**ACF Nationals 2010**

**Packet by Brown**

1. A nude Andromeda on the left with her back to the viewer watches an armor-clad Perseus perform the title action in his *Perseus Slaying the Sea Monster*. He was also fond of painting series as in his *The Heart Desires* and *The Soul Attains*, two parts of his Pygmalion and Galatea cycle, and his large four-part group about Sleeping Beauty, the *Briar Rose* paintings. A male nude in his *Phyllis and Demophoon* caused scandal but the three male nudes in his canvas *Wheel of Fortune* resulted in little outcry. His artistic diversity is reflected in the numerous stained glass windows and book illustrations, such as those for an 1896 edition of Chaucer, which he did for the workshop of his friend William Morris. An abiding interest in Arthurian myth, typified by his painting *The Beguiling of Merlin*, also characterized, for 10 points, what Pre-Raphaelite artist and painter of *King Cophetua and the Beggar Maid*?  
ANSWER: Edward Coley **Burne-Jones**

2. One of this author’s works begins with Menaphon and Amethus sighing about their love for Thamasta and Cleophila. Later, Corax heals Meleander, the father of Eroclea. Besides *The Lover’s Melancholy*, this man wrote a historical play in which Daliell is the suitor of the daughter of Lord Huntley, Katherine, the eventual wife of the title claimant to the throne of King Henry VII. His collaborations with Thomas Dekker include *The Sun’s Darling* and *The Witch of Edmonton*. In one of his plays, Donado’s simple nephew, Bergetto, tries to woo the title character, and Hippolita is poisoned by Vasques. That man’s master, Soranzo, is murdered by Giovanni, the incestuous brother and killer of the title character, Annabella. For 10 points, name this author of *Love’s Sacrifice* and *’Tis Pity She’s a Whore*.  
ANSWER: John **Ford**

3. AMANDA extended one of these created by David Turner, and Wadler wrote a book on how to use monads in them.  Charity is an example of the so-called “total” type of these that prohibit non-termination, and easy memorization in them is attained through the fact that many of them maintain referential transparency.  Some 70 SFRIs extend one of these beyond its R6RS standards, while another employs call-by-need, a form of lazy evaluation.  Besides that one named for the first namesake of the Curry-Howard correspondence, side effects aren’t present in “pure” ones.  Microsoft recently created one that is similar to OCaml called F# ["F-Sharp"], and they usually implement the tuple data type.  Exemplified by Scheme and Lisp, for 10 points, name this type of programming language contrasted with imperative languages.

ANSWER: **functional** programming languages

4. One member of this house won a major victory at Guastalla during the War of the Polish Succession, while a member of this house named Boniface served as Archbishop of Canterbury and died accompanying Edward I on a crusade. This house was established by a count known as the White-handed, while a female member of this house named Louise was the mother of King Francis I of France, in which capacity she negotiated the Treaty of Cambrai. Another member of this house recovered much of its territory at the treaty of Cateau-Cambresis; that member was Emmanuel Philibert. A more famous member of its Carignan branch, by defeating the Ottomans at Zenta, helped bring about the Treaty of Karlowitz. For 10 points, identify this Piedmontese house which ruled Italy from 1861 until 1946, and whose members included Eugene as well as several Umbertos and Victor Emmanuels.

ANSWER: House of **Savoy**

5. This author depicts the revolt of a mother against her husband, a senior executive at the Engladia Insurance Company, in the novel *The Dark Room*.Such short stories as “A Breath of Lucifer” and “Uncle” were collected in a volume titled, “The Grandmother’s Tale,” which focuses on a girl who was married at seven and travels the sub-continent to find her husband. In another work by this writer a husband loses his wife, Susila, to typhoid fever and attempts to contact her beyond the grave. That novel, *The English Teacher*, was followed by a work that introduced the character Rosie, a dancer, whose career is managed by the rascally Raju who is mistaken for a swami in *The Guide*.For 10 points, identify this Indian author who set his works, including such other novels as *The Financial Expert* and *The Painter of Signs*, in the fictional town of Malgudi.

ANSWER: Rasipuram Krishnaswami. **Narayan**

6. In the Spanish cabbalistic tradition this action was undertaken to counteract the effects of a state called *'ibbur*. In Tamil communities, troupes of musicians called *pampaikkarar* are tasked with doing this. In North India, those seeking to have this action performed often make a pilgrimage to the Balaji temple of Hanuman where they must enter a trance known as *peshi*. The arm relic of John Gualbert of Florence was said to perform this action, and in Islam this action is sometimes performed by observing the motion of a finger and bleeding it. In a more famous episode, Jesus traveled to the land of the Gadarenes and did this to Legion, which resulted in a group of pigs running into the sea and drowning. For 10 points, identify this religious practice of expelling demons from possessed persons.

ANSWER: **exorcism**(accept **expelling demons** or the like before mentioned, prompt on spiritual **healing**)

7. Evidence presented during the resolution of this historical affair included an intercepted letter from artillery captain Caleb Huse to Major Josiah Gorgas. The language relevant to this dispute in the treaty which led to its resolution was later adopted as Article 8 of the 1907 Hague Convention. One party to this dispute rejected a settlement proposed at the Johnson-Clarendon Convention. Resolving this dispute became the major post Civil War task of Charles Francis Adams and it arose from the place of construction of a ship that would later be sunk by the USS *Kearsarge*. Resolved by an arbitration panel established by the Treaty of Washington with an indemnity payment of $15 million, for 10 points, identify this dispute between the United States and Britain, stemming from British production of a namesake Confederate warship.  
ANSWER: ***Alabama*** claims affair

8. This man composed a pas de fleurs for a score mostly written by his tutor, *Le Corsaire*, which formed the basis of his *Naïla*. A suite adapted from one of his works consists of four movements like “Les Chasseresses” and “Cortège de Bacchus.” That piece depicts a nymph falling in love with the shepherd Aminta, only to be captured by Orion. Napoleon III commissioned his cantata *Alger*, this led to a collaboration with Ludwig Minkus and his setting of a Remy Belleau poem, *Avril*. In a work by this man Gérald’s love, the daughter of Nilakantha sings while ringing a magic item, and has the duet, “Dôme épais,” with Mallika. In a ballet by this man, the lovers Swanilda and Franz try to communicate with the title doll. The two aforementioned songs, “The Bell Song” and “The Flower Duet,” are part of an opera about the daughter of a Brahmin priest during the British occupation. For 10 points, name this composer of the opera *Lakmé* and the ballets *Sylvia* and *Coppélia*.  
ANSWER: Clément-Philibert-Léo **Delibes**

9. This protein's substrate can also be processed by cytochrome P450 2E1. *Lactobacillus kefir*'s use as a biocatalyst is due to the broad substrate specificity of this enzyme, other catalytically useful examples of which come from *Thermonanaerobium brockii* and horse liver. Potent inhibitors of this enzyme include CNAD and pyrazole. Types of this enzyme include cinnamyl ones in plants and dimeric ones in mammals, which can include EE, ES, and SS varieties depending on whether they include steroid-active monomers. In its active site, Cys-146, Cys-174, His-67, and Ser-48 coordinate a zinc atom. Its sigma-sigma form is found in the stomach. A hepatic form of this oxidoreductase can lead to blindness by catalyzing the oxidation of methanol to formaldehyde. For ten points, name this enzyme which in yeast can generating NAD+ and its namesake product during fermentation.

ANSWER: **alcohol dehydrogenase** [also accept **ADH**]

10. One portion of this work argued that popular theories of punishment, championed by the likes of Pufendorf, were limited because they promote justice by referring to the future, rather than the past. In another section, it asks “Who would guess why the fish is a symbol of Christianity,” before showing how the object of perception is actually made incomprehensible through the use of allegory. Book IV, which deals with Ethics, discusses the case of starvation as a situation where an individual has renounced one of the title concepts. Originally published with an appendix that outlines a polemic against Kantian concepts, its preface advises the reader to seek out its author’s “On the Fourfold Root of the Principal of Sufficient Reason” before tackling this tome which was heavily influenced by Hindu philosophy, but criticized for its overwhelming pessimism. For 10 points, identify this philosophical treatise by Arthur Schopenhauer.

ANSWER: ***The World as Will and Idea*** or ***The World as Will and Representation*** or ***Die Welt als Wille und Vorstellung***

11. In the closing scene of this play, one character tells another to rest, to which she responds "Thank you Father - have I been wicked?" That occurs in this play shortly after another character departs to marry Madeline Arnold. A major aspect of this play's original staging involved the freezing of the action so that characters could deliver short soliloquys that revealed their thoughts. Another character in this play dies after suffering a stroke while watching his son win a rowing race. One character in this play raises her son on stories of her fiancee Gordon Shaw, who died in World War I. That son, also named Gordon, is the product of an affair with Edmund Darrell and is born after the main character aborts her child by Sam Evans following her discovery of hereditary insanity in the Evans family. Ultimately, it is Charles Marsden who ends up caring for Nina Leeds at the end of, for 10 points, what long play written by Eugene O'Neill?  
ANSWER: ***Strange Interlude***

12. Captives under one ruler of this name built the so-called Dam of Caesar in Shushtar. Another man of this name was declared emperor before his birth after his father died, and took Nisibis after winning the Battle of Singara. One ruler of this name defeated and killed Gordian III in a battle at Massice, which was renamed after him when Gordian’s successor, Philip the Arabian, became his tributary. That ruler captured the emperor Valerian alive at Edessa and used his head as a footstool, while the second ruler of this name defeated Julian and Jovian after a protracted war against Constantius II, which included his capture of Armenia. For 10 points, give this name shared by the son of Ardashir I as well as three Sassanid rulers, the first two of whom were known as “the Great”.  
ANSWER: **Shapur** or **Sabur** or **Sapor**

13. One program for analyzing data from this technique is DBW, which implements the Rietveld method of using least-squares to match a theoretical line profile to the experimental profile. When theoretical spectra are missing, programs such as TOPAS, GSAS, and Fox can be used for de novo structure determination. The Hall-Williamson method, based on the Scherrer equation and the Stokes-Wilson approximation, can be used to separate peak broadening caused by strain and by size. During analysis, intensity is plotted as a function of "2 theta" or of "q", and a correction for "texture" may be applied if plates or rods align along the axis of the sample holder. For 10 points, name this non-destructive analytic technique also used to study expansion tensors, lattice parameters, phase transitions, and crystallinity, which, for ten points, involves measuring the intensity of neutrons or X-rays as a function of scattering angle.

ANSWER: **powder diffraction** [accept X-ray **powder diffraction**, neutron **powder diffraction**, etc.; prompt on X-ray **diffraction** or neutron **diffraction**, etc.]

14. This city's so-called Robot Building houses one headquarters of United Overseas Bank, and a sculpture representing its country's 1932 Constitution is surrounded by four wing-like structures at the Democracy monument. Also home to Dusit Park, the popular sporting venues in this city include Ratchadamnoen and Lumphini stadiums, and noted centers of learning include Mahidol University. It was merged with the city of Thon Buri, by which it is linked by three bridges, after the capital was moved here - those bridges span this city located on the Chao Phraya River. For 10 points, name this city whose Grand Palace complex is the residence of King Rama IX.

ANSWER: **Bangkok** or **Krung Thep** Maha Nakhon

15. In the first movement, an oboe call is answered by the 'life-will' motif in the basses, while in another movement, a soloist cries "All joy wills eternity, wills deep eternity!." The first movement also features an offstage snare drum inspired by military bands. This work opens with 8 horns playing a unison theme derived from the finale of Brahms's First Symphony, and the composer removed the original last movement of this work but then brought it back as the last movement of his next symphony. Some of the movements of this work were originally titled "Summer marches in" and "What the flowers in the meadow tell me." The fifth movement is a setting of the *Wunderhorn* song "Three Angels were Singing," while the fourth is a setting of the "Midnight Song" from Nietzsche's *Thus Spake Zarathustra*. For 10 points, identify this massive six-movement symphony, its composer's longest, which followed the *Resurrection.*

ANSWER: **Mahler's 3rd** Symphony

16. In one of this author’s works the Countess Mathilde’s ownership of a beautiful heirloom inspires the jealous Saint Clair to fight a duel and he dies. That work, *The Etruscan Vase*, was written four years before this writer’s reimagining of the Don Juan legend, *The Souls of Purgatory*. In addition to such historical novels as *The False Demetriuses*, this author created such fantastic characters as a copper statue that comes to life and kills would be lovers in *The Venus of Ille*, as well as a dissolute young man who is granted three wishes by Jesus, *Federigo*. He first made his name with a pair of literary hoaxes titled *The Theater of Clara Gazul* and *La Guzla*. Most of his short stories were published in the volume *Mosaic*, including one set in Porto Vechhio, Corsica, that ends with Fortunato being killed by the title character, “Mateo Falcone.” For 10 points, identify this French author of a story about Don Jose’s love for a gypsy named *Carmen*.  
ANSWER: Prosper **Merimee**

17. A history of this conflict was published in 1982 by Uta-Renate Blumenthal, and one side was supported by a tract issued by Humbert of Silva Candida entitled *Adversus simoniacum*. A promulgation banning its central action was issued by Hugh of Die at the council of Autun, and a compromise was supported by Ivo of Chartres in the conflict over it. Paschal III offered to renounce all holdings of the Church in return for the concession of free elections and the abandonment of it. It ended when the first Lateran Council ratified an agreement in which Holy Roman Emperor Henry V renounced use of the ring and crosier. This conflict resulted in the excommunication of Henry IV by Gregory VII, and Henry's subsequent trip to Canossa. For 10 points, identify this conflict ended by the Concordat of Worms, which revolved around whether secular rulers had the power to appoint bishops.  
ANSWER: lay **investiture** controversy

18. A recent trend in this language uses an expletive subject and accusative object to indicate a passive, called the “new impersonal construction” or “new passive”. Venceslaus Ulricus Hammershaimb developed an alphabet for a neighbor based on this language, which uses one of its distinct letters to represent various phonemes. Some speakers of this language use “dative sickness”, turning accusative into dative in the so-called “quirky subjects” for verbs which don’t take the nominative. Traders speaking this language developed a pidgin with Basque in the seventeenth century. Doubled voiceless stops in t his language are preaspirated, and like Faeroese, it uses the letters thorn and eth to represent dental fricatives. For 10 points, name this wacky North Germanic language, a descendant of Old Norse spoken in Reykjavík.  
ANSWER: **Icelandic** language or **Íslenska**

19. An experimental measurement of one end-product of this process can be obtained by examining the metal-deficient objects called blue compact dwarf galaxies, while Spite *et al*. studied another result of this process by examining the surfaces of population II stars. Since in order for this process to occur the energy contributed by relativistic species must be constrained, this process functions as a cosmological limit on the number of neutrino species. The first calculations describing this process were published in 1948 in the famous "alpha-beta-gamma" paper by Alpher and Gamow. It provides a constraint on the baryonic matter density, implying most matter density is in dark matter. Beginning during the radiation-dominated era when the universe was about one second old, the time required for this process to run its course can be inferred from the relative abundances of helium and hydrogen. For 10 points, identify this process in the early universe which resulted in the formation of the light elements.ANSWER: Big Bang (or primordial) **nucleosynthesis** [accept **BBN**]

20. In Hungarian mythology, three children named Almafi were all born from these objects. In Russian mythology, Ivan the Mute used two of these objects to rejuvenate two seamstresses, who gave him a magical handkerchief, and those belonging to Tsar Vyslav Andronovich were routinely stolen by the Firebird. In the Celtic legend of the voyage of Maeldun, these objects are devoured by the beasts which inhabit the Island of the Fiery Swine. While wooing Gerd, Skirnir offers her eleven of these objects, and the old Volsung was conceived after Rerir's wife consumed one of these items. Thiazzi kidnapped Idun to obtain them, and three of these objects were dropped by Hippomenes to distract Atalanta during a race. Presented by Paris to Aphrodite, for 10 points, identify these edible objects, also found in the Garden of the Hesperides.  
ANSWER: **apple**s

21. One of these works revels in the immense joy of eating “Fat apple, banana, pear, / gooseberry”, while another asks, “Is there no constellation Rider?” The author of these exhorts the reader to “take inspiration from the flame” in transforming and “turn[ing] yourself into wind” like Daphne. One poem in this collection worries about offending “the great unsuing gods” “Just because they do not know the hard / strong steel that we produce”, one of several that laments the aesthetic problems with the industrial age. One of these poems states, “Erect no monument. Just let the roses / blossom” as a reward for the title character, who “drowned out” the shouting of Maenads “with beautiful order” and “uplifting playing”. Written to commemorate the death of the young dancer Vera Knoop, for 10 points, name this cycle of 55 fourteen-line poems addressed to a lyre-playing Greek by Rainer Maria Rilke.  
ANSWER: *The* ***Sonnets to Orpheus*** or *Die* ***Sonette an Orpheus***

22. Seven years after this work’s publication, its author wrote a postscript discussing tacit knowledge and intuition and suggesting shared beliefs, values, and “symbolic generalizations” as part of a “matrix.” The Introduction to this work discussed the problems with unwinding in discussing “A Role for History.”  It stated that communities respond to crises by normalizing them, or marking them off to be fixed by a future generation. One chapter discusses “The Route to” a “normal” discipline, in which different schools vie for acceptance as the standard set of assumptions, thus creating a profession. This book looks at the “Invisibility” and “Resolution” of the title phenomena, which are posited as “Changes of World View” in the face of new observations that lead to paradigm shifts. For 10 points, name this treatise about the philosophy of science, a work by Thomas Kuhn.  
ANSWER: *The* ***Structure of Scientific Revolutions***

23. The Sarawak one occurred in the Eocene and early Oligocene in the area of Borneo and Palawan, uplifting and deforming turbidites. The Paleo-Tethys Ocean was closed by the Cimmerian one, which occurred in the Triassic. The Taconic and Acadian ones occurred 450 and 400 million years ago, accreting terranes onto proto-North America which include present-day New England. The Cordilleran one on the west coast comprised the Laramide in the late Cretaceous that uplifted the Black Hills, as well as the earlier Nevadan in which subduction of oceanic crust pushed up a tall volcanic arc and batholith which forms the modern Sierra Nevadas. For 10 points, what is this process in plate tectonics involving collisions of two plates, the mechanism of mountain formation?

ANSWER: **orogeny**

**Brown A Bonuses**:

1. It opens in a garden at Fehrbellin, with the surreptitious entrance of Count Hohenzollern, for 10 points each:

[10] Identify this play that was completed in 1810; it focuses on the title figure’s decision to engage the Swedish army and, although he is victorious, results in him being executed for insubordination.

ANSWER: ***Prince Friedrich of Homburg*** or ***Prinz Friedrich von Homburg***

[10] *Prince Friedrich von Homburg* was written by this author of *Michael Kohlhaas*.

ANSWER: Heinrich von **Kleist**

[10] In this Kleist play a scheming country judge named Adam attempts to blame an innocent young man for destroying Frau Marthe’s title heirloom.

ANSWER: ***The Broken Jug*** or ***The Broken Pitcher*** or ***Der Zerbrochne Krug***

2. His early work included a depiction of a Greek hero standing over the titular king while the latter's horses rage in the background. For 10 points each:  
[10] Name this French painter of *Hercules and Diomedes*, whose also did the decorations for the Staircase of the Ambassadors and the Galerie d'Apollon at the Louvre.  
ANSWER: Charles **Le Brun**  
[10] Le Brun is best known for his work in this palatial complex of Louis XIV, particularly the decorations for its *Galerie des Glaces*, or Hall of Mirrors.  
ANSWER: **Versailles**  
[10] Le Brun memorialized the return of this man, then Chancellor of France, and his retinue to Paris in an equestrian painting competed circa 1657.  
ANSWER: Pierre **Seguier** (or *Chancellor* ***Seguier***)

3. This event resulted in the death of over 450 people and destruction of property in towns like Castaic Junction, Fillmore, Bardsdale, and Piru. For 10 points each:  
[10] Identify this 1928 engineering disaster which sent billions of gallons of water rushing through a certain canyon to the Pacific Ocean.  
ANSWER: **St. Francis** Dam disaster [accept anything that mentions the St. Francis dam]  
[10] The St. Francis dam disaster ended the career of this self-taught American engineer, who had designed the dam. He also oversaw the construction of the Los Angeles Aqueduct.  
ANSWER: William **Mulholland**  
[10] “Galloping Gertie” was the nickname given to this structure in the namesake Washington city after its collapse due to high winds in November 1940.

ANSWER: **Tacoma Narrows Bridge**

4. Among the core scriptural passages cited by this denomination is First Corinthians, 12-14, which refers to the gifts of the spirit. For 10 points each:  
[10] Identify this Christian sect, founded by William Seymour, which takes its name from an event described in the first two chapters of *Acts of the Apostles*.  
ANSWER: **Pentecost**alism [accept any word form which includes Pentecost]  
[10] In addition to exciting activities like snake handling, Pentecostal services might include this activity, which takes its inspiration from Acts 2:1-4, where the apostles were "filled with the Holy Spirit" and uttered certain syllables.  
ANSWER: **glossolalia** or **speaking in tongues**  
[10] This sect of Pentacostalists took its name from a 1908 book by William Durham which claimed that conversion and sanctification were a single act of grace.  
ANSWER: **Finished Work** or **Baptist**ic Pentacostalists

5. Judea Pearl introduced the belief propagation technique for calculating marginal distributions for these in a 1988 conference paper. For 10 points each:

[10] Identify this class of probabilistic models with associated conditional independence information. Michael Jordan edited a book about "learning in" them.ANSWER: **graphical** models[10] When directed graphical models are "loopy", exact inference is difficult. However, message-passing algorithms can find an exact solution in finite time when they have this property.

ANSWER: **acyclic** [accept equivalents]

[10] The acyclic property is not as relevant for these models with undirected graphs. They take their name from a Russian mathematician, whose namesake stochastic processes are those for which conditional probabilities of future states depend only on the present state.

ANSWER: **Markov** random field

6. This work tracks contemporary Italian regional governments, and why those in the north tend to be stronger than those in the south. For 10 points each:  
[10] Name this work which posits that the title concept is better when social capital, in the form of civic engagement in local groups, is higher.  
ANSWER: ***Making Democracy Work****: Civic Traditions in Modern Italy*  
[10] This other work tracks the decline of “bonding” and “bridging” social capital in America, stating that people participate in activities like the titular one more often than they used to, instead of joining groups.  
ANSWER: ***Bowling Alone****: The Collapse and Revival of American Community*  
[10] This sociologist wrote *Making Democracy Work* and *Bowling Alone*.  
ANSWER: Robert David **Putnam**

7. This man considered his own ambiguous attitude towards western culture by re-arranging the Inferno in the prose poem *The System of Dante's Hell.* For 10 points each:

[10] Name this author who burst on the scene with the play *A Good Girl is Hard to Find* and also wrote *Black Art* and *Black Magic*

ANSWER: Amiri **Baraka** or LeRoi **Jones**

[10] In this Amiri Baraka play, the conservative young Clay is seduced by a white woman named Lula, an encounter that leads to murder on board a subway car.

ANSWER: ***Dutchman***

[10] In another play Baraka’s title queries “the relationship of” this American cultural icon “to the means of production?” This work presents a surrealistic vision where a masked man provokes a violent worker’s revolt.

ANSWER: the **Lone Ranger** (the work’s full title is, *What Was the Relationship of the Lone Ranger to the Means of Production?*)

8. Answer the following about Miguel Grau Seminario, the "Knight of the Seas," for 10 points each.

[10] Grau sunk the Esmeralda during the Battle of Iquique, a part of this war, which arose over a dispute about sodium nitrate and was ended by the Treaty of Ancon.

ANSWER: War of the **Pacific**  
[10] Grau captained the turret ship by this name at Iquique, which is now a floating museum in Chile. It shares its name with the son of Araua Occlo who supposedly humiliated the messengers of his half-brother Atahualpa before being captured.   
ANSWER: **Huascar**  
[10] Grau was killed by a salvo from the *Cochrane* during this major naval battle of the War of the Pacific, a smashing victory for Chile in 1879.  
ANSWER: Battle of (Cape) **Angamos**

9. In one paper, this philosopher defended McTaggart's argument intended to prove "the unreality of time," though he is more famous for his arguments concerning the rejection of semantic realism. For 10 points each:  
[10] Identify this British philosopher, whose major works include *Truth and Other Enigmas* and *The Logical Basis of Metaphysics*.  
ANSWER: Michael Anthony Eardely **Dummett**  
[10] Dummett is one of the foremost interpreters of of this German philosopher, who wrote *The Foundations of Arithmetic* and *On Sense and Reference*.  
ANSWER: Friedrich Ludwig Gottlob **Frege**  
[10] In a review of Nelson Goodman's *Structure of Appearance*, Dummett claimed that Goodman adhered to this doctrine due to his failure to understand Frege. One form of this doctrine holds that there are no universals, only particulars, and it is often associated with William of Ockham.  
ANSWER: **nominalism**

10. The addition of 1,4-benzoquinone can prevent the unwanted isomerization of the newly-created double bond. FTPE:

[10] Identify this reaction, a variation of olefin metathesis, that yields a cycloalkene and a volatile alkene.ANSWER: **ring-closing** metathesis

[10] A common catalyst for ring-closing metathesis is this versatile Ruthenium-containing transition metal carbene complex, named for its 2005 Nobel-winning discoverer.ANSWER: **Grubbs'** catalyst[10] Another carbene catalyst is named for this chemist, who is also known for his eponymous projections, which are used to model monosaccharides and other biochemicals. With Speier, he also lends his name to an esterification reaction

ANSWER: H. Emil **Fischer**

11. At this meeting, Louis XVIII sought the consent of the Quadruple Alliance to intervene in Spain for the purpose of overthrowing its constitutionalist regime. For 10 points each:  
[10] Identify this last meeting of the Congress system, at which Britain finally broke with Austria, Russia, and Prussia.  
ANSWER: Congress of **Verona**  
[10] The continental powers' backing of the French position resulted in the restoration to the throne of Spain of this monarch, who proceeded to undo all liberal reforms and persecute the former opposition, while ruling until 1833.  
ANSWER: **Ferdinand VII**  
[10] After the death of Ferdinand VII of Spain, this group emerged to oppose the rule of his infant daughter Isabella II and fought three civil wars in the century over succession under Salic law.   
ANSWER: **Carlist**s

12. The representation of this theory is obtained by extending the Poincaré group and defining operators which transform between particles of integer and half-integer spin. For 10 points each:[10] Identify this theory, which posits that every boson has a partner fermion.ANSWER: **supersymmetry** or **SUSY**[10] SUSY is often applied to obtain an extension of this renormalizable gauge theory which combines the SU(3) interactions of QCD with the SU(2) cross U(1) interaction of electroweak theory.ANSWER: **Standard** **Model**[10] One motivation for the development of SUSY is an attempt to find the solution to this problem, which asks why the weak interaction is so much stronger than gravity.ANSWER: **hierarchy** problem

13. Some of his works are built around the so-called "Mystic Chord," and he assigned colors to various major and minor keys. For 10 points each:

[10] Identify this Russian composer of the "White Mass" and "Black Mass" sonatas whose mystic approach to composition led to works like the "Soul States" sonata which depicts the epic struggle of a Man-god.

ANSWER: Alexander **Scriabin**

[10] Though he wrote almost exclusively for the piano, he was also a capable orchestrator as evidenced by this one-movement symphony, which preceded the*Prometheus* and was based on a similarly-titled written work glorifying Scriabin's creative power.

ANSWER: Symphony No. **4** or  ***Poem of Ecstasy*** or *Le* ***Poéme de l'extase***

[10] Like Scriabin, this other Russian composer wrote mainly for piano. His output includes many *Skazki*, or 'Fairy Tales.'

ANSWER: Nikolay **Medtner**

14. This ruler's *Testament* is the earliest example of Russian literature written by a layman, and his moniker may be a reference to his grandfather, Constantine IX. For 10 points each:  
[10] Identify this ruler, the son of Vsevolod I, who ruled Chernigov before assuming his highest post following the death of Svyatopolk II.  
ANSWER: **Vladimir II** or Vladimir Vsevolodovich **Monomakh**  
[10] Vladimir Monomakh was the ruler of this city-state, founded by the Varangians on the Dnieper river. Its other rulers included Yaroslav the Wise.  
ANSWER: **Kiev** or **Kievan Rus**  
[10] In 1648 Bohdan Khmelnytsky led a revolt of the Zaprozhian faction of these peoples against the Polish Lithuanian Commonwealth leading to the formation of a state centered on Kiev.

ANSWER: **cossack**(s)

15. Questions about its safety arose in the 1970s when it used in the DPT vaccine. FTPE:[10] Identify this organomercury bacteriostatic patented in 1927 by a University of Maryland chemist.

ANSWER: **thiomersal** or **thimerosal**

[10] Because of thiomersal's in vivo degradation to ethylmercury and the less objectionable thiosalicylate, there was speculation that it was involved in this pervasive developmental disorder.ANSWER: **autism**

[10] Although thiomersal's role in autism was debunked to the satisfaction of everyone but Jenny McCarthy, organic mercury compounds were implicated in this severe neurological disease seen after a methylmercury release in Japan.

ANSWER: Chisso-**Minamata** disease

16. The title character survives the siege of Cartagena and is eventually reunited with Don Roderigo, who turns out to be his long lost father, for 10 points each:

[10] Identify this 1748 novel, Smollett’s first, which ends with a former naval surgeon’s mate on the *Thunderer* marrying Narcissa.

ANSWER: *The Adventures of* ***Roderick Random***

[10] In composing *The Adventures of Roderick Random*, Smollett was strongly influenced by this Alain-Rene Lesage work that sees its hero get together with Antonia after many adventures.

ANSWER: *The Adventures of* ***Gil Blas*** *de Santillane*

[10] The shortest of Smollett’s novels, this work finds the title knight driven mad by the loss of his love Aurelia. He gets into misadventures with his squire Crabshaw and his horse Bronzomarte.

ANSWER: *The Life and Adventures of* ***Launcelot Greaves***

17. While in disguise as Thokk, he refused to weep for Baldur, causing him to remain in the underworld. For 10 points each:  
[10] Name this Norse trickster god whose children include Jormungand and Hel.  
ANSWER: **Loki**  
[10] This thinker’s *Gods of the Ancient Northmen* likened Loki to Angra Mainyu and Syrdon. In works like *Jupiter, Mars, Quirinus*, he outlined his theory of the trifunctional model of Indo-European ideology.  
ANSWER: Georges **Dumézil**  
[10] Loki helped to precipitate a circle of violence by callously slaying this son of Hreidmar for his fur.   
ANSWER: **Otter** [do not accept **Ottar**]

18. Name these modern architects, for 10 points each:  
[10] This French winner of the 2008 Pritzker Prize had his *Tour Sans Fins*, or Tower Without Ends, cancelled. His completed projects include Barcelona’s Agbar Tower, Paris’s Arab World Institute, and Minneapolis’s Guthrie Theater.  
ANSWER: Jean **Nouvel**  
[10] His projects in the works include the Chicago Spire and the rail station on the former site of the World Trade Center. He often makes sculpture-like bridges and includes movable pieces in works like the Milwaukee Art Museum.  
ANSWER: Santiago **Calatrava** Valls  
[10] He likes to put curved walls into his works like the Guggenheim Bilbao and the Experience Music Project in Seattle.   
ANSWER: Frank Owen **Gehry** or Ephraim Owen **Goldberg**  
  
19. Name some cartographic projections, for 10 points each.  
[10] This ubiquitous projection, named after its 16th-century Flemish originator, stretches area near the poles to make Greenland seem larger than Brazil.  
ANSWER: **Mercator** projection  
[10] This projection was reformulated by its second namesake as a reaction against the “colonialist” Mercator projection. It privileges area accuracy over silly-looking shape distortion, stretching out Africa and South America and all but squashing the poles.  
ANSWER: **Gall-Peters** projection (accept either)  
[10] This map turns the globe into an icosahedron and unfolds it, leaving nothing properly facing upwards and, usually, the Arctic in the center. It was predictably named by its inventor, Buckminster Fuller.  
ANSWER: **Dymaxion** map

20. This work includes such chapters as “The Deer of the Seven Fires” and “Coyote-Postman,” for 10 points each:

[10] Identify this novel that begins by telling the story of Gaspar Ilom who sets out with a shotgun to eliminate the planters of the title crop.

ANSWER: ***Men of Maize*** or ***Maize Men*** or ***Hombres de Maiz***

[10] In addition to *Men of Maize*, this Guatemalan writer produced such works as *The Eyes of the Interred* and *El Senor Presidente*.

ANSWER: Miguel Angel **Asturias**

[10] This second work in the *Bananas* Trilogy, about the influence of the United Fruit Company, focuses on George Maker Thompson, an empire builder who goes by the titular nickname.

ANSWER: ***The Green Pope*** or ***El Papa Verde***

Answer the following about northwestern South America, for 10 points each:

[10] On the coast of Zulia in northwest Venezuela is this largest lake in South America. The duckweed infestation on its surface appears as a large green swirl from high altitudes.

ANSWER: Lake **Maracaibo**

[10] This second-largest Colombian city and capital of the State of Antioquia was the headquarters of noted drug lord Pablo Escobar, though its crime levels have declined in recent years.

ANSWER: **Medellín**

[10] This major Colombian port city is located at the delta of the Magdalena River just northeast of Cartagena. It is also noted as Gabriel Garcia Marquez's home during his early years as a writer.

ANSWER: **Barranquilla**

Constellations suck. Answer some questions about things astronomers actually care about, for 10 points each.[10] The angle which is made by the meridian of the first point of Aries with the meridian of an observer is known by this name, indicating that it is an observer-relative quantity measured against the celestial background.ANSWER: **local sidereal time** or **LST**[10] This coordinate system sometimes used by astronomers in lieu of right ascension and declination relies on the fact that the Milky Way is a symmetric band of light to define object positions relative to a great circle described by it.ANSWER: **galactic** coordinates[10] Astronomers working in this part of the spectrum generally rely on antenna complexes for observations because of the long wavelengths involved, although parabolic dishes are also used, as at Arecibo. Very Long Baseline Interferometry is a popular technique in this type of astronomy.ANSWER: **radio**