

ACF Fall 2017

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Packet by TAMU A/Cornell B/Michigan B/UBC A/Liberty B

Tossups

1. Statues of this god are often placed in front of doorways in order to block unwanted visitors. The first 16 forms of this god are called “Shodasa,” while the latter 16 are named “Ekavimsathi.” This god is invoked in a mantra which asks for his blessing over new beginnings. This god won a race around the world against his brother Muragan, or Kartikeya. This god was sculpted from clay in order to protect his mother, and is referred to as the “remover of obstacles.” After he refused to allow entry into the room where his mother Parvati was bathing, this god was beheaded by Shiva and brought back to life with a new head. For 10 points, name this elephant-headed Hindu god.

ANSWER: Ganesh

2. One painting by this artist shows Colin Fitzgerald using a spear to save Alexander III of Scotland from an angry stag. Another painting by this artist shows Hymen, the god of marriage, brandishing a flaming torch and holding the leashes of a hippopotamus and an eagle. This artist succeeded Joshua Reynolds to become the second president of the Royal Academy. Reynolds had earlier been ignored when he suggested that figures in one painting by this artist should be clad in togas. That painting by this artist shows a native warrior with his head on his fist, watching the last moments of the title soldier. For 10 points, name this American artist of *The Death of General Wolfe*.

ANSWER: Benjamin West

3. In a poem by this author, a wife cries “don’t, don’t, don’t, don’t” on a stairwell after encountering her husband, who complains “Can’t a man speak of his own child he’s lost?” Another poem by this author compares the fallen “inner dome of heaven” to the ice melting off the title trees, which are so malleable the speaker imagines that a boy plays on them until their tops reach the ground. This author of “Home Burial” wrote a poem whose speaker describes a forest as “lovely, dark, and deep,” but moves on because he has “promises to keep / and miles to go before I sleep.” For 10 points, name this American poet of “Birches” and “Stopping by Woods on a Snowy Evening.”

ANSWER: Robert Frost

4. A hypervalent atom of this element is the lightest atom that can be found at the center of an octahedral compound. Penicillin and biotin contain heterocycles of nitrogen and this element. This element reduces iodine in the iodine clock reaction. This element forms a cluster with iron in proteins such as aconitase. In protein stabilizers like DTT and beta-mercapto-ethanol, this element is the reductant. In its most common allotrope, this element forms an eight-member ring. This element’s most common oxidation state is negative 2, just like its upper neighbor on the periodic table, oxygen. For 10 points, name this element whose compounds often smell like rotten eggs.

ANSWER: sulfur [or S]

5. In honor of this battle, five hundred goats were sacrificed each year during the Boedromia festival. Cynaegirus died after his arm was chopped off while holding onto a ship during this battle, in which his brother Aeschylus also participated. Sparta refused to participate in this battle, citing the Carneia festival as an excuse. The exiled king Hippias became a traitor by assisting the losers of this battle. The *polemarch* Miltiades formulated the winning strategy in this battle. This victory over Darius I was announced by Pheidippides, who died after sprinting back to Athens to announce it. For 10 points, name this 490 BCE victory for the Greeks over the Persians that names a 26.2-mile-long run.

ANSWER: Battle of Marathon

6. During a carriage ride, a character in this novel remarks “revenge may be wicked, but it’s natural.” Another of this novel’s characters is punished by being made Governor of Coventry Island by a man who has just been cheated out of a thousand pounds. A prelude titled “Before the Curtain” frames this novel as a puppet show. One character in this novel has an affair with the Marquis of Steyne. William Dobbin expresses unrequited love for a woman in this novel whose husband George Osborne is killed at the Battle of Waterloo. In this novel, Rawdon Crawley marries the manipulative Becky Sharp. For 10 points, name this “novel without a hero” by William Makepeace Thackeray.

ANSWER: Vanity Fair

7. This city contains many *yalis*, mansions built immediately adjacent to the sea. This city’s main business districts are Maslak and Levent, which contains the Sapphire building. The original Orient Express ran from Paris to this city’s Sirkeci train station. The conically-topped Galata Tower was built by Genoese merchants living in this city. The Sublime Porte was a gate into this city’s Topkapi Palace, which is located next to its harbor, called the Golden Horn. The Fatih Sultan Mehmet Bridge in this city spans the Bosphorus strait and connects its Asian and European components. For 10 points, name this largest city in Turkey.

ANSWER: Istanbul

8. A book by George Lakoff is titled for an unusual class of these things in the Dyrbal (JER-ball) language. In Navajo, these things are classified by shape and consistency, while in many languages these things are classified by animacy. Classifiers, or counter words, are used in East Asian languages to accompany these words and characterize them. A language is said to possess grammatical gender when class distinctions in these things have syntactic agreement. These words can be identified as “count” or “mass” instances of them, and can be replaced by words such as “it” and “me.” For 10 points, identify these words which can be modified by adjectives and name people, places, and things.

ANSWER: nouns

9. This leader’s government ceded the Cape Juby Strip after fighting the Ifni War. The Catholic Opus Dei, founded in this dictator’s country, gained great influence thanks to this leader’s support. During World War II, a group of volunteers from his country called the Blue Division fought for Nazi Germany. This leader is buried in a massive mountainside memorial he built called the Valley of the Fallen. The only legal union under this man’s rule was the Vertical Syndicate. This man’s Falange party won a war against a group supported by the Abraham Lincoln Brigade using tactics like the bombing of Guernica. For 10 points, name this fascist Spanish dictator, succeeded by Juan Carlos I, who won the Spanish Civil War.

ANSWER: Francisco Franco

10. Compilers use techniques such as fission and fusion to optimize the efficiency of these structures. Code in these entities can be skipped by using the “continue” keyword. An example of code with a runtime of big O of N squared is the nested variety of these constructs. These constructs can be optimized by “unrolling” them. The “in” keyword is used to implement one type of these structures, which iterates through a collection. Common examples of these constructs include the “foreach” type, the “do while” type, the “for” type, and the “while” type. For 10 points, name these control flow statements that let code be executed repeatedly.

ANSWER: loops [or specific types, including for loops, foreach loops, while loops or do while loops before they are read]

11. *Architectural Forum* magazine called one of this artist’s buildings “the Biggest Mirror ever.” That building served as a complex for Bell Labs in Holmdale, New Jersey. This architect designed a whale-shaped hockey rink at Yale named for David S. Ingalls. This architect also designed a cylindrical chapel with a spartan brick exterior next to a building shaped like an eighth of a sphere. This architect of the MIT Chapel and Kresge Auditorium included a sweeping wing-shaped roof for his design of the TWA Terminal at JFK International Airport. This architect modeled a monument after a catenary curve. For 10 points, name this Finnish architect of St. Louis’s *Gateway Arch*.

ANSWER: Eero Saarin [do not accept or prompt on “Eliel Saarinen”]

12. A book about this concept likens it to the capacity to chop, possessed by an axe, and the power of sight, possessed by an eye. A dialogue shows how this entity is divided through a description of Leontius feeling both intense desire and dread upon coming across some corpses. A tripartite division of this concept into rational, appetitive, and spirited elements is posited in the *Republic*. Aristotle described the nutritive, sensitive, and rational degrees of this entity in his book *De Anima*. The dialogue *Phaedo* concludes that this entity is immortal, unlike the body. For 10 points, name this immortal part of a person, believed by Plato to undergo transmigration.

ANSWER: the soul [or psyche]

13. In what is considered this author's first poem, he praises the Roman historian Cornelius Nepos, who "took courage to set forth the whole history of the world in three volumes." In one poem, this author greets a "girl with not the smallest nose." This poet wrote in another poem that he would sodomize Furius and Aurelius, two critics of his poetry. This poet wrote that he wanted to give his lover 3300 kisses, and in another poem he wrote about how he hates her and loves her at the same time. For 10 points, identify this Roman poet, who admired the poems of Sappho and addressed many poems to Lesbia.

ANSWER: Gaius Valerius Catullus

14. The first theoretical wormholes to be valid in the Schwarzschild metric were co-named for this scientist and Nathan Rosen. One idea that this scientist discarded was later integrated into the lambda-CDM model and exerts a negative pressure on the universe. With Bose, this scientist names a distribution that describes the behavior of integer-spin particles. He called the cosmological constant his "greatest mistake" and won a Nobel Prize in Physics for his explanation of the photoelectric effect. In 1905, this former Swiss patent clerk published the *Annus Mirabilis* papers detailing phenomena such as time dilation. For 10 points, name this scientist who stated that E equals mc^2 .

ANSWER: Albert Einstein

15. In the trial following this event, Kate Alterman's testimony was cast into doubt after she repeated much of it verbatim on different occasions. The Uprising of the Twenty Thousand was a massive walkout after this event, which bolstered the influence of the ILGWU. Wealthy women who supported workers who walked out on strike after this event were known as the "mink brigade." This event's death toll was greatly increased because Max Blanck and Isaac Harris—the owners of the building in which it occurred—locked vital escape doors that opened inwards. For 10 points, name this 1911 tragedy which killed many female New York garment workers.

ANSWER: Triangle Shirtwaist Factory fire

16. This denomination split into Old Calendarists and New Calendarists over whether to use the Julian calendar to schedule holidays. This denomination rejects St. Augustine's view of original sin, and believes humans only inherit the consequences of Adam and Eve's sins, not their guilt. This denomination rejects the Filioque (fil-ee-OH-kway) clause, believing that the Holy Spirit proceeds from the Father alone. This denomination's altars are hidden from view by an Iconostasis, a wall containing portraits of saints. This denomination is currently led by Bartholomew I, the Ecumenical Patriarch. For 10 points, name this Christian church that split with the Catholics in the Schism of 1054.

ANSWER: Eastern Orthodox Church [prompt on Byzantine Empire or Church of the Byzantine Empire or Russian Orthodox Church or Bulgarian Orthodox Church or Serbian Orthodox Church or Greek Orthodox Church]

17. The protagonist of this novel kills a man and then pretends to be him to have sex with his lover, this novel's antagonist. The Duke of Buckingham hurriedly has two diamond studs made in this novel. During a fight, the protagonist of this novel is shocked to discover a *fleur-de-lis* branded into his opponent's shoulder, marking her as a convicted criminal. At the end of this novel, the protagonist is forced to accept a promotion from Cardinal Richelieu. After attempting to duel all of its members in succession, d'Artagnan joins this novel's title group. For 10 points, name this historical novel by Alexandre Dumas about the adventures of Athos, Porthos, and Aramis.

ANSWER: *The* Three Musketeers [or *Les* Trois Mousquetaires]

18. A decade-long unrequited passion for Kamila Stösslová inspired Leoš Janáček (LAY-osh YAH-na-check) to write his second work of this type, *Intimate Letters*. The composer of another work of this type marked its second movement as *allegro moderato à la polka*. In the last movement of that work of this type, a violin sustains a high E to represent the composer's tinnitus. That piece is Bedrich Smetana's "From My Life." An extended stay in Spillville, Iowa inspired Dvořák's twelfth work of this type, subtitled "American." Haydn's 68 examples of this type of work helped make this chamber music genre popular. For 10 points, name this type of work for two violins, a viola, and a cello.

ANSWER: **string quartet** [prompt on quartets]

19. This leader won a 1971 war against a neighboring country after that country attacked her country's airfields in Operation Chengiz Khan. During this leader's tenure, a nuclear bomb nicknamed "Smiling Buddha" was tested at Pokhran. Mob violence after this leader's death was condoned when her son stated "when a great tree falls, the earth shakes." This leader assumed near-absolute control for 21 months in the Emergency. After this leader ordered an assault on the Golden Temple in Operation Blue Star, she was assassinated by two Sikh bodyguards. This leader was succeeded by her son Rajiv. For 10 points, name this daughter of Jawaharlal Nehru, the only female prime minister of India.

ANSWER: **Indira Gandhi** [prompt on Gandhi]

20. The carnitine shuttle is used in a biochemical pathway named for this letter. A polypeptide chain can reverse direction in a four-residue "turn" named for this letter. A motif named for this letter comes in parallel or anti-parallel forms depending on its orientation of hydrogen bonds. Fatty acids are metabolized in an "oxidation" process named for this letter. Drugs such as propranolol that block certain receptors for epinephrine are known as "blockers" of this letter. Cellulose cannot be digested by humans due to its glycosidic bonds named for this letter. This letter names a "pleated sheet," a kind of protein secondary structure. For 10 points, name this Greek letter that comes after alpha.

ANSWER: **beta**

Tiebreaker. This number is the highest integer power found in Pell's equation. This number raised to the power of its square root gives the transcendental Gelfond-Schneider number. Euler proved that the Riemann zeta function of this number equals pi squared over 6. Adding one to a Mersenne prime will always result in a power of this number. No solution exists for the equation $a^n + b^n = c^n$, when n is greater than this number, according to Fermat's Last Theorem. This is the largest number whose factorial equals itself, and its square root is equal to around 1.414. For 10 points, name this number that is the base in the binary system.

ANSWER: **two** [or 2]

Bonuses

1. In 2015, an American company for this style of dance promoted Misty Copeland to principal dancer, making her the first ever African-American to serve that role. For 10 points each:

[10] Name this style of dance with its technique rooted in five foot positions. Dancers of this style often train at a *barre* and perform works such as Tchaikovsky's *The Nutcracker*.

ANSWER: **ballet**

[10] In this ballet technique, dancers wear special shoes and support their entire weight on the tips of their toes. Vaslav Nijinsky could dance in this manner, an uncommon feat among male ballerinas of his time.

ANSWER: *en* **pointe** (on-pwont)

[10] Ballerinas often go *en pointe* while performing this move, in which dancers rise from any of the foot positions onto their toes. Ballet students often practice *pliés* (plee-AYS) and this move at the *barre*.

ANSWER: **relevé**

2. This character disguises himself as the gypsy fortune-teller Mother Bunches as a prank on Blanche Ingram and his governess. For 10 points each:

[10] Name this character who hires Grace Poole to nurse his mad wife Bertha Mason, whom he keeps locked in the attic. This master of Thornfield Hall hires Jane Eyre as a governess to his ward Adèle Varens.

ANSWER: Mr **Edward** Fairfax **Rochester** [accept either underlined part]

[10] Mr Rochester and Jane Eyre were created by this author of *Shirley* and *The Professor*, who lived in the parsonage at Haworth with her sisters Emily and Anne.

ANSWER: **Charlotte** **Brontë** [prompt on **Brontë**]

[10] Charlotte Brontë reworked the premise of *The Professor* into this other novel about Lucy Snowe, who travels to teach at an all-girls boarding school in the title fictional Belgian city.

ANSWER: **Villette**

3. Answer some questions about medieval Egypt, for 10 points each.

[10] This caliphate, named after Muhammad's daughter, ruled Egypt from the 10th century to 1171. Its caliph al-Hakim the Mad outraged Christians by destroying the Church of the Holy Sepulchre.

ANSWER: **Fatimid** Caliphate

[10] This military leader overthrew the Fatimids to establish the Ayyubid Caliphate. His victory at the Battle of the Horns of Hattin prompted the Third Crusade.

ANSWER: **Saladin** [or **Salah ad-Din**]

[10] This Turkish empire conquered Egypt in the 16th century. This empire fell after it lost World War I while fighting as part of the Central Powers.

ANSWER: **Ottoman** Empire

4. All of these entities that are square and invertible make up the general linear group. For 10 points each:

[10] Name these arrays of numbers or expressions that consist of rows and columns.

ANSWER: **matrix** [or **matrices**]

[10] The special linear group, on the other hand, contains square invertible matrices that have a value of 1 for this property. A matrix has an inverse if and only if it has a nonzero value for this quantity.

ANSWER: **determinant** [prompt on **det**]

[10] Applying this operation to a matrix, then taking the complex conjugate of the result, gives the adjoint of a matrix, usually denoted by a dagger. Under this operation, symmetric matrices will remain unchanged.

ANSWER: **transpose** [or **transposition**]

5. The Laffer curve proposes that reducing these policies will increase government revenue. For 10 points each:
[10] Name these policies that governments use to raise money. Many libertarians propose enacting a "flat" one.

ANSWER: **taxes**

[10] Taxes can be used to account for these outcomes, which affect parties outside of a contract. An example is the pollution in Town A from a chemical plant that leases land in Town B.

ANSWER: **externalities** [or negative **externalities**; or positive **externalities**]

[10] This theorem states that if trade is possible and transaction costs are low enough, all parties will reach an efficient outcome even in the presence of externalities.

ANSWER: **Coase** theorem [or **Coase's** theorem]

6. In a mystery novel by this author, the investigative journalist Joseph Rouletabille travels to the estate of Lord Stangerson. For 10 points each:

[10] Name this author of a novel in which Rouletabille and the detective Frederic Larsan have a friendly rivalry to solve crimes near the Chateau du Glandier, *The Mystery of the Yellow Room*.

ANSWER: Gaston **Leroux**

[10] Leroux also wrote this novel about the young soprano Christine Daaé, who is tutored by a man she calls the "angel of music." That man later turns out to be Erik, who hides his deformed face with a mask.

ANSWER: *The **Phantom of the Opera***

[10] *The Mystery of the Yellow Room* is an acclaimed example of a locked room mystery. Another example is this Wilkie Collins novel in which the title cursed diamond disappears from Rachel Verinder's mansion.

ANSWER: *The **Moonstone***

7. The mushroom *Suillus tomentosus* forms this relationship with the tree *Pinus contorta*. For 10 points each:

[10] Name these symbiotic relationships. The "arbuscular" type of these things is formed when hyphae completely penetrate the cortical cells of a plant.

ANSWER: **mycorrhizae** [or **mycorrhizal** relationship]

[10] Mycorrhizae are made of plant roots that pair with members of this kingdom. Members of this kingdom include bread molds, slime molds, and yeast.

ANSWER: **fungi** [or **funguses**]

[10] The tip of a plant root contains a root cap, which contains statocytes and statoliths that help it respond to this force. Charles Darwin demonstrated that when the cap of a root is cut off, it can no longer respond to this force.

ANSWER: force of **gravity** [or **gravitational** force; prompt on g]

8. Eight leaders of this region were jailed in late October 2017 on charges of rebellion and sedition after its parliament voted to secede from Spain. For 10 points each:

[10] Name this region of Spain with capital at Barcelona. Its former president, Carles Puigdemont (POOJ-de-mon), fled to Belgium to avoid prosecution.

ANSWER: **Catalonia** [or **Catalunya**; or **Cataluña**]

[10] This Spanish prime minister called the Catalanian independence vote "a clear violation of the laws." He dissolved the Catalanian parliament after the independence referendum.

ANSWER: Mariano **Rajoy** [RAH-hoy] Brey

[10] This other separatist region voted for independence from Iraq in September 2017. The Peshmerga are a security force in this unofficial region, whose dominant ethnic group also makes up the Turkish political party PKK.

ANSWER: **Kurdistan** [or Iraqi **Kurdistan**; prompt on Kurds or Northern Iraq]

9. This religion's scripture claims that after Jesus was resurrected, he visited the Nephites, an Israelite people who had emigrated to the Americas. For 10 points each:

[10] Name this religion, which was founded by Joseph Smith after he was visited by the angel Moroni.

ANSWER: **Mormonism** [or the **Mormon** Church; or the Church of Jesus Christ of **Latter-Day Saints**; or Church of the **LDS**]

[10] Ahmadiyya Muslims believe that Jesus survived crucifixion and died at the age of 120 before his burial in the Roza Bal shrine in this country. This country is also home to the White Minaret in its city of Qadian (ka-DYE-en).

ANSWER: **India**

[10] According to the Gospels, this man and Nicodemus buried the body of Jesus after his crucifixion. This man, who was from Arimathea, legendarily helped spread the Gospel in Britain.

ANSWER: Saint **Joseph** of Arimathea

10. This man headed an organization which demanded the "Three Fs": fair rent, free sale, and fixity of tenure. For 10 points each:

[10] Name this agitator for Home Rule, whose popularity following the unmasking of the Pigott letter forgery nosedived after his affair with Kitty O'Shea was revealed.

ANSWER: Charles **Parnell**

[10] Parnell signed the Kilmainham Treaty granting many rights to tenants along with this British Prime Minister, a powerful Liberal Party politician who often clashed with Benjamin Disraeli.

ANSWER: William **Gladstone**

[10] Parnell was an important leader in this modern-day country in the 19th century, during which it suffered a massive famine caused by the failure of its potato crop.

ANSWER: **Ireland**

11. In a play by this author, the regulars at Harry Hope's saloon entertain themselves with pipe dreams. For 10 points each:

[10] Name this American playwright of *The Iceman Cometh*, as well as *Anna Christie* and *Mourning Becomes Electra*.

ANSWER: Eugene **O'Neill**

[10] This autobiographical O'Neill play uncovers the lives of the Tyrone family as they deal with Edmund's tuberculosis and his mother Mary's morphine addiction.

ANSWER: ***Long Day's Journey into Night***

[10] The characters in this nine-act O'Neill play often speak their thoughts aloud to the audience. Its main character, Nina Leeds, bears a child with her doctor Ned Darrell after learning that insanity runs in her husband's family.

ANSWER: ***Strange Interlude***

12. Han van Meegeren repainted Caravaggio's *Supper at Emmaus* and convinced experts that it was painted by this artist. For 10 points each:

[10] Name this artist of genre paintings such as *The Milkmaid* and *The Astronomer*, who painted a young woman seated at a virginal in *The Music Lesson*.

ANSWER: Johannes "Jan" **Vermeer**

[10] Vermeer also painted a portrait of a girl dressed in exotic clothing and wearing a blue headscarf, with this specific object in her ear.

ANSWER: **pearl earring** [or ***Girl with a Pearl Earring***; prompt on **earring**]

[10] Vermeer's *Girl With a Pearl Earring* and *View of Delft* are displayed in the Mauritshuis ["morr-it-z-house"] gallery in this Dutch city. That gallery in this city also features Rembrandt's *The Anatomy Lesson of Dr. Nicolaes Tulp*.

ANSWER: The **Hague** [or **'s-Gravenhage** or Den **Haag** or La **Have**]

13. Answer some questions about the Risorgimento, for 10 points each.

[10] This “sword of Italian unification” and leader of the Red Shirts captured Sicily in the Expedition of a Thousand.

ANSWER: Giuseppe **Garibaldi**

[10] This battle between a Franco-Sardinian alliance and Austria was the last time each army was personally led by a monarch. Its devastation inspired Jean-Henri Dunant to found the Red Cross.

ANSWER: Battle of **Solferino**

[10] This French emperor pledged support for Italian independence in the Pact of Plombières. He was later forced to abdicate after the Franco-Prussian War.

ANSWER: **Napoleon III** [prompt on **Napoleon**]

14. This man attacked the foundations of calculus in *The Analyst* and rejected many of Newton’s ideas in his book *De Motu*. For 10 points each:

[10] Name this Irish philosopher who stated “to be is to be perceived” and wrote *A Treatise Concerning the Principles of Human Knowledge*.

ANSWER: George **Berkeley**

[10] Berkeley was a proponent of subjective idealism, which denies the existence of material things and states that only these entities exist. Descartes proposed a namesake theory of dualism between this entity and the body.

ANSWER: the **mind** [or **mental**; prompt on **thoughts**]

[10] This thinker proposed the idea of Berkeley’s Razor in a study of *De Motu*. This author of *The Logic of Scientific Discovery* argued that science is distinguished from pseudoscience by allowing for falsifiable theories.

ANSWER: Karl **Popper**

15. This compound can be produced by the complete hydrogenation of benzene. For 10 points each:

[10] Name this compound, which can exhibit chair and boat conformations.

ANSWER: **cyclohexane** [prompt on **C₆H₁₂**]

[10] The chair and boat structures are conformational types of this phenomenon, which occurs when two compounds have the same molecular formula but different chemical structures. Chirality causes the “stereo” type of this phenomenon.

ANSWER: **isomerism** [or stereoisomerism; or conformational **isomerism**]

[10] This other conformation of cyclohexane is the only other one along with the chair that can be isolated in pure form. A cyclohexane ring flip must proceed through this conformation as an intermediate.

ANSWER: **twist-boat** [do not accept or prompt on just “boat”]

16. Answer the following about mythological bovines, for 10 points each.

[10] Name this bull in Hindu mythology who is both the gatekeeper and mount of the god Shiva.

ANSWER: **Nandi**

[10] In Greek mythology, Zeus kidnapped this first queen of Crete and mother of Minos in the form of a bull.

ANSWER: **Europa**

[10] The fields of King Aetes had a large number of fire-breathing bulls made of this material. A giant made of this material named Talos was built to protect Europa by patrolling the island of Crete.

ANSWER: **bronze**

17. For 10 points each, answer some questions about music during the Renaissance:

[10] This Italian composer set liturgy from Marian feasts in *Vespers for the Blessed Virgin*. He also wrote some of the oldest operas still performed today, *The Coronation of Poppea* and *L’Orfeo*.

ANSWER: Claudio **Monteverdi**

[10] This English Renaissance composer wrote the Phrygian tune “Why Fum’th (FUME-eth) in Fight.” William Byrd wrote the musical elegy *Ye Sacred Muses* in honor of this composer of *Spem in alium*.

ANSWER: Thomas **Tallis**

[10] Tallis composed *Spem in alium*, an example of this type of work, for eight separate five-voice choirs. This type of work, a polyphonic setting of a sacred Latin text, contrasts with the secular madrigal.

ANSWER: **motets**

18. Answer some questions about the history of Wyoming, for 10 points each:

[10] Wyoming was nicknamed the “Equality State” because it was the first state to allow this practice, which was allowed nationwide by the 19th Amendment.

ANSWER: **women’s suffrage** [or **women voting**; prompt on partial answer]

[10] This scandal, named for an oil field in Wyoming, occurred when Warren G. Harding’s Secretary of the Interior, Albert Fall, accepted bribes to lease Navy petroleum fields to private companies.

ANSWER: **Teapot Dome** scandal

[10] During this event in Wyoming, white miners employed by the Union Pacific Railroad massacred 28 Chinese miners in one of the worst incidents of racial violence in American history.

ANSWER: **Rock Springs** Massacre

19. A boy named Smith takes up this sport after he is sent to a borstal, or prison school, in a short story by Alan Sillitoe. For 10 points each:

[10] Name this sport, the subject of a Haruki Murakami book called “what we talk about when we talk about” it. Sillitoe’s story is named for the “loneliness” of a competitor in the long-distance type of this sport.

ANSWER: long-distance **running** [prompt on **marathon** or **ultramarathon**]

[10] This Murakami novel begins with the protagonist Toru Okada searching for his missing cat. At the beginning of the second book of this novel, he finds his wife Kumiko is missing, too.

ANSWER: *The **Wind-Up Bird Chronicle***

[10] A story collection by Murakami is set “after” one of these events, which is mentioned in all six stories, including “All God’s Children Can Dance,” “Super-Frog Saves Tokyo,” and “Honey Pie.”

ANSWER: an **earthquake** [or the **Kobe earthquake**; or **After the Quake**]

20. The frequency of Rayleigh scattering is inversely proportional to the fourth power of this quantity. For 10 points each:

[10] Name this quantity, symbolized lambda, which is equal to the distance between consecutive crests or troughs of a wave.

ANSWER: **wavelength**

[10] Rayleigh scattering is an example of this type of scattering. This word describes collisions in which the total kinetic energy is conserved.

ANSWER: **elastic** scattering [or **elastic** collisions]

[10] This other type of scattering is the inelastic counterpart of Rayleigh scattering. This process can lead to Stokes or anti-Stokes transitions when an absorbed photon is re-emitted.

ANSWER: **Raman** scattering