

ACF Nationals 2016
Editors' Packet 4
Tossups

1. This deity was worshipped at a still extant temple at Cusae, where a group of beautiful women held to be aspects of this deity had names such as “You from the Land of Silence,” “Your Name Flourishes Through Skill” and “Lady of the Universe.” Those women are part of a group called the “Seven” of this goddess and often appear at childbirth. Many *stelae* call this goddess the “Lady of Lapis Lazuli” and the “Lady of Turquoise.” Due to its physical similarity to her, the *sistrum* is often used in the worship of this deity, who in one story is able to make Re-Horakhty laugh by lewdly dancing and exposing her genitals. A well-preserved temple to this goddess is located in Dendera. Depending on the source, either this goddess or a lion-headed goddess had to be calmed with beer to stop her from destroying humanity. Joy and motherhood were among the domains of, for 10 points, what cow-headed Egyptian fertility goddess?

ANSWER: **Hathor**

2. This quantity names a phenomenon which can be avoided by noncritical phase matching, its namesake “walk-off.” For an infinitely long cylindrical current-carrying wire, this quantity at the surface of the wire is proportional to the current squared divided by the product of the conductivity and the cube of the radius of the wire. In relativity, the Maxwell stress tensor is augmented by adding a fourth row and fourth column, whose elements consist of the Cartesian components of this quantity. The time-average of this quantity divided by the speed of light gives radiation pressure. The negative divergence of this quantity equals the time derivative of the sum of the mechanical and field energy densities. The cross product of the electric and magnetic fields gives, for 10 points, what quantity which represents the energy flux density of an electromagnetic field?

ANSWER: **Poynting** vector

3. Critics like Meredith Neuman and Harry Stout have analyzed these works based on handwritten notes written in response to them. In a fictional example of these works, a man is compared to the description on a handbill promising “five hundred gold coins for the apprehension of a parricide.” Jonathan Mayhew drew on John Locke to write one of these works often called the “morning gun” of the American Revolution. Many of these works were either “execution” or “election” ones, such as “Errand Into the Wilderness” by Samuel Danforth. One of these texts, which offers a “two-stranded lesson” regarding a man seeking a ship to Tarshish, appears in *Moby-Dick*, while another of them begins by discussing the quote “their foot shall slide in due time” and compares people to a spider being held over a fire. For 10 points, name these works that were popular among the Puritans, which included “A Model of Christian Charity” and Jonathan Edwards’ “Sinners in the Hands of an Angry God.”

ANSWER: **sermons** [prompt on “speeches”]

4. Lewis D. Campbell staged a filibuster of this legislation called the “ham sandwich speech” because he constantly ate food as he spoke, until he was nearly attacked by Henry Edmundson. A fourteenth section was added to this legislation to meet the demands of a group of politicians named for the house where they all resided during the negotiations, the “F-Street Mess.” In response to this legislation, Eli Thayer convinced a group of businessmen to form the Emigrant Aid Company. Another response to this bill was a propaganda piece in the Cincinnati Gazette called the “Appeal of the Independent Democrats,” signed by men like Joshua Giddings. This bill’s passage led to the distribution of “Beecher’s Bibles” and was denounced in the “Peoria Speech.” This act’s sponsor later endorsed its principles in the Freeport Doctrine. For 10 points, name this 1854 act sponsored by Stephen Douglas that endorsed popular sovereignty in the two namesake territories.

ANSWER: **Kansas-Nebraska** Act [or just the **Nebraska** Bill]

5. The first complete version of this opera was produced by Patrice Chereau and featured Teresa Stratas as the female lead, for which she won a Grammy. In the score for this opera, the composer wrote the word “beiläufig” (BYE-loi-fig), or "casually", at the moment a character asks “Isn’t that the sofa where your father bled to death?” The female lead of this opera rejects an offer to marry a prince who wishes to travel in Africa, after Alwa proposes to write an opera about her. At its opening, an animal tamer shows off various animals before bringing in a character who is dressed as Pierrot. Its female lead contracts cholera in an orchestral interlude in this work, which depicts her trial and subsequent jail sentence for murdering her husband. The plays *Earth Spirit* and *Pandora's Box* are the source material for this opera, which ends with the title character getting killed by Jack the Ripper. For 10 points, name this unfinished opera by Alban Berg.

ANSWER: **Lulu**

6. Research by Daniel Kirk-Davidoff suggests that these structures, and not deep convective clouds, increased the temperature of the Earth during the Eocene Epoch by creating a positive feedback loop. These objects are typically formed during an austral winter when wind passes over mountain ranges and subsequently induces the formation of gravity waves. That in turn leads to the creation of these structure’s ice crystals which have temperatures lower than 85 degrees Celsius. Their one-A, one-B, and one-C types are composed of metastable water and nitric or sulphuric acid. They form at latitudes above 50 degrees and are usually only visible during twilight. These iridescent structures convert bromine and chlorine into forms that are highly reactive to ozone, suggesting that they play a role in global warming. For 10 points, name these polar clouds in the stratosphere that are named for their resemblance to mother of pearl.

ANSWER: **nacreous** clouds [accept **mother of pearl** cloud before "mother" and accept **polar stratospheric** cloud before polar.]

7. A symphony nicknamed for this activity depicts it using a quotation from a divertissement by Jean-Baptiste Morin in its final movement, which was originally composed as the overture to *La Fedelta Premiata*. The third piece in Suzuki's Book 2 for the violin is adapted from a chorus sung by people with this occupation, "Was gleicht wohl auf Erden." Haydn's symphony 73 is nicknamed for its fourth movement depicting this activity, which is also portrayed in Liszt's eighth *Transcendental Etude* and Paganini's ninth caprice. The third movement of *Autumn* from Vivaldi's *Four Seasons* depicts this activity, which sometimes names the third movement scherzo from Bruckner's 4th symphony. *Peter and the Wolf* uses the timpani to represent people who are performing this activity. For 10 points, name this activity which in classical music is commonly invoked by horn calls and drumbeats representing gunshots.

ANSWER: hunting [or La Chasse; or "Wilde Jagd"; accept word forms like hunters or jaegers]

8. In a commentary on this text, Michael Gelven used Abraham Lincoln's pipe as an example of an "occurrence" artifact left behind by one of the four senses of history discussed in this book. This book discusses the example of a motor car equipped with an adjustable red arrow that will indicate which path it will take in a section about the "definiteness" signified by signs. It contains a discussion of the *logos* as a means of reason, not judgment, and suggests that *logos* is used to uncover the "concealed nature" of the world. This book opens by quoting Plato's *The Sophist* to describe the "battle of giants" about entities that are "conscious of their own existence." It includes a discussion between ontic and ontological modes of existence. For 10 points, what incomplete work of 20th century philosophy discusses *dasein* as the mode of existence utilized by humanity and was written by Martin Heidegger?

ANSWER: Being and Time [or Sein und Zeit]

9. This emperor offered to resign after a revolt by Jotapian and the naming of the rival emperor Pacatianus in Moesia, but the city prefect delivered a speech in front of the Senate convincing him to stay in power. He named his brother Gaius Julius Priscus as ruler of the eastern provinces, after negotiating a peace with Shapur I in which he agreed to pay a massive indemnity to the Persians. He commissioned the historian Asinius Quadratus to write his *History of a Thousand Years*, as part of the lavish games he arranged for the millennial anniversary of Rome. According to Eusebius of Caesarea, he asked to participate in a prayer service on Easter, making him perhaps the first Christian emperor, but he was made to do penance, possibly for killing his predecessor Gordian III. After ruling for five years, this emperor was overthrown by Decius in 249 AD. For 10 points, name this emperor whose epithet indicates the Roman province that he hailed from.

ANSWER: Philip the Arab [or Marcus Julius Philippus Augustus; prompt on Philip]

10. This author wrote a poem in which the “armpit-fragrance” of an “oblong-headed lioness” turns “chloroform enough” for the speaker’s “patience.” That poem appears in a cycle which renders the milieu of “the collective rape of innocence and profanation of mysteries,” and concludes with the Sunbird once again being able to sing. One of this writer’s last poems was written in the form of a “praise song” to honor the centenary of W. B. Yeats’ birth. The barefooted speaker of another poem by this writer leans “on an oilbean” while being lost in a certain figure’s “legend” as he “stands naked.” This author of the collection *Limits* and the poem “Lament of the Masks” addressed the watery-goddess Mother Idoto in his sequence *Heavensgate*. For 10 points, name this poet of the collection *Labyrinths With a Path of Thunder*, who was killed fighting for the independence of Biafra.

ANSWER: Christopher Okigbo [or Christopher Ifekandu Okigbo]

11. This man wrote about sailing around the Mediterranean in his yacht, the “Fleur de Lys,” in *The First Mate’s Log*. He argued that the Middle Ages possessed a greater “unity of mind” because the disciplines of religion, art, and philosophy had not yet been divided, whereas people in the modern age cannot create the “map of knowledge” across those disciplines to achieve happiness, in his book *Speculum Mentis*. This man’s pupil Ian Richmond revised his encyclopedic work *The Archaeology of Roman Britain*, one of his four major classics on British archaeology. He’s best known for a 1946 book collated after his death by T. M. Knox, in which he advocates studying the past by reliving the events in one’s own mind, and claims that history is just the development of self-knowledge. For 10 points, name this British archaeologist and philosopher who wrote *The Idea of History*.

ANSWER: R.G. Collingwood [or Robin George Collingwood]

12. A protein found in this substance consists of an octo-decamer consisting of six trimers arranged in a “bouquet” structure. Deficiency of this substance can be treated using the INSURE method. ATP-binding cassette transporter A3 is critical for the production of this substance. The development of this substance can be quantified by a “fluorescent polarization test” which computes the ratio of this substance to albumin, or by using thin-layer chromatography to measure the LS ratio. This substance contains two collectin proteins involved in innate immunity and is spread out by two hydrophobic proteins called SP-B and SP-C. A deficiency of this substance is the cause of IRDS in premature babies. 90 percent of this substance consists of DPPC, phosphatidylcholine, and other phospholipids. For 10 points, name this substance that coats alveoli to reduce their surface tension.

ANSWER: pulmonary surfactant [or lung surfactant; or alveolar surfactant]

13. In one episode of this novel, an officer smashes a lamp of oil on the protagonist's head after being called a "booby." The protagonist of this book encounters a shepherd who tells of how the beautiful 16-year old Leandra was ravished by a soldier. Earlier, the protagonist of this novel sleepwalks and punctures wineskins, dreaming that he is assisting a woman from Guinea named Micomicona. In this novel, a sailor escapes from captivity with Zoraida, a beautiful maiden who later converts to Christianity. This novel includes a lengthy digression set in Florence about Anselmo asking his friend Lotario to test his wife's fidelity. This novel, which details the adventures of the protagonist with Cardenio and Dorotea, was published in two parts ten years apart, and attributed to Cide Hamete Benengeli. The Knight of the White Moon subdues the title character of, for 10 points, what novel by Miguel de Cervantes?

ANSWER: **Don Quixote** [or *The Ingenious Gentleman **Don Quixote** of La Mancha* or *El ingenioso hidalgo **don Quijote** de la Mancha*]

14. In the prefatory chapter of this work, its author states he hopes to build a "dream-palace" for the national thoughts of 20 million people since "All men dream: but not equally." After its author lost the original manuscript of this book while changing trains at Reading Station, he rewrote it mostly from memory. This text's introductory poem, which was edited by Robert Graves, is dedicated to an unknown person whose initials are "S. A." This book was written by an author whose only other work, *The Mint*, describes the Royal Airforce as a coin factory. Its sixth book, "The Raid Upon the Bridges," describes a failed attempt at cutting the Yarmuk Valley Railway. This book's author describes serving under General Allenby, and coordinating the irregular armies of Emir Feisal and Abdullah. The capture of Damascus during the Arab Revolt is depicted in, for 10 points, what autobiographical book by T. E. Lawrence?

ANSWER: **Seven Pillars of Wisdom**

15. According to a custom of these people called the Ntetea rite, a child receives a personal name on the eighth day after his birth, and that name is celebrated in a ceremony forty days after his birth. The religion and art of these people was written about by Robert Rattray, who claims they originated from north of the Kong Mountains, and Joseph Dupuis wrote a journal of his residence among them. Heavy fines were imposed on these people in the Sagrenti War, and when one of their rulers was not able to pay, he was arrested and exiled to the Seychelles. Most of their leaders descended from the Beretuo Dynasty, including that ruler, Prempeh I. The Fante Confederacy was formed to oppose this empire, which rose by defeating the Denkyira at Feyiase, and then set up a capital at Kumasi. For 10 points, name this empire founded by Osei Tutu, which fought five wars with the British, and worshipped the golden stool.

ANSWER: Kingdom of **Ashanti** [or **Asante**; or **Asanti**]

16. The astrologer John Varley commissioned this artist to render grotesque versions of such people as the occultist Cornelius Agrippa and the murderer Catherine Hayes in the series *Visionary Heads*. That series inspired this artist to make a miniature painting in which a muscular title animal uses his tongue to lick a bowl of blood. Dante faints in an engraving by this artist, in which Paolo and Francesca are part of a heavenly light and not a whirlwind of sinners. This artist of *The Ghost of a Flea* and *The Lover's Whirlwind* also painted a work depicting a blue-skinned monster with seven heads raising a mace and a sword. That painting is "The Beast from the Sea," which, like "Woman Clothed with the Sun," is part of a series by this man named for *The Great Red Dragon*. A depiction of Urizen as the Ancient of Days was made by, for 10 points, what artist, who also illustrated his books *Songs of Innocence and Experience*?

ANSWER: William **Blake**

17. A precursor to this molecule has its thiolactam group S-methylated by tri-methyl-oxonium fluoroborate. Two of this molecule's rings can be connected to form thiodextrolin via either an alkylative or oxidative precoupling followed by the addition of a tertiary phosphine. Two propionic acid side chains are attached to 6 contiguous stereocenters in a precursor to this molecule called beta-cornnorsterone. This molecule's "western half" consists of its B and C rings, which are connected by a sulfide contraction. It's not penicillin, but Dorothy Hodgkin won a Nobel Prize for determining the crystal structure of this molecule, which is based on a corrin macrocycle. The total synthesis of this compound was developed by Albert Eschenmoser and Robert Woodward. This compound's malabsorption in the small intestine causes pernicious anemia. For 10 points, name this cobalt-containing vitamin.

ANSWER: vitamin **B12** [or cyanoc**obalamin**]

18. One side in this conflict used a strategy by which its musketeers were trained to close to fifty paces, allow the rear ranks to fire, then charge rapidly to 20 meters for a musket volley followed closely by bayonet warfare. That strategy, known as "Ga-Pa Tactics," was used to defeat Jacob von Flemming's cavalry during this conflict at the Battle of Gadebusch. However, that army in this conflict was later decimated when it was forced to retreat through the Tydal mountains in an action called the Carolean Death March. The opposing side was victorious at the naval Battle of Gangut, after turning back a march led by general Adam Lewenhaupt in a clash at the village of Lesnaya. Much earlier, the Treaty of Altranstadt cemented the defeat of Augustus II, after the Battle of Narva. For 10 points, name this war ended by the Treaty of Nystad in 1721, in which Charles XII led a Swedish army against Russia.

ANSWER: **Great Northern** War

19. In a vision, this author conceived of the Devil as an ulcer-covered, pus-spewing giant worm that terrorized vain men who shopped at marketplaces. This writer's *Causae et Curae* is an early study of the human body, while the medicinal properties of plants, animals, and various stones are the subject of this thinker's book *Physica*. This author devised a private alphabet called *litterae ignotae* to create a "mystical language" known as *lingua ignota*, which was used to document 26 visions in a text named for a Latin phrase that means "Know the ways of the Lord." This thinker originally conceived of the universe as egg-shaped, but changed to conceiving of it as a sphere by the time of *De Operatione Dei*. Since he cannot produce "divine harmony," Satan only yells and grunts in a musical morality play by this writer titled *Ordo Virtutum*. *Scivias* was written by, for 10 points, what "Sibyl of the Rhine," an early female mystic and composer from Bingen?

ANSWER: **Hildegard** von Bingen [or Saint **Hildegard**; prompt on "(von) Bingen;" prompt on "Sibyl of the Rhine"]

20. A character in this poem notes "The Laurentian Landshield was ruthlessly gerrymandered, / And there was a terrible tussle over the Tethys Ocean". The lines "creation lay in pain and earnest, once more reprieved from self-destruction, its adoption, as usual postponed" conclude this poem, which contains a "dirge" section whose speakers dream of "some Gilgamesh or Napoleon, some Solon or Sherlock Holmes" who can rescue them from "their egregious destructive blunders." This poem's first part ends by describing Captain Kidd, who in his "Quiz Programme HOW ALERT ARE YOU" announces themes of "HOMO ABYSSUS OCCIDENTALIS" or "SEVEN SELFISH SUPPERLESS" periods. Dedicated to John Betjeman, this poem opens at a bar in New York City and is subtitled "A Baroque Epilogue." Quant, Malin, Rosetta and Emble are the speakers of, for 10 points, what long poem by W. H. Auden named for the uncertain, industrialized world?

ANSWER: "The **Age of Anxiety**"

Tiebreaker: Fulgentius begins his account of this figure by stating he "is a form of lust" before concluding with the moral "Men wage a greater war with vices than with human foes." Philostratus of Lemnos's book *Imagines* describes a painting in which this figure is said to have skin "charred" by the sun and that he had a lower leg that was not straight, but "ungainly," to illustrate his strength. Strabo recounted an apocryphal story in which this figure's tomb was shaped like a giant human, and that whenever a clod of dirt was removed from it, rain would pour until the clod was filled. Plutarch places this figure's tomb in Tingis, and states that Sertorius was frightened when he unearthed it. In his best-known appearance, this figure tries to build a pyramid of skulls to honor his father Poseidon and loses his strength when he is separated from Mother Earth. For 10 points, name this giant of Libya who challenged passersby to wrestling matches before he was defeated by Heracles.

ANSWER: **Antaeus**

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Bonuses

1. In one section, this book examines the meaning of the Greek word “synodos,” claiming that it’s synonymous with the Destroyer, like the Fenris-Wolf of Norse myth. For 10 points:

[10] Name this 1950 book which theorized that the planet Venus was ejected from Jupiter as a comet around 1500 BC, which the ancient Greeks then memorialized in their mythology as Athena springing out of the head of Zeus.

ANSWER: **Worlds in Collision** [by Immanuel Velikovsky]

[10] Velikovsky also uses the Venus transit to explain the eruption of this volcano on the island of Santorini, which blew during the “Minoan eruption” often linked to the exodus of the Israelites from Egypt.

ANSWER: **Thera**

[10] Tracking the time between the risings and settings of Venus is also cited as inspiring the creation of these artifacts which contain ancient Chinese character writing during the late Shang Dynasty, and were apparently used in divination rituals.

ANSWER: the **oracle bones** [prompt on just bones]

2. Matthew Prior translated a poem supposedly by this author with the lines “My little, pretty, fluttering thing, / Must we no longer live together?” For 10 points each:

[10] Name this author of “Animula, Vagula, blandula.” His “Memoirs” title a novel by Marguerite Yourcenar, which describes how he forms a “Tellus Stabilita” as leader of the Roman Empire.

ANSWER: **Hadrian** or [or Publius Aelius **Hadrianus** Augustus]

[10] Phlegon of Tralles, a Greek freedman who wrote under Hadrian, wrote the *Book of Marvels*, one of the best-known pieces of writing in this genre of Ancient Greek literature, which purports to tell of fantastical events.

ANSWER: **paradoxography** [or **paradoxographoi**]

[10] Some of Hadrian’s writing survives in the *Palatine Anthology*, a collection of writings that includes these witty statements. The poet Martial produced many of them.

ANSWER: **epigrams**

3. This compound’s namesake “clearance” and the ratio of levels of blood urea nitrogen to its levels in serum are common metrics used to gauge renal function. For 10 points each:

[10] Name this compound which is synthesized in muscle as a *breakdown* product of a similarly-named compound that bodybuilders often use as a supplement.

ANSWER: **creatinine** [do NOT accept the similarly-named compound “creatine”]

[10] The creatinine clearance is used to measure the filtration rate of this tiny cluster of capillaries, which is surrounded by Bowman’s capsule in the nephron of the kidney.

ANSWER: **glomerulus** [or **glomeruli**]

[10] Another biomarker of kidney disease is the “neutrophil gelatinase-associated” one of these proteins. These extracellular proteins are used to transport small hydrophobic molecules such as fatty acids and retinol.

ANSWER: **lipocalins**

4. Answer the following about the psychology of very young children, for 10 points each.

[10] According to Jean Piaget, the first two years of an infant's life are spent in this stage, where the child learns the concept of causality and, at the very end, discovers object permanence.

ANSWER: sensorimotor stage

[10] Leo Kanner appears to have coined the term for this hypothesis, which purports to explain the development of autism as being caused by an early lack of parental bonding time. This thesis was later popularized by the book *The Empty Fortress*.

ANSWER: the refrigerator mother hypothesis

[10] Robert Fantz, a psychologist at Western Reserve University, placed human and chimpanzee babies in this device. He showed that even four month old babies are capable of perceiving form, because they stare longer at contoured figures like human faces than plain figures like random ovals.

ANSWER: the looking chamber

5. A pilot who refused to participate in this action reportedly declared: "you can kiss my foot. I did not lose four friends and fly 10,000 miles in order to bomb Jews." For 10 points each:

[10] Name this affair in which the new Israeli government under David Ben-Gurion threatened to blow up a namesake cargo ship in 1948 because it was carrying arms to independent Irgun fighters.

ANSWER: Altalena Affair

[10] The Irgun was headed by this man, who later served as Prime Minister of Israel and signed the Camp David Accords with Anwar Sadat.

ANSWER: Menachem Begin

[10] This Minister of Defense under Ben-Gurion may have authorized the secret bombing of targets in Egypt in a campaign called Operation Susannah, after which he resigned.

ANSWER: Pinhas Lavon

6. For 10 points each, answer the following about VHDL, a language that is used to model the behavior, timing and structure of a digital circuit.

[10] VHDL can be used to virtually specify components in a logic block, such as these components that take two to the n input lines and n selector lines, then output one of the input lines.

ANSWER: multiplexers [or muxes; prompt on data selectors]

[10] VHDL, as well as Verilog, can be used to configure these not application-specific integrated circuits, whose name suggests that the logic blocks within them can be repeatedly reconfigured.

ANSWER: field programmable gate arrays [or FPGAs]

[10] This logical operator was added to VHDL from its original Ada specification. Like the NAND operator, this logical operator's gate can be used to implement the gates of all other logical operators. It outputs one only when both of its inputs are zero.

ANSWER: NOR [or Not OR]

7. Kent Nagano of the Hallé Orchestra commissioned this piece, which was dedicated to a woman alongside whom the composer had worked as an assistant to Benjamin Britten. For 10 points each:

[10] Name this 2000 composition that opens with a soft trombone chord played over even softer high violin notes that should be sustained from the piece this one was designed to be played after.

ANSWER: "**Pluto, the Renewer**"

[10] Colin Matthews's "Pluto, the Renewer" was written to be played as the eighth movement of this English composer's orchestral suite *The Planets*.

ANSWER: Gustav **Holst** [or Gustav Theodore **Holst**; or Gustavus Theodore von **Holst**]

[10] In 2006, a suite to accompany *The Planets* called *Asteroids* was commissioned by this European orchestra, whose current principal conductor is Simon Rattle. Twelve of its cellists often perform as a separate ensemble.

ANSWER: the **Berlin Philharmonic** [or **Berliner Philharmoniker**]

8. This poem ends with an image of "The change onward from ours to that of beings who walk other spheres." For 10 points each:

[10] Name this poem by Walt Whitman which contemplates the various creatures, such as "sea-lettuce, vast lichens, strange flowers and seeds, the thick tangle, openings, and pink turf" of the title world.

ANSWER: "The **World Below the Brine**"

[10] "The World Below the Brine" appears with "Out of the Cradle Endlessly Rocking" in this poetry collection of Walt Whitman.

ANSWER: **Leaves of Grass**

[10] This section of *Leaves of Grass* includes "The World Below the Brine" and "Out of the Cradle Endlessly Rocking." It also includes a poem in which the narrator recognizes "vast similitude interlocks all," "On the Beach at Night Alone."

ANSWER: "**Sea-Drift**"

9. A platform made of crystal in the middle of a water fountain can be found on the left side of this artist's depiction of Charon crossing from Elysium to Tartarus, *Crossing the River Styx*. For 10 points each:

[10] Name this Walloon artist from the 16th century, known for his magnificent works set in rocky locations, such as a depiction of the *Flight into Egypt* that also portrays the "Miracle of the Corn."

ANSWER: Joachim **Patinir** [or Joachim **Pateneir**]

[10] Joachim Patinir was the first to develop the "world" form of this genre and was praised by Albrecht Durer as being one of the best artists in working in it. These paintings generally depict trees, rocks, and other natural elements.

ANSWER: **landscapes**

[10] Patinir also painted a world landscape showing this person in a rocky landscape. He is shown sleeping in a Parmigianino painting titled for his "Vision", and a small depiction of him appears in the bottom-right corner of *Madonna of the Long Neck*.

ANSWER: Saint **Jerome** [or **Hieronymus**]

10. Secretary of Labor William Wilson delegated John Densmore to investigate whether either of these two men were falsely convicted. For 10 points each:

[10] Name either of the two labor leaders who were framed for perpetrating the Preparedness Day Bombing in San Francisco in 1916.

ANSWER: Thomas Mooney or Warren Billings [or the Mooney-Billings Case]

[10] Prior to the bombing, this politician accused the Preparedness March of being a front for the munitions industry. Twenty years earlier, he delivered the “Cross of Gold” speech to support free silver.

ANSWER: William Jennings Bryan

[10] This Mayor of New York City from 1926 to 1932 publicized his visit to Tom Mooney while Mooney was in jail. His marriage to the Ziegfield showgirl Betty Compton gained him the nickname “Gentleman.”

ANSWER: Jimmy Walker [or James John Walker; or James J. Walker]

11. This concept was introduced in a commentary on Aristotle’s *Physics* by John Philoponus, which resembles the idea of physical inertia. For 10 points each:

[10] Name this medieval theory elaborated by Jean Buridan, which was used to explain the path of projectiles.

ANSWER: theory of impetus

[10] The theory of impetus appeared in discussions of the philosophy of this phenomenon, which Zeno of Elea supposedly “proved” was merely an illusion by proposing his namesake paradoxes.

ANSWER: motion [or movement]

[10] This 14th century English philosopher, dubbed *Doctor Profundus*, wrote *On the Ratios of Velocities in Motions*, in which he developed a theory of motion suggesting that a geometric increase in force over resistance corresponded to an arithmetic increase in velocity.

ANSWER: Thomas Bradwardine

12. This formalism gives rise to the so-called “E cross B drift” and “polarization drift.” For 10 points each:

[10] Name this formalism which expresses the motion of a charged particle as the sum of a circular motion caused by the Lorentz force and a series of drift velocities due to the nonuniformity of the electric and magnetic fields.

ANSWER: guiding center approximation [or words such as “theory” and “formalism” in place of “approximation”]

[10] The guiding center approximation is used to describe the motion of electrons and ions in these quasi-neutral ionized gases.

ANSWER: plasmas

[10] The circular motion of a charged particle around a guiding center occurs at the frequency named for these devices, which equals charge times magnetic field over mass. These devices consist of two “D”-shaped cavities placed between two magnetic coils.

ANSWER: cyclotrons [or cyclotron frequency]

13. Fulgentius states that this character's name is from the Greek for "knowing nothing," since this character is a "miser who is so stupid he cannot help himself." For 10 points each:

[10] Name this Phrygian king, who was given a gift by either Dionysus or Apollo to turn anything he touched into gold.

ANSWER: **Midas**

[10] In antiquity, this river once contained electrum, an alloy of copper and gold which gave Lydia much of its wealth. Mythology states that this river had so much gold in it because Midas washed off his golden touch in it.

ANSWER: **Pactolus**

[10] The river Pactolus originates on the mountain named for this god or king, with whom Midas judged a music contest between Apollo and Pan. Heracles once served his wife Omphale for a year.

ANSWER: **Tmolus**

14. Answer the following about bad times for King Richard II, for 10 points each.

[10] The attempts of an Essex official to collect a poll tax in 1381 sparked this uprising, led by a ragtag band including Jack Straw, John Ball, and Wat Tyler.

ANSWER: **Peasants** Revolt of 1381

[10] In response to Richard's noxious friendship with Robert de Vere, this group—originally consisting of three nobles—formed against Richard and defeated him in 1387 at Radcot Bridge, after which they convicted all of his favorites at the Merciless Parliament.

ANSWER: **Lords Appellant** [prompt any partial answer]

[10] Sometimes known as the Revolt of the Earls, this uprising in late 1399 tried to kill the newly-crowned king Henry IV at a Windsor jousting tournament and put Richard II back on the throne, but it was betrayed by Edward of Norwich.

ANSWER: **Epiphany** Rising [prompt on the Oxford Rebellion]

15. In this play, Ambitioso and Supervacuo are surprised to learn that they have killed their brother Junior instead of Lussurioso. For 10 points each:

[10] Name this play attributed at times to both Cyril Tourneur and Thomas Middleton, which is set in an unnamed court in Italy. Its title character, Vindice, disguises himself as Piato and discovers that his mother is subject to "frailty."

ANSWER: *The* **Revenger's Tragedy**

[10] *The Revenger's Tragedy* was inspired by the works of this playwright, who popularized the revenge tragedy genre in England. He wrote a now-lost predecessor to *Hamlet* as well as *The Spanish Tragedy*.

ANSWER: Thomas **Kyd**

[10] In *The Revenger's Tragedy*, the immoral Duke dies when he kisses this object. In another scene, this object is curiously given a female sexuality when it is presented "dressed in tires."

ANSWER: the **skull** of Gloriana [or disguised **skeleton**; prompt on corpse]

16. Answer the following about uses of zeolites in industrial chemistry, for 10 points each.

[10] Zeolites are commonly used to make these porous materials, which can be used to remove water or other small molecules, since large molecules adsorb while small ones pass through.

ANSWER: **molecular sieves**

[10] Zeolites can be used to make catalysts with this property, meaning their interactions with reactants depend on the size and three-dimensional structure of the reactants.

ANSWER: **shape-selective** catalysts

[10] Zeolites are often used in this process, in which long-chain hydrocarbons are broken down to form small alkenes and alkanes, which are used in various petroleum products.

ANSWER: fluid catalytic **cracking**

17. This character describes her failing marriage to Kaneie, who is thought to be a member of the Fujiwara clan, in the *Kagero Nikki*, which Edward Seidensticker translated as *The Gossamer Years*. For 10 points each:

[10] Name this anonymous female aristocrat, who is only known through her son's name. Her diary is one of the earliest known prose works written by a Japanese woman writer.

ANSWER: The **Mother of Michitsuna** [or **Michitsuna no Haha**; do not accept or prompt on "Michitsuna"]

[10] The Mother of Michitsuna became one of the 36 immortals for inserting beautiful passages of this genre of poetry, whose name literally means "Japanese poetry." The *Kokinshu* is a collection of this genre of poetry, which later became synonymous with *tanka*.

ANSWER: **waka**

[10] The Mother of Michitsuna's diary portrays court life during this period of Japanese history, which is also portrayed in *The Tale of Genji*, dated 150 years later.

ANSWER: **Heian** period

18. In 1912, Fredrik Robert Martin purchased a few pages from this manuscript, sparking Western interest in it. For 10 points each:

[10] Name this 10th century manuscript that was lavishly produced with golden and silver ink. It is named for the unusual dye used on its vellum.

ANSWER: **Blue Qur'an** [prompt on Qur'an; accept al-**Mus'haf al-Azraq**]

[10] The gold-on-blue color scheme of the Blue Qur'an can also be seen on the mosaic inscriptions of this Umayyad site on the Temple Mount in Jerusalem, an Islamic shrine whose namesake structure is made from gold.

ANSWER: **Dome of the Rock** [or **Qubbat Al-Sakhrah**]

[10] The Blue Qur'an was written in this script, which is named after a city in Iraq renowned for its Arabic calligraphy. This script is angular and often features numerous right angles.

ANSWER: **Kufic** script

19. These concepts include *artha* and *dharma*, which mean “prosperity” and “the divine law.” For 10 points each:

[10] Name this group of four concepts, which are often called the “four aims of Hinduism.”

ANSWER: **purusharthas**

[10] One of the *purusharthas* is this concept, which refers to “salvation.” More specifically, it means the liberation of one from *samsara*, the cyclic process of birth and death.

ANSWER: **moksha**

[10] This is the fourth member of the *purusharthas*. A book on this concept was written by Vatsyayana, who legendarily abridged Nandi’s 1000-chapter tome on this concept.

ANSWER: **kama** [prompt on pleasure, love, erotica, anything suggesting sex that’s not the answer.]

20. The leader of these people was instructed by a Delphic oracle to find a city where rain fell out of a clear sky, by which the oracle meant a city named for his wife. For 10 points each:

[10] Name this group of people who founded the Greek colony of Taras, or modern Taranto, in Italy in the eighth century BC, after they were expelled from Sparta.

ANSWER: **Parthenians** [or **Partheniae**; do not accept or prompt on “Parthian(s)”]

[10] Several historians agree that the Partheniae were expelled from Sparta during the first of these bloody wars, which lasted from about 735 to 715 BC. Sparta captured the fortress of Ithome and forced king Aristodemus to submit in these wars.

ANSWER: **Messenian** Wars [or First **Messenian** War]

[10] Later sources anachronistically refer to the Parthenians as bastard sons of these people, who could be killed by members of the Krypteia when war was annually declared on them by the ephors.

ANSWER: **helots** [or **Spartan slaves**; prompt on slaves]