

ACF Nationals 2016
Editors' Packet 3
Tossups

1. The coalescence of grain boundaries during industrial deposition processes contributes to the “intrinsic” value of this quantity in a thin film, which can be calculated by the substrate curvature method using the Stoney equation. The value of this quantity in an isotropic material is considered in the Tresca criterion. By defining a plane whose normal vectors make equal angles with all three principal axes, one can define an “octahedral” value of this quantity which is proportional to its J_2 invariant. This non-dimensionless quantity can be broken into a “hydrostatic” component and a “deviatoric” component, both of which are represented by rank-2 tensors whose diagonal elements are “normal” and whose off-diagonal elements are “shear.” For 10 points, name this quantity which, like pressure, has units of force per unit area and induces strain in a material.

ANSWER: **stress** [accept more specific answers like shear **stress**, deviatoric **stress** or **stress** tensor]

2. As retribution for this event, Edgeworth Ussher was murdered on the front steps of his home at Milford Lodge by Benjamin Lett. The chant to remember this event was a rallying cry for William Johnston, who became a cause celebre when he locked himself in jail after several juries refused to convict him. The doctrine that “pre-emptive force” is justified when someone is left with “no choice of means, and no moment for deliberation” became a legal test for self-defense named for this event. A public funeral in front of the Eagle Hotel was given for a black stagecoach driver killed in this event named Amos Durfee. This crisis broke out after Alexander McLeod was sent to Fort Schlosser, and reported back to Allan MacNab. Alexander Baring apologized for British involvement in this event as part of the Webster-Ashburton Treaty. For 10 points, name this 1837 incident in which an American ship was set on fire and tossed over Niagara Falls.

ANSWER: **Caroline** Affair

3. A comic scene in this novel depicts a battle in a church graveyard in which a girl defeats a jealous mob by throwing skulls and swinging a human thighbone. The main character of this novel is accosted by the novice highwayman Mr. Anderson, but is so moved by his tale of poverty that he gives him two guineas. This novel’s heroine runs away from home after her father, a drunken boor obsessed with hunting, locks her in her room to force her to marry a man she detests. Near this novel’s end, its main character encourages Mr. Nightingale to marry Mrs. Miller’s daughter Nancy before stabbing Mr. Fitzpatrick in a duel. Its title character travels to London with his servant Partridge to look for a woman staying with Lady Bellaston. That woman forgives the title character for sleeping with Molly Seagrim and Mrs. Waters, and marries him instead of the duplicitous Blifil. For 10 points, name this novel about a “foundling” who marries Sophia Western, written by Henry Fielding.

ANSWER: *The History of **Tom Jones**, a Foundling*

4. A thinker argued against the “need hypothesis” of this process by citing Garrison Keillor’s description of a person threatened with being thrown out of a helicopter. Richard Schmidt wrote a 1990 article about the role of consciousness in this process, in which he argues that his Noticing Hypothesis implies that awareness is needed for this process to occur. The errors that occur during this process were analyzed by Pit Corder. Michael Long developed the interaction theory of this process based on Stephen Krashen, who posited that this process is hampered by the “affective filter” caused by negative emotions like anxiety. Krashen’s theory is called the Monitor Model of this process, which can result in a phenomenon called “fossilization.” This process can occur by five stages—preproduction or the “silent period,” early production, emergence, intermediate fluency, and advanced fluency. For 10 points, name this process by which a person obtains a new grammar and vocabulary.

ANSWER: **second language acquisition** [or **SLA** or **L2** or functional equivalents like “**learning a new language**” or “learning a second language” – PROMPT on just learning a language]

5. Two recordings of this work made 23 years apart, under John Barbirolli and Simon Rattle, both featured Janet Baker as a figure who sings the line "You cannot now / cherish a wish which ought to be wished" in a duet with the tenor soloist. An F-major melody marked "dolce e legato" opens the second section of this work, much of which is in 3/4 time. This work's score contains the instruction "For one moment, must every instrument exert its fullest force" at the end of an orchestral crescendo that follows a bass aria sung by the Angel of Agony. Various orchestral themes in this work were given names like "Fear" and "Judgement" in an analysis by the publisher August Jaeger. The title character's "Soul" has a dramatic encounter with God at the climax of this work, which follows its orchestral prelude with the prayer "Jesu, Maria – I am near to death". For 10 points, name this oratorio that sets text from a poem by John Henry Newman and was composed by Edward Elgar.

ANSWER: *The **Dream of Gerontius*** [or Edward **Elgar**'s **Opus 38**]

6. This document was written after James Gibbon wrote a letter stating that one should try to “hold the hearts of the multitude by the bonds of love.” It was largely drafted by Camillo Mazella, who was the former dean of Woodstock College. The principle of subsidiarity was first discussed in this document, which introduced the concept, but not the name, of the preferential option through the neo-Thomism of Luigi Taparelli. This document, which rejects the dissolution of private property, notes that the family is “older than any State.” It calls “artificer’s guilds” and “workingmen’s unions” the most important of historical “excellent results,” and rejects socialism and unfettered capitalism as options to the issue discussed. For 10 points, identify this encyclical discussing the “working classes” which was issued by Leo XIII and named for the “new things” it discussed.

ANSWER: **Rerum Novarum** [or **Rights and Duties of Capital and Labor**]

7. In one essay, this author discusses a fictional “sunburn expert” who determines whether someone’s skin has “a case of sunburn,” instead of “sunnishburn.” A piece in this author’s volume *Subjective, Intersubjective, Objective* titled “Knowing One’s Own Mind” introduced a construct whose definition of “house” has no meaning. Another of this author’s essays states “where there is causality, there must be a law,” which he calls the “Principle of Nomological Charity”; that essay by him holds that although mental states reduce to physical states, there is no pre-determined set of laws that govern the reductions. In a paper about a construct with “no causal history,” this author proposed a thought experiment in which lightning strikes animates a collection of peat matter that subsequently looks similar to the author. “Mental Events” was written by, for 10 points, what author, who created the Swampman thought experiment, and also theorized anomalous monism?

ANSWER: Donald **Davidson**

8. An author from this movement wrote a novel partly set in locations like Satanopolis and the “Grand Hotel Metaphysics” and includes a Chinese kraken as a character. That novel from this movement, *Tenderenda*, includes a poem beginning “joli-fanto bambla o falli bambla / grossiga m’pfa, habla horem,” which was meant to show the “equilibrium of the vowels.” A manifesto from this movement says “to put out a manifesto you must want: ABC, to fulminate against 1, 2, 3” An author from this movement would often dress up as a “cubist bishop” and perform his sound poetry, such as “Karawane.” A play from this movement ends with the repeated lines "Go lie down" and "This will end with a lovely marriage" and an Eye, Nose, Mouth, Ear and Neck as characters. A co-founder of the Cabaret Voltaire was a member of this movement, as was the author of the play *The Gas Heart*. For 10 points, name this movement whose literary members included Hugo Ball and Tristan Tzara, which takes its name from a word meaning "hobby-horse."

ANSWER: **Dadaism**

9. A book named for this city, thought to be authored by Juliana Berners, contains three essays on hawking, hunting, and heraldry, and was printed in color in 1486. During a battle at this city, one side camped behind ramparts at Tonman Ditch and Thomas Clifford died during a rear attack near Cross Keys, defending this town’s barricades. One force made a stand in this city at Beech Bottom Dyke, an ancient earthwork, while the opposing monarch reportedly spent the whole battle singing under a tree and talking to himself. The death of Edmund Beaufort, Duke of Somerset at this site led to a tense four-year peace, after which the battles of Blore Heath and Ludford Bridge broke out. The second battle at this site occurred a few days after the Battle of Mortimer’s Cross, and saw Margaret of Anjou successfully recapture her husband Henry VI. For 10 points, name this site of two battles during the Wars of the Roses, including the first battle of the war.

ANSWER: **St. Albans**

10. The Wilson-Devinney software package models these systems and allows one to incorporate the reflection effect, limb darkening and tidal effects into them. The currently unexplained O'Connell Effect is the name given to the phenomenon of the maxima of these system's brightness clumping together on a visual diagram. Harlow Shapley proved that the Cepheids were not actually this kind of system since the Cepheids' separation distance would have to be smaller than their individual sizes. Their light curves feature periodic dips since the plane of rotation of these systems coincides with a viewer's line of sight. Algol was called the "demon star" since it is one of these systems, which gave ancient observers the impression of "winking." For 10 points, name these extrinsic variable stars in which one star periodically occults the other star.

ANSWER: **eclipsing** binary [accept word forms for **eclipse**; prompt on "binary (star);" prompt on "variable stars" before "separation."]

11. A figure who is named for this substance was once left on a block of ice by his mother to abandon him; but a group of birds saved it by using their warm feathers. That culture hero who brought this substance to mankind had an original name of Qi meaning "The Abandoned," and was born after Jiang Yuan was impregnated by stepping into the giant footprint of Shangdi. In another story, when Cangjie invented writing, it was said that this substance fell from the sky like rain from heaven. A "Lord of" it named Houji is believed to have founded the Zhou Dynasty. An episode named for this foodstuff ends with a character being told "This is the way of all flesh" after imagining that he has passed his civil service exam, has been betrayed, and is about to kill himself. That "dream" episode of Lu Dongbin is named for the "yellow" kind of this food. For 10 points, name this grain that, unlike rice, was cultivated in northern China.

ANSWER: **millet** [accept foxtail **millet**; accept **sorghum**; prompt on "grain" until it is read; prompt on "food" until "foodstuff" is read]

12. One of this choreographer's later works features six couples dancing to the music of Beethoven's seventh symphony. This choreographer collaborated with the lighting designer Jennifer Tipton and Jerome Robbins on *Brahms/Handel*. For every performance of one ballet by this choreographer, six street kids sprayed graffiti as the dancers performed songs arranged by David Horowitz. This artist shocked the dance world by being the first to combine jazz songs with dance in her piece *Eight Jelly Rolls*. The Joffrey Ballet commissioned this choreographer to set music by the Beach Boys in her ballet *Deuce Coupe*. This artist staged performances of *Don Giovanni* and other operas and dances for a film by Milos Forman and also choreographed a jukebox musical using the music of Billy Joel. For 10 points, name this choreographer who worked on the film *Amadeus* and the musical *Movin' Out*.

ANSWER: Twyla **Tharp**

13. The classic culture that shares its name with this modern city includes the site of El Tajín, home to the Pyramid of the Niches. Just to the north of this city is a site featuring three ceremonial stone rings beneath its great pyramid, perhaps used to predict eclipses by Totonac priests. South of this modern city, the Tuxtla Mountains were the site of the Late Formative culture at Tres Zapotes. This city was attacked by the Bluejackets, a force commanded by Frank Friday Fletcher, in response to the Ypiranga Incident. This city's great fortress, San Juan de Ulúa, became a prison infamously surrounded by sharks under Porfirio Díaz, after it was bombarded during the Pastry War. On four occasions, this city was given the nickname "Heroic" by its legislature, including when it was occupied following the Tampico Affair. The best known siege of this city was followed by the Battle of Cerro Gordo. For 10 points, name this seaport taken by Winfield Scott during the Mexican-American War.

ANSWER: Veracruz [or "Heroica Veracruz" or Villa Rica de la Vera Cruz]

14. Gilles Leroy won a Prix Goncourt for his "novel" about this author, who is visited in Asheville by the male protagonist in Tennessee Williams's *Clothes for a Summer Hotel*. Articles by this author including "The Changing Beauty of Park Avenue" and "Paint and Powder" were, according to Matthew Bruccoli's *Some Sort of Epic Grandeur*, often published only under a shared byline. This author's sudden late-20s obsession with ballet, her affair with the pilot Edouard Jozan on the French Riviera, and her origin as the daughter of a Southern judge all factored into the plot of her only novel. Nancy Milford made her name with a 1970 biography of this author of *Save Me the Waltz*. This woman's anesthesia-influenced wish that her daughter become a "beautiful little fool" was placed verbatim into the mouth of Daisy Buchanan. For 10 points, name this woman who was fictionalized as Nicole Warren in her husband's novel *Tender is the Night*.

ANSWER: Zelda Fitzgerald [or Zelda Sayre; prompt on Fitzgerald]

15. The NucliSENS EasyMAG device is used to accomplish this task, whose products are usually stored in a mixture of 10 millimolar Tris and 1 millimolar EDTA. This task can be accomplished using an anion-exchange resin containing di-ethyl-amino-ethanol groups, or via "spin columns" manufactured by the company Qiagen. A common technique used to accomplish this task often incorporates guanidinium thiocyanate as a chaotropic agent. When this task is complete, the ratio of the product's absorption at 260 nm to absorption at 280 nm should be greater than 1.8. A mixture of phenol and chloroform is often used to accomplish this task via liquid-liquid extraction, while a simple but cruder technique uses ethanol to precipitate the target. For 10 points, name the goal of all of those techniques, which exploit the hydrophilicity of negatively charged phosphate groups to isolate a certain biomolecule.

ANSWER: purification of DNA [accept synonyms for purification such as extracting, separating, isolating, etc; in place of "DNA," accept RNA or nucleic acids or plasmids]

16. During warfare, local tribes on this island hid their women on a certain hill, but after they returned one day to get them and found only red plants symbolizing blood, that area was dubbed the Forbidden Plateau. The natives of this island surrendered their land by the Douglas Treaties, named for the governor who set up a base here at Esquimalt. This island, once named in honor of Juan Bodega y Quadra, is home to the Upper Triassic Karmutsen Formation, which creates the Insular Mountain range and its highest peak, the Golden Hinde. The construction of Fort Camosun on this island occurred after three conventions here resolved the Nootka Crisis. This island, home to Royal Roads University, sits to the west of the Discovery Islands, and is separated from the mainland by the Strait of Georgia. For 10 points, name this island north of the Juan de Fuca Strait, which shares its name with the largest city in British Columbia.

ANSWER: **Vancouver** Island

17. This process is commonly performed in industry using “falling-film” or “forced circulation” devices. An inert gas is applied directly to the surface of the sample in the “blow-down” form of this process. A rule of thumb used in one form of this process is to set three components of the device to 20, 40, and 60 degrees Celsius. In industry, the product of this process is often fed into the utilities stream for the next stage of this process, a phenomenon called the “multiple-effect” form of this process. Centrifugal devices for performing this process can be used to reduce bumping, since they use cold traps to collect the effluent. In the organic chemistry laboratory, this process is performed by spinning a round-bottom flask in a hot water bath to remove the solvent from the sample in a “rotary” fashion. For 10 points, name this process which occurs alongside transpiration and before condensation in the water cycle.

ANSWER: **evaporation** [or **vaporization**, or **boiling**, accept **rotary evaporation** or any answers involving using a **Rotovap**, prompt on answers describing “**increasing the concentration** of a solution” or “**removing a solvent**”]

18. In a letter, Rainer Maria Rilke wrote that these works are “pre-occupied with themselves” because of their use of white. An early one of these works was rejected by the Salon for using a black background and was painted in the “ballsy” or “couillarde” manner characteristic of its artist. An unusual one of these works includes a medallion made by the artist's friend Philippe Solari. The Courtauld Institute in London contains one of these paintings depicting a statue of cupid with no arms that is made out of plaster. In the last years of the artist's life, several of these paintings were created depicting three or more skulls stacked on top of each other. These works include *Bread and Eggs*, *Pyramid of Skulls*, and *The Basket of Apples*. For 10 points, name these paintings of commonplace subjects created by a French Post-Impressionist also known for his depictions of Mount Saint-Victoire.

ANSWER: Paul **Cezanne**'s **still lifes** [accept "**nature morte**" for "still life"; prompt on partial answers]

19. The activities of this organization were reported on by ambassador Franklin Mott Gunther. Members of this group were instructed that singing songs is the “chief manifestation of our state of mind” in their textbook, which was called *The Nest Leader’s Manual*. The second leader of this group used the name Josef Weber to escape under a fake passport, and set up a refugee camp. In response to the popularity of this organization, Octavian Goga formed the National Christian Party. After this group’s Captain was put on trial for illegally organizing underage students and then killed, this group was led by Horia Sima during a period where it executed 60 government officials at Jilava prison and forced the abdication of Carol II. For 10 points, name this paramilitary organization founded by Corneliu Codreanu, also known as the Legion of the Archangel Michael, which launched pogroms while serving as the fascist party in Romania.

ANSWER: **Iron Guard** [or **Garda de fier**, or **Legion** of the **Archangel Michael** or the **“Legionnaires”** or the **“Legionary Movement”** BEFORE the word “Legion” is mentioned]

20. In one novel, this character is imagined to rise from the dead, asking his brother “Why did you let this happen?” This character’s death at 2 pm inspires his brother to commit a murder years later at 2 am in a novel in which this character is nicknamed Zujj and is said to have “lived for two hours” and “died for seventy years, long after his funeral.” In that novel, this man is supposedly a resident of Hudjout. In another novel, the protagonist states “knocking four quick times on the door of unhappiness” as he unloads bullets into this man’s corpse. This character is imagined to be the brother of Harun and named Musa in a 2013 novel by Kamel Daoud. This character is murdered on a beach in Marengo after drawing his knife on the protagonist, who shoots him five times using Raymond Sintes’ gun. For 10 points, identify this character who is mercilessly murdered by Meursault in *The Stranger*.

ANSWER: The **Arab** from *The Stranger* [accept **Musa** before it is mentioned]

Tiebreaker: In one of this composer’s works, a soprano begs for relief from the “balmy breezes” and the “crystal streams.” An instrumental interlude for string orchestra and two oboes in B-flat major features in another piece by this composer, in which the chorus pleads with zephyrs to extend the sleep brought on by nightingales. Edmond Budry set the lyrics of his Easter hymn “Thine Be The Glory” to the tune of a chorus by this composer, whose original lyrics were written by Thomas Morell and proclaim “Sound the trumpets! Beat the drums!” The sinfonia known as “Arrival of the Queen of Sheba” opens Act 3 of another piece by this composer, who also wrote the chorus “See, the conqu’ring hero comes.” For 10 points, name this composer of the oratorios *Susannah*, *Solomon* and *Judas Maccabaeus*.

ANSWER: George Frideric **Handel**

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Bonuses

1. After being trapped on “Marooner’s Rock,” this character declares, “To die will be an awfully big adventure” in chapter 8, “The Mermaid’s Lagoon.” For 10 points each:

[10] Name this character, who was first introduced in a section from the novel *The Little White Bird* that describes his origin story in Kensington Gardens.

ANSWER: **Peter Pan** [prompt on partial answers]

[10] Peter Pan is the most famous creation of this Scottish author of *The Admirable Crichton*.

ANSWER: J.M. **Barrie** [or James Matthew **Barrie**]

[10] Stella Bradshaw participates in a performance of *Peter Pan* in this author’s novel *An Awfully Big Adventure*. This British author won Whitbread prizes for *Injury Time* and *Every Man For Himself* and was shortlisted for the Booker five times.

ANSWER: Beryl **Bainbridge** [or Beryl Margaret **Bainbridge**]

2. The name for this effect, coined by Henry Landsberger, refers to a Western Electric factory where a study was conducted to see if workers perform better in bright or dim light. For 10 points each:

[10] Name this effect which says that individuals try to improve aspects of their behavior when they become aware that they are being observed.

ANSWER: **Hawthorne** Effect [prompt on the “observation bias” or “observer effect” – need specific name]

[10] Several “equity theories” of motivation focus on helping workers attain this state, which is at the top of Abraham Maslow’s hierarchy of needs. Maslow defined it as realizing and then reaching one’s full potential.

ANSWER: **self-actualization** [or **self-actualizing**]

[10] This man worked with Elton Mayo on discovering the Hawthorne Effect, but is best known for his Yankee City project, where he discovered six types of classes and 31 types of social cliques that operated in Newburyport, Massachusetts.

ANSWER: W. Lloyd **Warner** [or William Lloyd **Warner**]

3. In purple bacteria, electrons are passed from the photosynthetic reaction center to this compound, which then passes them on to a quinone. For 10 points each:

[10] Name this compound, which serves as the primary electron acceptor in photosystem II. It is structurally equivalent to a chlorophyll molecule without a central metal cation.

ANSWER: **pheophytin**

[10] The central metal cation in chlorophyll is an atom of this alkaline earth element.

ANSWER: **magnesium** [or **Mg**]

[10] In purple bacteria, the reaction center is excited by a photon with this wavelength. Please give your answer in nanometers.

ANSWER: **870** nm

4. The introduction to this book argues “The greatest lesson of the reduction is the impossibility of a complete reduction.” For 10 points each:

[10] Name this book, which begins by attacking the Cartesian distinction between the mind and the body to argue that the body must be treated as a subject, not only an object. It also compares the body in a world to a heart in an organism.

ANSWER: **Phenomenology of Perception** [or **Phénoménologie de la perception**]

[10] This French philosopher used the work of Edmund Husserl as a starting point for *The Phenomenology of Perception*. Many of its conclusions are discussed later in *The Visible and the Invisible*.

ANSWER: Maurice **Merleau-Ponty**

[10] Merleau-Ponty’s argument that the body and the world are interconnected appears in this essay from *The Visible and the Invisible* which argues that a painter “offers himself or herself” to the world to produce a painting.

ANSWER: “**Eye and Mind**”

5. This man, who infamously shouted at Hubert Humphrey for his position on Vietnam during the 1968 Democratic Convention, was indicted during Watergate for taking a \$10,000 bribe from milk producers, but was acquitted. For 10 points each:

[10] Name this Secretary of the Treasury under Richard Nixon who removed the U.S. dollar from the gold standard, prompting the Nixon Shock.

ANSWER: John Bowden **Connally, Jr.**

[10] John Connally, Jr. was serving in this position when he was wounded during the assassination of John F. Kennedy. Its later holders have included Ann Richards and Rick Perry.

ANSWER: **Governor of Texas** [prompt on governor]

[10] During this controversy in 1952, Texas governor Allan Shivers may have swung the election by convincing Dwight Eisenhower to pledge that the namesake region, where oil had been discovered in 1938, would be returned from federal control back to the state of Texas.

ANSWER: **Tidelands** Oil Controversy [or just **Tideland**]

6. For 10 points each, answer the following about the use of perfumes and other aromas during religious practice.

[10] Cologne is offered to *mullahs* during many Islamic customs, such as during this observance, which commemorates the birth of Muhammad.

ANSWER: **mawlid**

[10] A religious ceremony called “Dhup-Sarvi” or the “ceremony of the perfumes” is performed by some members of this religion. Three members of this religion brought gold, frankincense and myrrh to Jesus in Bethlehem.

ANSWER: **Zoroastrianism**

[10] Incense sticks are often used during the rituals in Hindu religion called by this term, which honor one or more gods. Food and drink are often sacrificed during these rituals.

ANSWER: **puja** [or **poojan**]

7. Olivier Messiaen listed this scale as the second of his modes of limited transposition. For 10 points each:

[10] Name this scale formed by starting on the first degree and ascending in alternating half steps and whole steps, or vice versa.

ANSWER: **octatonic** scale [or (symmetric) **diminished** scale; accept "mode" or "collection" for "scale"]

[10] Pieter van der Toorn and others have argued that the octatonic scale is the basis for multiple passages in this Stravinsky ballet, which ends with the sacrifice of a chosen girl. Its premiere was marked by audience unrest.

ANSWER: *The **Rite of Spring*** [or *Le **Sacre du printemps*** or ***Vesna svyashchennaya***]

[10] The octatonic scale was sometimes jokingly called the Rimsky scale because Rimsky-Korsakov used it so much, especially in this symphonic poem, later adapted into an opera, about a gusli player who leaves his home in Novgorod.

ANSWER: **Sadko**

8. A particularly lyrical passage in this story describes two ocean waves somersaulting and arching “their backs so beautifully, showing white veins in the green and black.” For 10 points each:

[10] Name this story in which the narrator awakens on his twenty-first birthday after imagining that he is in a movie theatre, watching his parents’ courtship.

ANSWER: “**In Dreams Begin Responsibilities**”

[10] “In Dreams Begin Responsibilities” was written by this dedicatee of John Berryman’s *His Toy, His Dream, His Rest*. This author of “In the Naked Bed, In Plato’s Cave” was the basis for the title character of Saul Bellow’s *Humboldt’s Gift*.

ANSWER: Delmore **Schwartz**

[10] “In Dreams Begin Responsibilities” describes the narrator’s parents going on a date at the boardwalk in this New York City location, though the mother disdains its amusement parks. Lawrence Ferlinghetti wrote a poetry collection titled for this place “of the Mind.”

ANSWER: **Coney Island** [accept A **Coney Island of the Mind**]

9. The foremost early leader of this faction was Jacob of Mies, who preached at the University of Prague that the laity should receive the Eucharist in both bread and wine. For 10 points each:

[10] Name this moderate faction that maintained amicable relations with the Roman Catholic Church, and emerged victorious over their rivals at the Battle of Lipany during the Hussite Wars.

ANSWER: **Utraquists** [or **Calixtines** or **Calixtin**, or **Kalisnici**, prompt on **Hussites**]

[10] After Jan Zizka died and Prokop the Great took leadership of the Taborites, their faction took this name initially called the “Lesser Taborites.” Starting in 1424, Ambroz of Hradec and the priest Prokop the Lesser led this faction of radical Hussites in Bohemia.

ANSWER: **Orphans** [or the **Sirotcí**, or the **Ophans**’ Union]

[10] All Protestant sects were outlawed in Bohemia after this 1620 battle named for a raised hill near Prague early in the Thirty Years War, where Christian of Anhalt was defeated by the Catholic League.

ANSWER: Battle of **White Mountain** [or **Bílá Hora**]

10. The Sommerfeld expansion is used to calculate the chemical potential and other properties of Fermi gases with this property.

[10] Name this property, which appears in ultra-cold Fermi gases when the temperature is very small compared to the Fermi temperature.

ANSWER: **degenerate** [or **degeneracy**]

[10] Ultra-cold Fermi and Bose gases are often studied within this type of trap, which is named for the shape of the potential formed by the electromagnetic fields.

ANSWER: **harmonic** trap [accept “quantum **harmonic** oscillator”]

[10] In the classical limit, the distribution function of a Fermi gas changes from the Fermi-Dirac distribution to the one named for Boltzmann and this scientist, which models gases in thermal equilibrium.

ANSWER: James Clerk **Maxwell**

11. The Statute of Frauds requires certain types of these entities to be in writing, such as ones that transfer an interest in real estate. For 10 points each:

[10] Name this term which describes a legal agreement between two parties which occurs when there is an offer, an acceptance, and good consideration.

ANSWER: **contract** [accept word forms such as “contracting”]

[10] This scholar, who wrote the book *The Morality of Law* and the article “The Case of the Speluncean Explorers,” wrote extensively on the “consideration and form” of contracts. He also got into a 1958 debate with H.L.A. Hart where he defended natural law.

ANSWER: Lon L. **Fuller** [or Lon Luvois **Fuller**]

[10] This food-based metaphor is used in law to describe a small nominal payment that is solely designed to satisfy the requirement of being good consideration for a contract. The English case of *Chappell v. Nestle* held that this food item is still good consideration, even if the person who receives it doesn't like it.

ANSWER: **peppercorn** [do not accept any other answers]

12. After climbing Monte Gennaro, this character meets a woman who has prickly chestnut shells attached to her hair called the Queen of the Mountains. For 10 points each:

[10] Name this character, a friend of “Louis the Cruel” who is obsessed with Tu Fu. In a novella, this resident of Castagnetta imagines that his obituary will read “died on the sixteenth of this month.”

ANSWER: **Klingsor** [accept **Klingsor's Last Summer**]

[10] Klingsor is a member of this profession in Hermann Hesse's “Klingsor's Last Summer.” A Dutch member of this profession is the subject of Irving Stone's *Lust for Life*.

ANSWER: **painter** [prompt on **artist**]

[10] Klingsor, though fond of Chinese culture, lives in this country. A writer from this country wrote of a painter who struggles to make a living in his novel *Green Henry*.

ANSWER: **Switzerland** [or the **Swiss** Confederation]

13. This functional group, which contains no heteroatoms, contains a single *sp*-hybridized carbon atom in between two *sp*²-hybridized carbons. For 10 points each:

[10] Name this specific type of functional group, which is less stable than the related “isolated” and “conjugated” types.

ANSWER: **allene** [accept but DO NOT REVEAL **cumulated diene**, do not accept or prompt on any other type of diene]

[10] Allenes are an example of this type of functional group, which serves as the electron-rich reactant in the Diels-Alder reaction.

ANSWER: **dienes** [prompt on “alkenes” or “polyenes”]

[10] A common inverse electron demand aza-Diels-Alder reaction uses these compounds, which are aromatic heterocycles containing 4 nitrogens.

ANSWER: 1,2,4,5-**tetrazines**

14. This artist created a circular ceiling mural of the *Apotheosis of Saint Genevieve* for the dome of the Panthéon. For 10 points each:

[10] Name this student of Jacques-Louis David who made his name with the 1804 painting *Bonaparte Visiting the Plague-Stricken in Jaffa*. He also painted Napoleon on horseback at the battles of Aboukir and Eylau.

ANSWER: Antoine-Jean **Gros** [or Jean-Antoine **Gros**]

[10] *Bonaparte Visits the Plague Stricken in Jaffa* can be found in this French art museum, which also houses Da Vinci’s *Madonna of the Rocks*, and the *Venus de Milo*.

ANSWER: **Louvre** Museum [or Musée du **Louvre**]

[10] Gros’s other depictions of Napoleon include one of him planting a flag on a bridge during this battle. A Vernet painting depicting this battle shows Napoleon waving a battered tricolor and leading troops across the same bridge.

ANSWER: Battle of **Arcole** [or **Arcola**; accept the bridge of **Arcole** or Pont d’**Arcole**; accept *Bonaparte at the Pont d’Arcole*]

15. This king, whose Arabic name refers to his curly hair, seized the port city of Mukhawan and massacred a group of Monophysite Christians in Najran around 522 CE. For 10 points each:

[10] Name this Jewish warlord who also attacked merchants in Yemen, forcing them to flee back to the Byzantine court of Justin I. He allegedly committed a magnificent suicide by riding his horse into the Red Sea.

ANSWER: **Dhu Nawas** [or Yusuf **Thu Nuwas**, or Yusuf As’ar **Yath’ar**, or **Dunaan** or **Dimnon** or **Mash’ruq**]

[10] Dhu Nawas considered himself the heir to this kingdom, which conquered the Sabaeen Kingdom around 280 CE and set up its capital at Zafar near modern Sana’a in Yemen. Its ruler Charibael had friendly relations with the west.

ANSWER: **Himyarite** Kingdom [or **Homerite**]

[10] This kingdom deposed Dhu Nawas and put a puppet ruler in his place. Frumentius introduced Christianity to this kingdom, which ruled Ethiopia from about 100 to 940 CE, and was the reputed home of the Queen of Sheba.

ANSWER: **Axum** [or **Aksum** or **Aksumite** Empire/Kingdom]

16. Herodotus claims that the ruler of Scythia was one of these figures, and that Heracles slept with her because she stole the Cattle of Geryon from him. For 10 points each:

[10] Name these creatures which are generally depicted as female serpents with human-like features. Sybaris was one of these creatures who terrorized those at Delphi, at least until Eurybaros tossed her over a cliff and killed her.

ANSWER: drakaina [prompt on "dragons"]

[10] Another *drakaina*, Campe, was killed by Zeus during this conflict so that he could release the Cyclopes and have them forge weapons to overthrow Cronus.

ANSWER: the Titanomachy [or Titanomachia]

[10] This deity sent the *drakaina* Poena to terrorize the Argives for killing Linus, his child. The song of praise "paean" is derived from an epithet of this deity, and originally referred to songs that specifically praised him.

ANSWER: Apollo [accept Phoebus Apollo or Apollon]

17. For 10 points each, answer the following about the architecture of the town of Carcassone.

[10] A large one of these buildings can be found in Carcassone built by the viscounts of Trencavel. Like many other structures of its type, it possesses a drawbridge and is surrounded by defensive curtain walls.

ANSWER: castles [or fortresses]

[10] This French Gothic Revivalist architect restored the fortress at Carcassone. That project led him to write his treatise *Castles and Warfare in the Middle Ages*.

ANSWER: Eugene Emmanuel Viollet-le-Duc [do not prompt on partial answers]

[10] Carcassone Cathedral features one of these sections of a religious building divided into three parts, a hallmark of the Romanesque style. The narthex is the portion of this structure that often serves as its entrance.

ANSWER: nave

18. This algorithm basically works by having a process setting a flag, checking to see if another flag is already being used, and spinning until the flag that the process does not use is released.

For 10 points each:

[10] Identify this algorithm, the first known solution to the problem of mutual exclusion in concurrent programming.

ANSWER: Dekker's algorithm

[10] Dekker's algorithm guarantees that this state is never reached. In this state, multiple processes are mutually dependent on the completion of one or more of the other processes, leading to none of the processes progressing.

ANSWER: deadlock

[10] Dekker's algorithm is a forerunner to the first type of this construct, which supports mutual exclusion across processes. Invented by Dijkstra, they are named for a system of communication.

ANSWER: semaphores

19. These letters were repudiated in the later Oranienstein Letters, which gave up the stadtholderate and instructed officers to return to government. For 10 points each:

[10] Name these letters written by William V, the Prince of Orange, in 1795 on behalf of the Dutch state. They are named after the English palace where he resided after the invasion of France.

ANSWER: **Kew** Letters

[10] The Kew Letters were William's call for Dutch officials to refuse to recognize this republic proclaimed in 1795, which was governed semi-democratically by the grand pensionary Rutger Jan Schimmelpenninck.

ANSWER: **Batavian** Republic

[10] Napoleon later wrote to Rutger while living in the Longwood House after being exiled to this island in 1815, where he died of stomach cancer.

ANSWER: **Saint Helena**

20. For 10 points each, answer the following about European Romantic literary criticism:

[10] August and Friedrich Schlegel founded this literary magazine, which contained an article by Friedrich stating that "Romantic poetry" is the "progressive, universal poetry."

ANSWER: **Athenaeum**

[10] In England, this 1817 autobiographical book spread the ideas of Schelling's Romanticism to the public. Its second chapter states "the men of greatest genius ... appear to have been of calm and tranquil temper."

ANSWER: **Biographia Literaria** or Biographical Sketches of MY LITERARY LIFE and OPINIONS

[10] This man's correspondence with Archim von Arnim asserts that "nature poetry" is "based on myth," and that poetry could be judged by how faithful it was to the source material. He published a collection of fairy tales with his brother Wilhelm.

ANSWER: Jakob [Ludwig Carl] **Grimm**