2013 ACF Regionals: Transmitido en Quizbowlese ("This man while traveling through the woods found bathing in a stream the naked goddess Artemis")
Edited by Chris Ray, John Lawrence, Cody Voight, and Rob Carson
Packet by Bellarmine College Preparatory (Sameer Rai, Hiep Nguyen, Ved Paranjpe, Abhishek Aditham, John Cherian, Shreyan Jain, Sebastian Jusuf, Chris Fleitas, Jarek Jankowski, Alejandro Buendia, Emilio Flamenco, Jonchee Kao, Gavin Pereira, Namit Mishra, Paul Gilles BELLARMINE IS EVERYONE AT YOUR SCHOOL ON THE QUIZBOWL TEAM???) and Chicago A (Sam Bailey, Doug Graebner, Matthew Menard, and Daichi Ueda)

1. In one of this author's plays, a caged man asks his wife to fetch him a drink before dashing his head against the bars and killing himself. The protagonist of that play claims to "hold the Fates bound fast in iron chains, And with my hand turn Fortune's wheel about." Another character created by him dies when a knight blows a trumpet and he falls into the trap he had set for Calymath. Walter Raleigh's poem "The Nymph's Reply" was a response to a pastoral poem by him. One play by this author of *Tamburlaine the Great, Parts I and II* has a prologue delivered by Machiavel. The title character of another play asks asks to see "the face that launch'd a thousand ships". For 10 points, name this English Renaissance author of *The Jew of Malta*, "The Passionate Shepherd to His Love" and *The Tragical History of the Life and Death of Doctor Faustus*.
ANSWER: Christopher **Marlowe**

2. This conflict was instigated by a border incident near the village of Manila when an unknown party shelled a border patrol post. Later, it was discovered that the invading country carried out the shelling as an excuse for one of the participants in this war to begin attacking. Major fighting during this war was seen at Taipale, where forces under the command of General Meretskov were repelled by the Tenth Infantry Division. Commander Dashitsev failed to secure the city of Oulu, allowing the defenders to keep a key rail link with a neighboring country, at this war's battle of Suomussalmi. One notable soldier in this war was simply known as the "White Death", and soldiers on one side of the war utilized Molotov Cocktails as an effective way to counter Soviet tanks attempting to break through the Mannerheim Line. For 10 points, name this conflict between Finland and the Soviet Union that ended with the Moscow Peace Treaty.
ANSWER: **Winter War**

3. A phenomenon that follows this law has a finite line width named for Darwin. Departures from ideality of this law can be shown on a rocking curve. This law can be illustrated using the Ewald sphere of reflection construction. This law is a special case of the Laue equations. This law can be used to characterize materials with the powder method. Diffuse scattering does not follow this law. This law can be used to derive the distance between similar atomic planes in a lattice, the so-called d-spacing. This law states that an integer times wavelength is equal to two times interplanar spacing times the sine of the incident beam angle, or n lambda equals two d sine theta. For 10 points, identify this law of X-ray diffraction in crystals.
ANSWER: **Bragg**'s law [prompt on von **Laue** equations before it is read]

4. German explorer Alexander von Humboldt described this country's highland Lake Atitlán as the "most beautiful lake in the world," and in his 1934 book *Beyond the Mexique Bay* Aldous Huxley compared it to Lake Como and said it is "really too much of a good thing." The new capital of this country was destroyed in 1773 by a devastating earthquake, and is now known as the popular town of la Antigua, a tourist favorite. Although the Garifuna culture is centered in this country's port of Livingston, the largest port here is Puerto Barrios. This country's largest department, Peten, lies in its mountainous north. The pyramids of Tikal are found in this country, home to large numbers of ethnic Mayans. For 10 points, identify this Central American bordered to the north by Mexico and to the northeast by Belize.
ANSWER: **Guatemala**

5. This man once spent time in a common prison chained by the foot to his companion Calisto, and in Paris he was defended from calumnious charges by Matthieu Ory. Peter Faber was a disciple of this man, who drew lifelong

inspiration from Ludolph of Saxony's *Vita Christi*. His major work advocates allowing the soul to "free itself from all inordinate affections" and promotes the use of the "general examen of conscience". He was injured in the Battle of Pamplona, after which he experienced a vision of the Virgin Mary and prayed in a cave near Manresa, experiences which formed the basis of a pedagogical work divided into four thematic "weeks". This patron saint of soldiers coined the phrase "Ad maiorem Dei gloriam", or "for the greater glory of God". This teacher of Francis Xavier wrote the *Spiritual Exercises*. For 10 points, identify this first Superior General of the Jesuits, a Spanish saint.
ANSWER: St. **Ignatius** of Loyola [or **Ignacio** de Loyola; or **Iñigo** Loiolakoa]

6. In one ballet by this composer, Danilo is shown the title object by the Mistress of the Copper Mountain. In another ballet by him, music for grasshoppers and dragonflies comes between the variations for the Summer Fairy and Autumn Fairy. In one ballet by him, an "Aubade" if followed by the "Dance of the Girls with Lilies". One ballet by this composer of *The Stone Flower* features the sisters Skinny and Dumpy. Jascha Heifetz arranged for violin and piano a "March" from one of this composer's operas. In that opera by him, the magician Tchelio loses a card game to Fata Morgana, who curses the Prince with the title obsession. In one of his ballets, the "Dance of the Knights" depicts the tension between the Montagues and Capulets. For 10 points, name this Russian composer of the ballets *Cinderella* and *Romeo and Juliet* and the opera *The Love for Three Oranges*.
ANSWER: Sergei **Prokofiev**

7, This man negotiated a constitutional amendment which would have stopped doctors from being overcharged under the provisions of his country's Health Act, and passed a slate of laws meant to expand provincial autonomy over healthcare and social service programs. This man investigated corruption in the James Bay Hydroelectric Plant as part of the Cliche Commission, and was the leader of the Iron Ore Company before entering politics. This negotiator of the Charlottetown Accords supported the proposal of legislation that would have acknowledged Quebec as a "distinct society" within Canada in a set of agreements named for Meech Lake. Although he was eventually elected prime minister, he originally lost to Joe Clark for the leadership of the Progressive Conservative Party. For 10 points, name this Canadian politician who worked with George H.W. Bush to form NAFTA and was succeeded by Kim Campbell.
ANSWER: Brian **Mulroney**

8. According to Maryanoff and Reitz, interconversion of reaction adducts in this reaction results in stereochemical drift. A triply eponymous alternative to this reaction uses the products of the Arbuzov reaction. This chemical reaction is used in the production of Vitamin A1 by BASF. In a similar reaction to this one, a beta-hydroxysilane undergoes an elimination; that reaction is named for Peterson. That previous alternative is named for Emmons, Wadsworth and Horner. Using a phenyl lithium deprotonating agent allows interconversion of erythreo to threo betaine in the Schlosser modification of this reaction. This reaction can preferentially produce Z-alkenes and its intermediate is an oxophosphetane. For 10 points, name this reaction in which aldehydes or ketones are reacted with a phosphonium ylide.
ANSWER: **Wittig** reaction

9. In the Marshall-Lerner condition, the sum of two applications of this quantity to exports and imports must exceed one. The Singer-Prebsich thesis argues that the value of this measurement when applied to manufactured goods suggests that commodity-rich nations will become increasingly impoverished. Values for this concept can be found by taking a linear regression when both variables are expressed in natural logarithms. If the demand function is known, Lerner's Mark-up Rule applies this concept to solve for the optimal price of a good. Veblen and Giffen goods have a positive value for the price version of *this*. Today,

economists use this concept to understand how a tax burden is distributed between the producer and consumer. For 10 points, name this concept from economics that is most often defined as the change in the quantity demanded or supplied of a good given a fluctuation in price or income, respectively.
ANSWER: **elasticity** [accept forms like "price **elasticity** of demand," etc.]

10. In one of his works, the protagonist believes that a portrait's expression is telling him "Get out of it as you can, my dear fellow!" after a woman tacitly proposes marriage to him. An old woman dies after crying "Ah, you publishing scoundrel!" at the literary biographer who is about to ransack her desk in that work by him. From 1907–1909, this author revised many of his works for the so-called New York Edition. The grief-stricken face of stranger in a graveyard causes the protagonist to fling himself on May Bertram's tomb in a work in which John Marcher realizes he has wasted his life waiting. In another work by this author of *The Aspern Papers* and *The Beast in the Jungle,* Mrs. Grose becomes the confidante of a governess who suspects that Flora and Miles are being haunted by the ghost of Peter Quint. For 10 points, name this American author of *The Turn of the Screw.*
ANSWER: Henry **James**

11. This city's society of journeyman cordwainers were prosecuted in the first American court case concerning a labor strike. The first Working Men's Party was founded here in 1828. A mayor of this city agreed to take a polygraph test to prove he had not offered patronage jobs to Peter Camiel, though the test didn't go very well. Herman Schwarzmann designed the grounds of a World's Fair held here in 1876, the Centennial Exposition. In this city, Absalom Jones and Richard Allen founded the Free African Society, many of whose members later joined the African Methodist Church and were key in helping this city through a yellow fever epidemic here in 1793. This city was the first temporary capital, and the site of the Second Continental Congress. For 10 points, name this city home to Independence Hall and site of the Constitutional Convention.
ANSWER: **Philadelphia**, Pennsylvania

12. One protagonist created by this author surprises the chairman of the Public Service Commission by suggesting that *The Heart of the Matter* was ruined by its happy ending, and refuses to negotiate the customs duty on his radiogram. That character created by him worries that his secretary, Marie, is spying on him for his boss, Mr. Green. In one of his novels, a woman refuses to marry the protagonist because she is an *osu* and then aborts the baby she had with him. Clara is the fiancée of one of his characters, who is sponsored by his town's Progressive Union and is arrested for taking bribes. That character created by him is the grandson of a man whose funeral gun salute accidentally kills Ezeudu's son, and who is commanded to kill Ikemefuna. For 10 points, name this creator of the Okonkwo family, the Nigerian author of *No Longer at Ease* and *Things Fall Apart.*
ANSWER: Chinua **Achebe** [or Albert Chinualumogu **Achebe**]

13. A novel proof of a theorem named for this property was the subject of Leon Henkin's doctoral dissertation. In first-order logic, the converse of this property is soundness. That previous theorem named for this property has been used to prove the compactness theorem, and states that every logically valid formula of first-order logic has a finite deduction. A measure is said to have this property if every subset of a null set has measure zero. Normed vector spaces with this property are Banach spaces. A metric space in which every Cauchy sequence converges has this property. Graphs of this type have every vertex adjacent to every other vertex. For 10 points, name this property of the real numbers which intuitively says that there are no missing points.
ANSWER: **complete**ness [or word forms]

14. This god was portrayed by the king in a mock battle taking place throughout the twelve-day New Year's festival of Zagmuk. According to one account, he proved his power by commanding a constellation to disappear and reappear. He owned four horses known as "the fleet", "the trampler", "the merciless", and "the destroyer". This four-

eyed, four-eared son of Damkina was worshipped at such temples as Esagila and Etemenanki. This god tamed the *mushussu* dragon and later gave it to his child by Sarpanitu, a god of wisdom and writing named Nabu. During his most famous accomplishment, he recovered the Tablet of Destinies from the breastplate of Kingu after using a net, eleven winds, and an arrow to kill a primordial ocean goddess who threatened the Annunaki. The rise of this killer of Tiamat was detailed in the *Enuma Elish*. For 10 points, name this chief god of Babylon.
ANSWER: Bel **Marduk** [or **Marutuk**; or **Merodach**; or **Amar-utu**; or **Meridug**; or **Mardochai**os]

15. In one episode in this novel, Mr. Spencer asks the protagonist difficult questions about foreign affairs to illustrate the flaws of democracy. One character in this novel has a cup of cocoa every evening with a colleague and attempts to define the quality of "dignity" sought by the Hayes society. The protagonist recalls an international conference during which he failed to tell Reginald Cardinal about "the facts of life" and took care of M. Dupont while his own father died from a stroke. The new owner of Darlington Hall, Mr. Farraday, inspires the narrator to acquire "bantering" skills. The novel consists of the reminiscences of the narrator on a drive across England to visit the former housekeeper, Miss Kenton. For 10 points, name this novel narrated by the butler Stevens, written by Kazuo Ishiguro.
ANSWER: *The Remains of the Day*

16. In her monograph on this symphony, Elaine Sisman wrote of its finale's relation to Kantian notions of the mathematical sublime. This work's *Andante cantabile* second movement includes a stormy C minor section in between its F major first subject and C major second subject. This development of this symphony's first movement begins in the flat mediant key of E-flat and makes use of the melody to the composer's aria "Un bacio di mano". This symphony shares a key with its composer's earlier "Linz" Symphony. This symphony's nickname was purportedly coined by Johann Peter Salomon. Its *Molto allegro* finale begins with a four note theme, C-D-F-E, and culminates in a five-voice fugato that combines all of the themes it contains. For 10 points, name this final symphony by the composer of *The Magic Flute*.
ANSWER: **Mozart's Symphony No. 41** in C Major, **K. 551**, "**Jupiter**" [accept any underlined part: the composer name with symphony number, the Kochel number, or the nickname]

17. The protagonist of this movie gives a speech in front of a stained glass window when he is killed by a member of the Ecumenical Liberation Army. In another scene, the protagonist is brought into a darkened meeting room to be told he has "meddled with the primal forces of nature" and interfered with the "vast and immane, interwoven, interacting, multivariate, multinational dominion of dollars." Beatrice Straight won Best Supporting Actress for a single five minute scene in which her husband tells her he's in love with the programming executive. After a promise to commit suicide on air cause a spike in ratings, this movie's protagonist is allowed to give a rant in which he instructs listeners to shout "I'm as mad as hell, and I'm not going to take this anymore." For 10 points, name this 1976 movie about Howard Beale's rise and fall as a TV personality on the Union Broadcasting System.
ANSWER: *Network*

18. One type of receptor for this neurotransmitter is defined by being insensitive to bicuculline and baclofen. The enzyme that creates this molecule from an amino acid with an acidic side chain requires pyridoxal phosphate, or Vitamin B6, as a cofactor. An potent agonist of one of its receptors is found in the *Amanita* mushroom genus and is muscimol. This neurotransmitter serves somewhat the same purpose as glycine. The B type of its receptor is coupled to G proteins while the A type of its receptor is a pentameric ligand-gated chloride channel to which benzodiazepines bind. It is released by Purkinje cells and is formed by decarboxylating glutamate. For 10 points, name this inhibitory neurotransmitter of the CNS.
ANSWER: **GABA** [or **gamma-Aminobutyric acid**]

19. One painting by this artist depicts pedestrians and cars in the background, while the primary subject of the painting depicts a dog devouring a screaming female chimera on a T shaped structure. That chimera was later re-

utilized in this artist's *Owls*. Another painting by this artist is based upon the Furies of *The Oresteia*, and depicts a set of withered creatures set against a dark orange background that was later changed to blood red in a 1988 version. One of this artist's paintings was done after the fatal overdose with George Dyer, whose relationship with this artist alienated this man from his father. Paintings by this artist also include *Study for the Nurse in the Battleship Potemkin* as well as *Study after Velazquez's Portrait of Pope Innocent X*, which depicts the namesake pope screaming. For 10 points, name this Irish-born figurative painter, known for focus on the subjects of screams and triptychs, as seen in his *Three Studies for Figures at the Base of a Crucifixion*.
ANSWER: Francis **Bacon**

20. In the beginning of this work, the writer criticizes English philosophers and the view that the title concept gained its importance from its usefulness in society. Later he uses the example of a lamb and a predatory bird to explain how people cannot expect the strong to restrain their strength. In the second part of this work, the author discusses the concepts of promises and "bad conscience," including how debts used to be repaid by making the debtor suffer, the original source of guilt. In the third part of this work, the writer looks to Schopenhauer's and Kant's definitions of beauty in order to contemplate "ascetic ideals." This work also introduces the concept of master and slave morality and *ressentiment*. For 10 points, name this work by Friedrich Nietzsche that aims to trace the origins of the titular human values in history.
ANSWER: *On the **Genealogy of Morals*** [also accept *On the **Genealogy of Morality*** or *Zur **Genealogie der Moral***]

Tiebreaker. This general got his start in service of the Holy Roman Empire at the Battle of Vienna, where he distinguished himself in battle and was made a colonel of a Dragoon Regiment. This general served as President of the Imperial War Council and as commander-in-chief of the Austrian army during the War of the Polish Succession. He commanded Imperial troops the Battle of Turin during the War of the Spanish Succession, where he led a relief force which routed the French army. Later in the same war, this general moved to command Imperial troops in the Low Countries. During the Austro-Turkish Wars, he led Austrian troops during the Siege of Belgrade and the Battle of Petrovaradin. He was also a patron of Baroque architecture and commissioned the construction of the Belvedere Palace. For 10 points, name this French-Austrian Prince who defeated the French troops of Louis XIV at the battles of Blenheim and Malplaquet.
ANSWER: Prince **Eugene of Savoy** [or François-**Eugène de Savoie**, **Eugen von Savoyen**, Principe **Eugenio di Savoia-Carignano**]

One character in this novel discovers his love for his son, when he fears for that son's life during a lightning storm. For 10 points each:
[10] Name this work in which one character fails to propose marriage while picking mushrooms. Two other characters in this novel reconcile by writing out the initials of the words of their dialogue in chalk, and do eventually marry.
ANSWER: *Anna Karenina*
[10] *Anna Karenina* is by this Russian author of *War and Peace*.
ANSWER: Count Leo Nikolayevich **Tolstoy**
[10] In *Anna Karenina*, Kitty initially believes herself to be in love with Vronsky, and therefore turns down this character's first proposal of marriage. However, she eventually marries this character, the half-brother of Koznyshev.
ANSWER: **Konstantin** Dmitrievich **Levin** [accept either; also accept **Kostya**]

Name these people from "The Paranoid Style in American Politics," for 10 points each:
[10] The essay claims the "mantle of McCarthy" has fallen on this man, the founder of the John Birch Society, and observes that this man's pamphlet attack Eisenhower as a Communist has over 100 pages of bibliography and endnotes.

ANSWER: Robert **Welch**

[10] This man's nomination to be the Republican presidential candidate inspired the essay. He lost in the 1964 general election to Lyndon Johnson due to public perception that he was kind of a nut.

ANSWER: Barry **Goldwater**

[10] "The Paranoid Style in American Politics" was written by this Columbia historian, who attacked common views of American historical figures in *The American Political Tradition*.

ANSWER: Richard **Hofstadter**

This equation can be used to calculate the pH of a buffer solution. For 10 points each:

[10] Identify this equation that gives pH as equal to pKa plus the log of the quantity A- over HA.

ANSWER: **Henderson-Hasselbalch** equation

[10] The pKa term in the Henderson-Hasselbach equation refers to the negative log of this constant.

ANSWER: **acid-dissociation** constant

[10] This pH value, at which an amino acid exhibits no net charge, can be estimated with the Henderson-Hasselbach equation.

ANSWER: **isoelectric point**

His *Second Piano Sonata* includes a famous funeral march in B-flat minor. For 10 points each:

[10] Name this Polish composer of the *"Military"* and *"Heroic"* *Polonaises* and the *"Minute"* *Waltz*.

ANSWER: Frederic (François) **Chopin** [or Fryderyk (Franciszek) **Szopen**]

[10] Chopin's most popular waltz besides the *"Minute"* *Waltz* is Op. 64, No. 2 which begins with G-sharp - E and F-double-sharp - D-sharp sixths in the right hand, and is in this key that Chopin also used for his *Fantasie-Impromptu*.

ANSWER: **C-sharp minor** [do NOT prompt on or accept "C-sharp" or "D-flat minor"

[10] Another famous Polish composer is this composer of *Beatus Vir*, who was inspired by the Holocaust to *Symphony of Sorrowful Songs*.

ANSWER: Henryk Mikolaj **Górecki**

This poem appeared in the author's collection *Birds, Beasts, and Flowers*. For 10 points each:

[10] Name poem whose speaker throws a "clumsy log" at the title creature at his water trough and thus "missed my chance with one of the lords of life."

ANSWER: **"Snake"**

[10] "Snake" is by this English author whose other poems include "Bavarian Gentians" and "The Ship of Death".

ANSWER: D(avid) H(erbert) **Lawrence**

[10] "The Ship of Death" appears Lawrence's collection *Last Poems*. This other English poet also wrote a collection called *Last Poems*, as well as his *A Shropshire Lad*, which includes "When I Was One-and-Twenty".

ANSWER: A(lfred) E(dward) **Housman**

This musical artist raps, "Real G's move in silence like lasagna" over a Harry Belafonte sample in his "6 Foot 7 Foot." For 10 points each:

[10] Identify this artist behind the *Tha Carter* series, whose finer creations include "Drop the World," "Right Above It," and "Lollipop."

ANSWER: **Lil' Wayne** [accept **D**wayne **Carter**, Jr., Young **Weezy**, prompt on **Lil' Tunechi**]

[10] Lil' Wayne is the marquee artist for Cash Money Records, a label founded in this Southern city which has produced such other acts as Master P, Juvenile, Birdman, and intensely ironic convicted murderer, C-Murder.

ANSWER: **New Orleans**

[10] In this track off *Tha Carter IV,* Wayne endeavors to explain to his paramour that he is not at all discouraged by pubic hair, reaffirming his desire to "see that Donkey Kong." It closes with the eternally ponderous musing, "I

would talk about my dick. . . but man that shit'd be a long story!"
ANSWER: "No Worries"

Peter Wolynes created a plot of configurational enthalpy vs configurational entropy to create an energy funnel that is highly illustrative of this process. For 10 points each:
[10] Name this process in which a linear chain of amino acids assumes a three-dimensional structure.
ANSWER: **protein folding**
[10] Protein folding going wrong is part of the cause of this neurodegenerative disorder caused by CAG repeats. Those affected typically express symptoms later in life although its Westphal variant occurs in juveniles.
ANSWER: **Huntington**'s disease [or **Huntington**'s chorea]
[10] Huntington's disease is an example of a polyglutamine disease, which includes this disease with something like 17 types, many of which are caused by an affected ataxin protein.
ANSWER: **spinocerebellar ataxia** [or **SCA**]

Conversion to this sect, which considers Alexander the Great a prophet and counts among its holy texts the *Epistles of Wisdom*, was only allowed during a 26-year period known as the "Divine Call". For 10 points each:
[10] Identify this religious group, symbolized by a five-pointed, five-colored star, whose members refer to themselves using terms meaning "the monotheists" and "the unitarians".
ANSWER: the **Druze** [or **Derzi**; or **Durzi**; or **Duruz**]
[10] Continuous persecution led the Druze to engage in this practice of religious dissimulation, in which a person under duress is allowed to deny or otherwise conceal their faith. This doctrine was developed by Twelver Shi'ites during the anti-Alid campaigns of Al-Mansur.
ANSWER: **taqiyya**
[10] Another famous instance of religious denial occurred when this apostle thrice disavowed knowledge of Jesus after the latter's arrest, after which he heard a rooster crow. This former fisherman is also regarded as the first pope.
ANSWER: Saint **Peter** [or Simon **Peter**; prompt on "Simon" or "Simeon" or "Shimon"]

Procopius described a plague that struck this man's capital in *The Secret History*. For 10 points each:
[10] Name this Emperor, who is famous for establishing the *Corpus Juris Civilis* and fleeing Constantinople during the Nika Riots. This man financed the church of Hagia Sophia and was married to history's most accomplished fowl-defiler, Theodora.
ANSWER: **Justinian I** [or **Justinian the Great**]
[10] This Emperor rebuilt the Byzantine Empire from the Empire of Nicaea following the capture of Constantinople during the 4th Crusade. He established the Despotate of Morea on the Peloponnesus, with its capital at Mystras.
ANSWER: **Michael VIII** Palaiologos
[10] This *porphyrogenitus* Emperor became a legendary figure in Greek folklore called the "Marble King," who was saved from death by an angel who hid him in a cave. In non-deluded-Greek-nationalist-fantasyland, this man was killed by troops under Mehmet II.
ANSWER: **Constantine XI** Palaiologos

These things shift the short-run average total cost curve down and to the right. For 10 points each:
[10] Name these advantages that businesses gain to due expansion, primarily because it has more output while its production cost decreases.
ANSWER: **economies of scale** [or **economy of scale**; or **increasing returns to scale**]
[10] One way to obtain an economy of scale is to borrow from banks that charge a lower value for this, a percentage fee of the initial loan that is generally symbolized *I* in economics.
ANSWER: **interest** (rate)
[10] Businesses wishing to take advantage of economies of scale must be wary of this effect, the first identified form of social loafing, in which individual workers become less efficient as the size of the work force increases. It is named for its formulator, a French agricultural engineer.
ANSWER: **Ringelmann** Effect

Answer the following about models of computation, for 10 points each:
[10] This model consists of an infinite tape whose cells are edited by a read/write head. According to a thesis of Church and its namesake, this model is sufficiently powerful to capture the intuitive notion of computability.

ANSWER: **Turing** machine
[10] This much weaker computational model consists of a set of states and by definition only accepts regular languages. One can interconvert between its deterministic and nondeterministic types.
ANSWER: **finite** state **automaton** [or **FSM**; or **finite state machine**; or **DFA**; or **NFA**]
[10] One of the criteria for a finite state automaton is that it have this relation that maps state-input pairs to states. It is often represented with a delta.
ANSWER: **transition function**

Shulgi completed a "great ziggurat" in this city during its so-called "third dynasty." For 10 points each:
[10] Identify this city which saw a resurgence of Sumerian power under kings like Nammu, who put forth a namesake law code. Leonard Woolley unearthed a major artifact of this city.
ANSWER: **Ur**
[10] The third dynasty of Ur came to power after the collapse of the dynasty founded by this man, one of the first Akkadian-speaking rulers of Mesopotamia. He was also cupbearer to the king of Kish.
ANSWER: **Sargon** of Akkad or **Sargon**
[10] Although never a political capital, this city where the Ekur Temple of Enlil was located was a major center of Sumerian scholarship and one of the last places it was still spoken. It was also home to the great Ekur temple of Enlil.
ANSWER: **Nippur** or **Nuffar**

For 10 points each, name some paintings whose authorship has recently been re-evaluated:
[10]This painting's Berlin version has recently been confirmed as the original. It is a tryptich showing the Pieta behind a gothic arch in a chapel, and shares compositional structure with its painter's *Altar of Saint John*.
ANSWER: **Miraflores** Altarpiece
[10] Nobody really has any idea who painted this rendering of the Annunciation, which shows the Virgin facing the viewer while reading and features Joseph at a workbench on the right panel. It is traditionally attributed to Robert Campin, who may or may not have been the Master of Flemalle.
ANSWER: **Merode** Altarpiece
[10] A less-disputed piece by Campin is the *Werl Altarpiece*, which features its commissioner standing next to this figure, who kneels in prayer. This figure makes a guest appearance in severed head form in numerous paintings of Herod or Salome.
ANSWER: **John the Baptist**

This poet wrote of a mother who dies fashioning clothes from the title instrument in "The Ballad of the Harp-Weaver". For 10 points each:
[10] Name this American poet, whose works include "Euclid alone has looked on Beauty bare."
ANSWER: Edna St. Vincent **Millay**
[10] Millay's "First Fig" describes one of these objects burning "at both ends" but giving "a lovely light".
ANSWER: **candle**
[10] In this poem by Millay, the speaker is crushed to death by the infinity of the world after touching the sky, but God answers her prayer and washes her grave away with rain.
ANSWER: "**Renascence**"

This demigod caught and beat the sun with the jawbone of his ancestor until it agreed to make each day longer. For 10 points each:
[10] Name this Polynesian culture hero who used that jawbone to pull up the land that became, in various traditions, the North Island of New Zealand or the islands of Hawaii.
ANSWER: **Māui**-tikitiki
[10] This other Hawaiian deity, a goddess of volcanoes, fire, and lightning, narrowly escaped being raped by a hog-man when her sister Kapo distracted him with her detachable vagina.
ANSWER: **Pele**
[10] Pele's other siblings include the shark god Kamohoali'i, the sea goddess Namaka, and this patroness of the hula dance. Pele carried this goddess in the form of an egg from Tahiti to Hawaii, where she was born.

ANSWER: **Hi'iaka**

Answer the following related to electromagnetism, for 10 points each:
[10] This constant denoted epsilon-sub-naught is found in Coulomb's and Gauss's law.
ANSWER: **permittivity of free space**
[10] The no-load losses in a transformer mostly consist of hysteresis and this phenomenon, which is induced by a time-varying magnetic field. This phenomenon results in the skin and proximity effects.
ANSWER: **eddy current**s [prompt on induced **electric field** or electric **current**]
[10] The time-averaged form of this vector is one-half times the real part electric field crossed with the conjugate of the magnetic field. It gives the power density and direction of power flow of an electromagnetic wave.
ANSWER: **Poynting** vector

This man wrote about contingent proposition in his *Treatise on Predestination*, and identified three types of uncertain beliefs called suppositions - the personal, simple, and material. For 10 points each:
[10] Identify this Englis thinker better known for a theory that "Entities should not be multiplied unnecessarily," his namesake "razor."
ANSWER: William of **Ockham**
[10] This other thinker addressed a form of predestination, claiming that the existence of humans cannot merit grace and that the presence of God and the way events play out are each a *causa sine qua non* to the other.
ANSWER: Peter **Lombard**
[10] This philosopher summarized Aristotelian arguments in "Book of Causes and Precession of the Universe." This author of a three-volume commentary on Lombard's *Sentences* was a teacher of Thomas Aquinas.
ANSWER: **Albertus Magnus** [accept **Albert the Great** or **Albert of Cologne**]

During this festival, the larger counterpart of a related "rural" event, the orphans of citizens who died in battle were
paraded around alongside the tribute brought by Athens's allies. For 10 points each:
[10] Name this annual festival established by Peisistratus, whose highlight was a theater contest in which three tragic poets would present three tragedies and one satyr play.
ANSWER: Great *Dionysia* [or City *Dionysia*]
[10] This playwright of *Oedipus Rex* won the 442 BC Dionysia with *Antigone*, the second play chronologically in his Theban trilogy.
ANSWER: *Sophocles*
[10] This oldest complete surviving play in the history of literature won its author, Aeschylus, first prize at the 472 BC Dionysia. In it, Queen Mother Atossa anxiously awaits news of her son Xerxes's expedition against the Greeks.
ANSWER: The *Persians* [or *Persai*]

It stands in the Senate Square in St. Petersburg. For 10 points each:[10] Name this equestrian statue of Peter the Great by Etienne Falconet.
ANSWER: The *Bronze Horseman* [or The *Copper Horseman*; or Медный всадник]
[10] Falconet first gained attention with a sculpture of this Greek wrestler being attacked by a lion. This mythological figure is also the subject of an earlier sculpture by Pierre Puget.
ANSWER: *Milo* of Croton
[10] This Italian Renaissance made an equestrian statue of Erasmo Narni called *Gattamelata*. He also did a bronze statue of David currently held in the Bargello Palace.
ANSWER: **Donatello** [or Donato di Niccolo di Betto **Bardi**]

Identify these British Prime Ministers, for 10 points each:
[10] This Prime Minister and eternal rival of Benjamin Disraeli waged the particularly horrible Midlothian

Campaign, in which he warned that angry, morlock-like Turks were preparing to pour into England from Bulgaria and eat everyone's children.

ANSWER: William **Gladstone**

[10] This Prime Minister got his start in politics as Churchill's protege and began the decolonization of Africa. He also assisted in the creation of the Nuclear Test Ban, and endured the Profumo Affair.

ANSWER: Maurice Harold **Macmillan**, First Earl of Stockton

[10] This three-time Prime Minister commenced the construction of the Thames Embankment and presided of the beginning of the Partition of Africa. He served as Secretary of State to India under Disraeli and was the last Prime Minister to command his administration fully from the House of Lords.

ANSWER: **Lord** Robert Arthur Talbot Gascoyne-Cecil, Third Marquess of **Salisbury**