER: Georg Wilhelm **Steller**

11. In this play, a woman visits the tomb of her husband, whose ghost tells her that her son was hubristic enough to build a bridge over the Hellespont. For 10 points each:
[10] Name this play, in which Atossa is brought news that her son has failed to conquer the Greek army.
ANSWER: The *__Persians__* [or *__Persae__*]
[10] Aeschylus, the author of *The Persains*, also wrote *Laius, Oedipus*, and this surviving tragedy which completes the trilogy. In it, Eteocles describes the valor of the members of the title group before he and Polyneices attack each other.
ANSWER: *__Seven Against Thebes__* [or *__Hepta epi Thebas__*]
[10] In 1974, wrappings of a mummy was found to contain a lyric rendition of the story of the Seven Against Thebes attributed to this member of the Nine Lyric Poets, who also wrote a fragmentary epic about Geryon.
ANSWER: **Stesichorus**

12. This man defended the thoughts of Margaret Washburn in his address given as head of the American Psychological Association, "The Interpretation of the Animal Mind." For 10 points each:
[10] Name this functionalist who chaired the psychology department at Chicago for twelve years starting in 1926, but may be best remembered for being John Watson's assistant.
ANSWER: Harvey A. **Carr** [the "A" stands for nothing, except possibly awesome]
[10] Carr helped Watson conduct this experiment, which proved the "chain of responses" theorem and was named for the noise made by rats when they ran into walls in shortened mazes.
ANSWER: **Kerplunk** experiment
[10] Carr stepped in as chair after Watson moved on to this university, where he conducted the Little Albert Experiment, before being dismissed for having an affair with his graduate student Rosalie Rayner.
ANSWER: **Johns Hopkins** University [make sure they say "Johns;" do not accept "John Hopkins University"]

13. This festival usually lasts for approximtaely three weeks and includes a Sorcerer's Dance designed to scare away ghosts, as well as an Archery Contest to commemorate Mongol warriors. For 10 points each:
[10] Name this festival celebrated in Lhasa. It is a celebration of the New Year of a certain region and is mostly meant to honor the Shakyamuni Buddha.
ANSWER: **Losar**
[10] Losar is the major group of festivals celebrated in this region, a part of China. The Dalai Lama is currently in exile from this place.
ANSWER: **Tibet** [accept **Tibet** autonomous region or **Xinzang** autonomous Region]
[10] If the Dalai Lama were not in exile, he would live in this Tibetan palace. During Losar, texts are often read aloud to "expel ghosts" from this enormous structure.
ANSWER: **Potala** Palace

14. You and your teammates are residents of Mercia who have broken the law. For 10 points each:
[10] Thanks to the revolutionary new coinage of this king of Mercia, you can pay your fine in coins with his name and face on them, or the face of his horribly ugly wife Cynethryth. This king also built a namesake dyke to mark the boundary between Mercia and Wales.
ANSWER: **Offa** of Mercia
[10] This is the Germanic term for the payment you must make to the party you've injured, most often associated with a payment to the family of a man you've killed, whether or not you meant to do it.
ANSWER: *wergild* [or **weregild**, prompt on translations such as man-money]
[10] If your crime was intentional, you'll have to pay both *wergild* and this separate fine collected by the king himself. It is similar to *manbot*, except the *bot* is paid to the Lord of the house. Get that money, Offa!
ANSWER: *wite* [or "**bloodwite**" or "**fyht wite**"; translations appear to be words like "punishment" and "penalty," so prompt on things like that]

15. The Kolmogorov-Arnold-Moser theorem gives the conditions for determining which of these constructs are preserved and which ones are destroyed due to perturbations. For 10 points each:
[10] Name these constructs in phase space. The trajectories of an integrable system can be confined onto these constructs.
ANSWER: **invariant torus**es [or **invariant tori**, do not accept or prompt on partial answers like "torus"]
[10] One of the criteria for an invariant torus to survive a perturbation is that it must NOT have this property. Driving a harmonic oscillator at this frequency will cause the amplitude of the oscillations to grow appreciably.
ANSWER: **resonant** torus or frequency [accept **resonance**]
[10] The general solution for a driven harmonic oscillator can be broken into the sum of a steady-state solution and this solution. This solution, whose parameters depend on the initial conditions, contains an exponential term, so it decays to zero and becomes negligible at large times.
ANSWER: **transient** solution

16. After this attempt failed, someone allegedly tried again by serving a bowl of poisoned rice to the target at the Bandung Conference. For 10 points each:
[10] Name this 1955 event, in which a time bomb detonated on an Air India plane called the Kashmir Princess, but the target was not killed because he allegedly had to have an emergency appendectomy.
ANSWER: **attempted assassination** of **Zhou** Enlai [prompt on less specific responses - accept any answer that specifies that people were **trying to kill** Chinese premier **Zhou** Enlai aka Chou En-lai]
[10] Instead of blowing up, Zhou Enlai flew to Rangoon to meet U Nu and this first prime minister of India, the leading figure of the Non-Aligned Movement.
ANSWER: Jawaharlal **Nehru** [accept Pandit **Nehru**]
[10] At the same time, the first Taiwan Straits Crisis broke out when the People's Republic started shelling these two tiny islands in the Strait occupied by Chiang Kai-Shek. These islands became an oft-repeated phrase in the 1960 Nixon-JFK debates over the extent of U.S. intervention.
ANSWER: **Quemoy** and **Matsu** [in either order; or **Kinmen** and **Matsu**]

17. Members of the *Brassica* family use one mechanism for this phenomenon, which relies on the proteins SRK, SLG, and SCR, whose genes form the S-locus. For 10 points each:
[10] Name this phenomenon, which is also accomplished due to separate "pin" and "thrum" phenotypes in primrose plants.
ANSWER: **self-incompatibility** [accept word forms]
[10] Biochemical mechanisms of self-incompatibility in flowering plants prevent them from fertilizing themselves when this substance, produced by their stamen, enters their pistil.
ANSWER: **pollen**
[10] Members of the *Brassica* family use this type of incompatibility, named for a diploid phase in the life cycles of plants that exhibit alternation of generations. It is the dominant phase in vascular plants such as gymnosperms and angiosperms.
ANSWER: **sporophyte** self-incompatibility

18. Greeks, especially in the Hellenistic era, tended to carry out this process through the so-called *interpretatio graeca*, in which local deities would become epithets or aspects of existing Greek gods. For 10 points each:
[10] Name this process in which different or conflicting beliefs are blended together, as in the identification of the Egyptian god Amun with Zeus to create Zeus Ammon.
ANSWER: **syncretism** [accept other word forms like **syncretization**]
[10] Ptolemy I introduced the worship of this syncretic god to unify the Greeks and native Egyptians he ruled. His human form was more appealing to the Greeks than the Memphian bull-deity he partly replaced.
ANSWER: **Serapis** [or **Sarapis**]
[10] This Phoenician god, the tutelary deity of Tyre, was identified by the Greeks as "Tyrian Heracles." A pair of cippi dedicated to this god, unearthed on Malta, were instrumental in understanding the Phoenician language.
ANSWER: **Melqart** [or **Melek-qart**; or **Milqartu**]

19. Three members of this group from Nuremberg, including Georg Pencz, were dubbed "godless painters" and imprisoned for promulgating the views of Thomas Müntzer. For 10 points each:
[10] Name this 16th-century group of engravers whose other leading lights included Heinrich Aldegrever and Albrecht Altdorfer. They got their name for their focus on producing detailed, postage stamp-sized prints.
ANSWER: the **Little Masters** [accept **Kleinmeister**]
[10] The other two "godless painters" were two brothers, Barthel and Sebald, with this surname. Their works include *Christ and the Sheep Shed* and *Death and the Standing Nude*.
ANSWER: **Beham** [accept (Hans) Sebald **Beham** or Barthel **Beham**]
[10] Pencz served in the atelier of this man, a major influence on the Little Masters. His own engravings include *Knight, Death, and the Devil* and *Melencolia I*.
ANSWER: Albrecht **Dürer**

20. In this novel. Selvam becomes an assistant to Dr. Kenny, who had secretly treated his mother for infertility. For 10 points each:
[10] Name this novel about the struggles of Rukmani, who marries Nathan at the age of 12. It takes its title from Coleridge's poem "Work Without Hope."
ANSWER: *Nectar in a Sieve*
[10] *Nectar in a Sieve* was the first published novel by this female Indian author.
ANSWER: Kamala **Markandaya** [or Kamala Purnaiya **Taylor**]
[10] In this other Kamala Markandaya novel, Mirabai falls in love with Richard, a handsome Englishman her brother Kit brings home to India.
ANSWER: *Some Inner Fury*