



ACADEMIC COMPETITION FEDERATION

2015 ACF NATIONALS
PACKET BY MIT A AND ALBERTA

TOSSUPS

1. An African-American spiritual titled for this substance contains the chorus “if you cannot sing like angels, if you can’t preach like Paul, you can tell the love of Jesus, and say he died for all.” A town in Maine originally called Peabody’s Patent was named because it was thought to contain this substance. An admonishment to the church in Laodicea in Revelations that they’ve become blind evokes an irony to an Old Testament mention of this substance. Joseph is sold by his brothers to caravans that are carrying, among other goods, this substance, which Josephus writes was one of the gifts to King Solomon from the Queen of Sheba. Jeremiah 46:11 tells the “virgin daughter of Egypt” to obtain this substance, while Jeremiah 8:22 asks rhetorically about this substance prior to asking “Is there no physician there?” For 10 points, identify this perfume used medicinally and named for a region lying in the Biblical kingdom of Judah.

ANSWER: Balm of Gilead [or the balm in Gilead; player must give both Balm and Gilead - prompt on only partial answers; accept reasonable synonyms in place of balm including “perfume”, “medicine”, “fragrant oil”, etc.]

2. This quantity can be computed as minus kT times the natural log of the expectation value of the exponential of minus the change in interaction energy over kT using the Widom insertion method. Either energy or this quantity is plotted on the x-axis of the diagram of Hofstadter’s butterfly. Along with temperature and volume, this quantity is held constant in the grand canonical ensemble. For a real gas, the change in this quantity with respect to a reference state equals RT times the natural log of fugacity over reference fugacity. At absolute zero, this quantity is equal to the Fermi energy. Changes in this quantity are expressed in terms of changes in pressure and temperature by the Gibbs-Duhem equation. It is the thermodynamic conjugate of the number of particles. For 10 points, name this quantity which represents the change in free energy when one particle is added or removed from a system, which is symbolized μ .

ANSWER: chemical potential [prompt on “mu”]

3. A group of rebels against this king waged the Battle of Fenny Bridges and adopted the slogan “Kill All the Gentlemen!” after a man was stabbed with a pitchfork at Sampford Courtenay during a conflict sometimes called the Western Rebellion. This king’s army attacked castles fortified by engineer Migliorino Ubaldini as part of a conflict that ended when he ratified the Treaty of Norham, which was signed after his great victory at the Battle of Pinkie Cleugh. Another rebellion against this king started when the land of John Flowerdew was seized at Wyndham, but it was crushed at Dussindale. This king thus put down Kett’s Rebellion with the help of his regent John Dudley, the Duke of Northumberland. He was set to be married in the War of the Rough Wooing to an infant bride. While giving birth to this future king, Jane Seymour died, and this king died himself from TB at age 15. For 10 points, name this King of England, who succeeded Henry VIII.

ANSWER: Edward VI of England [prompt on “Edward”]

4. One character in this work recalls an incident when a cattle-dealer’s leg was cut off by a train, and later in the waiting room, that man kept asking for his foot because his boot had twenty rubles in it. This story references Pushkin’s poem “The Hero” when a character quotes “The illusion which exalts us is dearer to us than ten thousand truths”. One man in this story is embarrassed that he hasn’t washed since spring, and the water around him turns brown as he bathes. This story forms a trilogy along with “The Man in a Case” and “About Love”. In this story, the beautiful maid Pelagea takes care of the two central characters when they head to Alehin’s estate to take shelter from the rain. Ivan Ivanich tells Burkin about his brother Nikolai, who is infatuated with advertisements of farmland for sale in this story. For 10 points, name this Anton Chekhov story in which Nikolai is obsessed with growing bushes of the title fruit.

ANSWER: “Gooseberries” [or “Kryzhovnik”]

5. Bendix Grodtschilling is believed to have made one of these items using narwhal teeth, though popular legend suggests it is made from unicorn horns. Jean-Baptiste Tavernier, a French merchant, described another of these objects as having a quadrangular shaped dome and four steps. That example of this sort of item had a platform canopied in silk that was supported by twelve pillars. Scenes from the story of Joseph appear on the front of one of these items, which was made from ivory for the poor archdeacon Maximianus. Iron, wood and ivory were used to make one of these things commissioned by Ivan the Terrible. Bebadal Khan made one of these things for Shah Jahan that took its name from the two avian forms that stood behind it. For 10 points, identify this sort of object which included the “peacock” one in India.

ANSWER: thrones

6. These mathematical objects are in bijection with class functions on " S_n " via the Frobenius characteristic map. The Jacobi-Trudi identity expresses an eponymous example of these objects as the determinant of a matrix whose entries are themselves filled with these expressions. The product of two of these objects can be decomposed into a linear combination of them with their Littlewood-Richardson coefficients. One type of these objects can be defined by summing over all semi-standard Young tableaux of a given shape and is named for Schur. Newton's identities relate the power sum type of these objects to “complete homogeneous” ones. Their fundamental theorem states that any one of them can be written uniquely as a polynomial of the “elementary” types of these objects. For 10 points, name these functions that remain the same when their variables, which are raised to some positive integer power, are permuted.

ANSWER: symmetric polynomials [or Schur functions; or Schur polynomials; prompt on “polynomials” or “symmetric functions”]

7. At one battle, the forces of this empire were led by a Hanoverian deserter named Anthony Pohlmann, who took over the army of mercenary Benoit de Boigne. A man known as the “Machiavelli” of this empire, the minister Nana Fadnavis, was described by Scottish soldier James Grant Duff, who authored a detailed history of this polity. This empire lost autonomy by signing the Treaty of Bassein, after its power devolved to families like the Holkar dynasty and the Scindia clan. This empire was soundly defeated at the Battle of Assaye while it was under the leadership of Bajji Rao II. Its northern expansion was halted by the Durrani Empire at the Third Battle of Panipat. Ruled by hereditary prime ministers called *peshwas*, it was carved out of the Adilshahi sultanate by its founder, Shivaji, and it fought three namesake wars with the British East India Company. For 10 points, name this empire founded by an Indian warrior caste that succeeded the Mughals.

ANSWER: Maratha Confederacy [or Maratha Empire; or Mahratta]

8. In one work, this man called a certain politician “a goat-footed bard” and a “half-human visitor from the hag-ridden magic and enchanted wood of Celtic antiquity.” His dissertation introduced an error called the “principle of indifference,” the notion that events with unknown probabilities are equally likely. He ridiculed the idea that profits in the future could be accurately estimated and claimed that many decisions depend on “a spontaneous urge to action rather than inaction,” or “animal spirits.” He called the Versailles Treaty a “Carthaginian Peace” in a 1919 book lamenting the unfairness of German reparations. This author of *A Treatise on Probability* compared members of his profession to “Euclidean geometers in a non-Euclidean world” who only worked on the “special case” of full employment. For 10 points, name this author of *The General Theory of Employment, Interest and Money*.

ANSWER: John Maynard Keynes

9. A character in this novel feels a sense of “communion” after realizing that millions of people before him had “polished the wood” of a subway turnstile with their hip. This novel's protagonist kills time at a trial in which a clerk at the Montcalme testifies about a woman killing her son by throwing him into a wall. A character in this novel gets mentioned in the newspaper for giving mouth-to-mouth to his tubercular pet monkey Rocco. A car accident in this novel results in the protagonist being jailed after police officers find that he's carrying his dead father's revolver loaded with two bullets. Its protagonist refers to various people, including his lawyers Simkin and Himmelstein, as “reality instructors”, and obsesses over the value of low-grade “potato love”. That protagonist plots to “rescue” his daughter Junie from his ex-wife Madeleine, who ran off with his friend Valentine Gersbach, and spends much of this novel mentally writing letters to people. For 10 points, name this Saul Bellow novel about a former academic named Moses.

ANSWER: Herzog

10. This man went on a survey expedition with his son Frank and the Reverend George Munro Grant, which is documented in the book *Ocean to Ocean*. In 2000, the husband of Bharati Mukherjee, Clark Blaise, wrote a biography of this great man, who was knighted for his work creating the “All Red Line,” the world’s first ever cable along the floor of the Pacific Ocean. This man also created a design adopted by James Morris, showing a bed of trilliums on the right against a brownish-red background, with the number three placed at all four corners; that creation is the Three Penny Beaver. This man, who thus created the first postage stamp used in all of Canada and founded the Royal Canadian Institute, is best known for an idea he developed when he missed a train in Ireland. That idea of his was originally called “Cosmic Time.” For 10 points, name this Canadian railway engineer who invented time zones.

ANSWER: Sir Sandford Fleming

11. One of this man’s compositions takes its title from a novel by Robert Smythe Hichens, and ends with a movement in which a solo flute introduces the first of 163 repetitions of an eight-note theme. That work by this man ends with the movement “In the Street of the Ouled Naïls” (“nah-eels”) and was inspired by a recuperative bicycle trip across the Sahara. Another of his compositions contains a section that opens in 6/4 time with the four-dotted- whole-note figure G, E-flat, A, B; that section ends with an unexpected F9 chord. Parallel fourths in the flutes play over a held D in the violins in an odd moment from a work by this man subtitled “An Homage to Thomas Hardy”. This composer of *Beni Mora* used a series of doors and multiple wordless choruses of women to achieve its fade-out effect in the final section of a suite whose first section opens with a 5/4 ostinato and is nicknamed “Bringer of War”. For 10 points, name this English composer of *Egdon Heath* and *The Planets*.

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

12. A myelodysplastic syndrome caused by a mutation of a transporter of this compound leads to megaloblastic anemia in Rogers syndrome. Red blood cell transketolase activity can be used as a marker to indicate this compound’s depletion. The “banana bag” used to treat nutritionally deficient alcoholics contains magnesium sulfate, folic acid and this compound. The first component of the pyruvate dehydrogenase complex uses a derivative of this molecule as a cofactor. This compound is given either intravenously or intramuscularly to treat a condition characterized by the triad of ataxia, confusion, and either nystagmus or ophthalmoplegia. That condition caused by a deficiency of this compound can progress to anterograde or retrograde amnesia, leading to a variant of that condition named for Korsakoff. For 10 points, name this vitamin whose deficiency can lead to Wernicke’s encephalopathy and beriberi.

ANSWER: thiamine [or vitamin B1]

13. In an unexpectedly comic scene in this play, a character attaches a fan to a broom and waves it at a lantern; she succeeds in putting out the lantern, but immediately falls down the stairs. A character in this play falsely reports having lost a wallet containing his personal seal on the tenth, thus invalidating a promissory note from the thirteenth. In its second scene, a character hides under a porch of the Temma House and communicates with a courtesan by touching her ankles and feet. One of its main characters is scammed out of two *kamme* of silver he owes his uncle by the fiendish oil dealer Kuheiji. This play’s third scene is set at the title shrine in the “Wood of Tenjin”, where the despondent Tokubei and Ohatsu commit the title act. For 10 points, name this very short *bunraku* play by Chikamatsu Monzaemon, not to be confused with a similar play set at Amijima.

ANSWER: The Love Suicides at Sonezaki [or Sonezaki Shinju]

14. Concrete walls were erected in this city during the Peyton Road Affair, caused by fears of blockbusting in one of its affluent neighborhoods, but were torn down after being held unconstitutional. An accused criminal in this city claimed to be a music promoter working for a fictitious woman named Cheryl Johnson; that man, Wayne Williams, was blamed for roughly 30 child murders in this city. John Wesley Dobbs was an unofficial mayor in this city, once known as the “City Too Busy to Hate.” Axe handles called “Pickrick Drumsticks” were wielded by a group of employees in this city while its governor Ivan Allen, Jr., was opposed by the restaurant owner Lester Maddox, who refused to seat black people at his establishment. In a case arising in this city, the Supreme Court used the Commerce Clause to enforce the Civil Rights Act of 1964. For 10 points, name this city, home to a motel in its “Heart” that was the subject of a 1964 Supreme Court decision.

ANSWER: Atlanta, Georgia

15. According to the *Theogony*, a character of this name was kidnapped by Aphrodite not long after his birth to Eos and Cephalus. A more famous figure of this name causes a serpent who was “before not frightening to anyone” to become agitated and leads Bootes to flee. That account of this figure also describes the inscription on this figure’s tomb near the Po river. In that tale of this figure, which follows a challenge by Epaphus to this figure, his grandmother Tethys thrusts back the gates of a stable, out of which he drives the horses Pyrois, Eous, Aethon, and Phlegon. The actions of this character resulted in the Ethiopians’ skin to turn black, the cold Triones to heat up, the earth to split open, and the seas to evaporate. For 10 points, name this son of Clymene and Helios who tried to drive the chariot of the sun.

ANSWER: Phaethon

16. This quantity names a type of unstable “wall mode” in plasma confinement devices such as tokamaks. This quantity is proportional to the electron density divided by temperature raised to the three-halves power all times the Coulomb logarithm according to a formula derived by Lyman Spitzer. A diffusion equation for the magnetic field can be derived from an extension to ideal magnetohydrodynamics named for this quantity. The square root of four kT times bandwidth times this quantity gives the rms voltage of thermal noise. This quantity is the inverse of the slope of a curve which possesses a linear and a saturation region for a MOSFET. It is the inverse of a quantity equal to the ratio of current density to electric field. This quantity is added to reactance to give impedance. For 10 points, name this quantity equal to voltage divided by current according to Ohm’s Law.

ANSWER: resistivity [or resistance]

17. This poem quotes John Denham’s “Of Prudence” in saying “To live and die is all I have to do”. The speaker of this poem describes how people flatter him by saying he “cough[s] like Horace” or has “Ovid’s nose”, and jokes that when he dies, he’ll be compared to Homer because he “died three thousand years ago”. One stanza in this poem describes a figure “blessed with each talent and each art to please” but being “too fond to rule alone, / Bear, like the Turk, no brother near the throne”. Another figure in this poem is called a “mere white curd of ass’s milk”. Joseph Addison and Lord Hervey are satirized in this poem as the characters Atticus and Sporus. Because “All Bedlam, or Parnassus, is let out”, the speaker of this poem commands “Shut, shut the door, good John!” This poem is the source of the phrases “damn with faint praise” and “Who breaks a butterfly upon a wheel?” For 10 points, name this Alexander Pope poem addressed to his physician.

ANSWER: “Epistle to Dr. Arbuthnot”

18. This theorist stated “one must find the demon in every thing” and “one must find the eye in every thing” in a treatise comparing discovery to many “Zeuses” sailing the globe to discover moles. Works by this artist include his portrait of Clarice Lispector and one in which a man rows a boat in frothy water within a house, *The Return of Ulysses*. The cover of Dino Buzzati’s *The Tartar Steppe* features this artist’s *The Red Tower*, which is thematically similar to this artist’s depiction of an orange glove, a green ball and the head of a statue, *Love Song*. After disagreements over the authorship of ideas, Carlo Carra split from this artist’s *scuolametafisica*. Two faceless, classically dressed mannequins with a staff and a mask appear in this artist’s *The Disquieting Muses*. For 10 points, name this painter who included a girl with a hoop following a statue’s shadow in *Mystery and Melancholy of a Street*.

ANSWER: Giorgio de Chirico

19. Prior to this engagement, one force had unsuccessfully attempted to lay siege to Placentia, then proceeded south to Fanum Fortunae. When that army’s commander heard the sounding of a trumpet, he correctly surmised that another general had arrived in the opposing camp, so he briefly withdrew during a night where his guards apparently deserted him. The prelude to this clash was the Battle of Grumentum, in which a nearby force camped at Canusium was repelled. The opposing army was commanded by a man whose later dispute about a tax on salt earned him the nickname Salinator; he was reinforced by the army of his co-consul Gaius Claudius Nero, who circled a ravine to execute a pincer attack. This battle, in which Marcus Livius Drusus defeated a man whose severed head was then thrown into his brother’s camp, was the last major clash in Italy during the Second Punic War. For 10 points, name this 207 BC battle, where Hasdrubal was killed at the namesake river.

ANSWER: Battle of the Metaurus River [or the Metauro River; or Metarus]

20. While professor of moral philosophy at the University of Edinburgh, Gershom Carmichael delivered lectures on ethics modeled on this man’s writings. John Locke’s *Two Treatises* adopts this thinker’s notion that each man has two natural inclinations: a natural sociability and an inclination to self-love. This philosopher used a hypothetico-deductive method in a work consisting of twenty-one definitions, two axioms, and five observations of natural law, the *Elementa*. Many of this philosopher’s theories were developed while he was serving as tutor to Charles Xof Sweden. Unlike his teacher’s *On the Laws of War and Peace*, this thinker argued for a theory of just war based on the concept of a man’s duty. For 10 points, name this German student of Hugo Grotius who authored *On the Law of Nature and Nations* and *On the Duty of Man and Citizen*.

ANSWER: Samuel von Pufendorf

TIEBREAKER

21. Participants in this event were known as “scorporati.” As a result of this event, for a brief time, the punishment of debt by mutilation was curtailed, interest-paying forced loans were replaced with a direct property tax, and three priors were popularly elected, though those reforms were opposed by another alliance. One group involved in this event was led by Bartolo di Jacopo; that faction gathered under a group of eight lower-class leaders who were based at a Dominican monastery. Several hundred years after this event, a statue of one of its leaders was placed in the Loggia del Porcellino. The instigators of this event marched on the Palazzo della Signoria and placed Michele di Lando in power. This incident was sparked by dissatisfaction at the power of the guilds of the *Arti maggiori*. For 10 points, name this 1378 rebellion by a group of Florentine wool-carders.

ANSWER: Ciampi rebellion [or tumult of the Ciampi; or obvious equivalents, such as revolt of the Ciampi]

BONUSES

1. Its author wrote the poem "Uriel" to ridicule himself for refraining from public debate after making this speech. For 10 points each:

[10] Identify this speech, given at Harvard, in which its author attacks the misapplication of Jesus's teachings to the "Cultus" or the established worship of the civilized world. It closes with a wish for a new Teacher to come who will "see the world to be a mirror of the soul."

ANSWER: "The **Divinity School Address**"

[10] This author of "The American Scholar" and "Self-Reliance" laid the groundwork for the Transcendental movement with his "The Divinity School Address."

ANSWER: Ralph Waldo **Emerson**

[10] This other Transcendental philosopher started the vegetarian Fruitlands community to realize his ideas. Much of his transcendentalist writing was decried as "unpublishable" by Emerson.

ANSWER: Amos Bronson **Alcott** [prompt on "**Alcott**"]

2. This man was killed in his tent in Aspendus while leading a military expedition through the Aegean Sea. For 10 points each:

[10] Name this Athenian statesman and military leader who recalled Alcibiades during the Peloponnesian War. After he was exiled in 404 BC, he established a base at a fort named Phyle and gathered a force of soldiers who lost the Battle of Piraeus while trying to retake Athens.

ANSWER: **Thrasybulus**

[10] Thrasybulus led the Athenian resistance to this group of ruling oligarchs, who were installed by Sparta after its victory in the Peloponnesian War. Led by Critias, this group ran criminal trials using a 500-person council, rather than the full citizenry.

ANSWER: **Thirty Tyrants**

[10] A much earlier Thrasybulus was tyrant of this city in the 7th century BC. According to Herodotus, he once walked through a cornfield and cut off the tops of all the tallest plants, to illustrate his belief that a ruler must eliminate his most powerful rivals. This city's later tyrant Aristagorus led the Ionian Revolt against Persia.

ANSWER: **Miletus** [or **Miletos**]

3. Name some things that might be useful if you were trying to compose a twelve bar blues, for 10 points each.

[10] The chord progression of a twelve bar blues consists of seventh chords of this type. One example is the chord consisting of the notes C, E, G, and B flat. They are often contrasted with major, minor, and diminished seventh chords.

ANSWER: **dominant** sevenths

[10] For variety, you might want to replace the I7 (one seven) chord in the fourth bar of a twelve bar blues with a bV7 (flat five seven) chord, an example of this musical technique.

ANSWER: **tritone substitution** [prompt on "chord **substitution**" or "**flat 5** substitution"]

[10] Oftentimes during a blues piece, the bass plays straight quarter notes, a style known by this name.

ANSWER: **walking** bass

4. This word names a theorem which states that when the Hamiltonian is changing sufficiently slowly, a system will remain in the same eigenstate of the new Hamiltonian. For 10 points each:

[10] Name this word, which also names an "index" symbolized by gamma, which is the ratio of heat capacity at constant pressure to heat capacity at constant volume.

ANSWER: **adiabatic**

[10] The adiabatic index for a diatomic ideal gas is equal to this value.

ANSWER: **7/5** [or **1.4**]

[10] For an adiabatic process, there is no change in heat, so this statement, which is derived from the conservation of energy, states that the change in internal energy of a system equals the work done on the system.

ANSWER: **first law** of **thermodynamics**

5. Pelayo finds the title character lying face down in the mud during a rainstorm and exploits him for money until a spider woman arrives, taking away his customers. For 10 points each:

[10] Name this short story which ends when the title character sings chanteys and regains his strength before ultimately flying away.

ANSWER: “A **Very Old Man with Enormous Wings**” [or “Un **señor muy viejo con unas alas enormes**”]

[10] “A Very Old Man with Enormous Wings” is a work by this Colombian author, who wrote about Fermina Daza’s love for Florentino Ariza in *Love in the Time of Cholera*.

ANSWER: Gabriel **Garcia Marquez** [do not prompt on partial answers]

[10] The spider woman from “A Very Old Man with Enormous Wings” also appears in a novella in which this character is forced to become a prostitute by her grandmother, who she convinces Ulises to kill.

ANSWER: Innocent **Erendira** [or la cándida **Eréndira**]

6. This statutory city in Colorado lies near a federal prison known as “the Alcatraz of the Rockies.” For 10 points each:

[10] Name this city, the location of a federal “supermax” prison officially known as United States Penitentiary, Administrative Maximum Facility, or colloquially as “ADX” this city.

ANSWER: **Florence**

[10] This former mathematician is serving 8 life sentences without the possibility of parole in ADX Florence. Since his targets included universities and airlines, he became known as the Unabomber.

ANSWER: Theodore “Ted” John **Kaczynski**

[10] This former FBI employee, whose 22-year period of spying for the USSR and Russia earned him 15 consecutive life sentences, is also at ADX Florence. He leaked the fact that Soviet general Dimitri Polyakov was a longtime US informant and compromised more CIA agents than any other mole in US history.

ANSWER: Robert Philip **Hanssen**

7. This play was based on an 1819 play of the same name in which Beatrice attempts to assassinate her father Francesco, the head of the title family. For 10 points each:

[10] Name this only full-length play by the author of *Jet of Blood*, which unsurprisingly closed after only 17 performances due to its strangeness.

ANSWER: The **Cenci** [or Les **Cenci**]

[10] The theory of the Theatre of Cruelty was outlined in this Artaud essay collection, which also includes “On the Balinese Theatre” and “No More Masterpieces”.

ANSWER: The **Theatre and Its Double** [or Le **Théâtre et son Double**]

[10] Another 20th century theatrical movement, Epic Theatre, was developed by this playwright of *The Resistible Rise of Arturo Ui* and *The Threepenny Opera*.

ANSWER: Bertolt **Brecht** [or Berthold Eugen **Brecht**]

8. The most distant object in the night sky that can be seen by an amateur telescope is the quasar Q1634+706 found in this constellation. For 10 points each:

[10] Name this constellation in the northern part of the sky, which is named for the Greek word for “dragon.”

ANSWER: **Draco**

[10] This star, the alpha star of Draco, was the north pole star about five thousand years ago. Due to the precession of the earth, Polaris is the current north pole star.

ANSWER: **Thuban**

[10] Albert George Wilson discovered the Draco galaxy, which is this specific type of galaxy. Fornax and Sculptor are two other examples of these faint, small galaxies that may have the largest ratio of dark to ordinary matter in the universe.

ANSWER: **dwarf spheroidal** galaxies

9. Under editor Whitelaw Reid, the *New York Tribune* first published these documents, many of which were written by Colonel William T. Pelton and Manton Marble. For 10 points each:

[10] Name these messages that contained attempts to bribe election officials in Florida and South Carolina to deliver those states' electoral votes to the Democratic Party.

ANSWER: **Cipher Dispatches** [or **Cipher Telegrams**]

[10] The Cipher Dispatches were written by supporters of this presidential candidate, who lost the controversial election of 1876 to Rutherford B. Hayes.

ANSWER: Samuel Jones **Tilden**

[10] Tilden was a member of this conservative Democratic faction, whose southern members were known as Redeemers. They advocated for low tariffs and maintaining the gold standard, and their leaders included Grover Cleveland and Alton B. Parker.

ANSWER: **Bourbon** Democrats

10. Answer the following about what happens when you die, if you're lucky enough to be a Zoroastrian, for 10 points each.

[10] Naturally, a dead guy is ritually washed in "gomez" or "nirang-taro," which is the urine of a white one of these creatures. Ishtar sends one of these from heaven at Gilgamesh for rejecting her sexual advances.

ANSWER: **bull**

[10] This term denotes the higher soul which descends to the world and implants itself in a Zoroastrian so he can fight evil. The earthly souls of ashavan, or those who have walked the path of good, will unite with these higher souls on death to become glorious guardian angels of light.

ANSWER: **fravashi** [or **fravarti**]

[10] Before you attempt to cross the Chinvat bridge in a hilarious Ninja Warrior-like competition that will determine your eternal salvation, this god judges you along with Saroosh and Rashnu. It's sometimes said that this god has 1,000 ears and 10,000 eyes, though in another tradition he shares the solar eye with Varuna.

ANSWER: **Mithra** [or **Mitra**; or **Mithras**; or **Meyr**; or **Nwar**]

11. This thinker argued that man's true life was eternal in his brief essay "The Eternal Life." For 10 points each:

[10] Name this German born psychologist better known for his pioneering work in the field of industrial and organizational psychology in such works as *Psychology and Industrial Efficiency*.

ANSWER: Hugo **Munsterberg**

[10] Hugo Munsterberg's last work was this 1916 work, a classic of film criticism which investigates the "inner" and "outer" development of "moving pictures" and its psychological impact on the viewer.

ANSWER: The **Photoplay**: A Psychological Study

[10] Hugo Munsterberg was a great admirer of this inventor and engineer who worked at Bethlehem Steel, and was known as the father of scientific management.

ANSWER: Frederick Winslow **Taylor**

12. In the five versions of this painting, the rocks surrounding the setting grow progressively taller, and increasingly menacing storm clouds gather overhead. For 10 points each:

[10] Name this canvas which depicts an isolated, rocky piece of land adorned with a small stand of cypress trees. Marie Berna to its artist that he add a small boat with a shrouded figure and an upright white coffin to its foreground.

ANSWER: The **Isle of the Dead**

[10] Arnold Böcklin's contrastive *The Isle of Life* depicts a similar island festooned with brightly colored plants and people, as well as three of these animals in the foreground. It is the largest animal in a pile of dead animals in Jan Fyt's depiction of *Diana with Her Hunting Dogs Beside Kill*.

ANSWER: **swans**

[10] Arnold Böcklin included a satyr and one of these diminutive female nature deities in a heroic landscape. John William Waterhouse made a painting in which these figures abduct Hylas.

ANSWER: **nymphs**

13. Each of the 24 stanzas in this poem, except for the last, ends with a variation of the line “The woods shall to me answer, and my Echo ring”. For 10 points each:

[10] Name this poem that begins by invoking the muses as “Ye learned sisters, which have oftentimes / Beene to me ayding, others to adorne”. It was originally included along with the sonnet cycle *Amoretti*.

ANSWER: “**Epithalamion**”

[10] “Epithalamion” was written by this poet for his marriage to Elizabeth Boyle. He wrote an unfinished epic that represents Elizabeth I as Gloriana, the title character.

ANSWER: Edmund **Spenser**

[10] This author of the poems “Philip Sparrow” and “Speke Parrot” was a tutor to Henry VIII, and he preceded Spenser as Poet Laureate of the U.K. In *The Shepheardes Calender*, Spenser reused this man’s character Colin Clout.

ANSWER: John **Skelton** [or John **Shelton**]

14. His nomination as cardinal by Anne of Austria in 1651 was approved by Innocent X, and he succeeded his uncle as archbishop of Paris in 1654, an office which Innocent refused to let him resign. For 10 points each:

[10] Name this descendant of a Florentine banking family, who led a faction of nobles during the Fronde, then retired to St. Denis to write his *Memoirs*.

ANSWER: Jean-Francois-Paul de **Gondi**, Cardinal de **Retz** [accept either underlined portion]

[10] For a time, Cardinal de Retz secured the exile of this chief minister of France who is the namesake of a blue butterfly, but more importantly succeeded Cardinal Richelieu in 1642.

ANSWER: Cardinal **Mazarin** [or Jules **Mazarin**; or Giulio Raimondo **Mazzarino**; or **Mazarini**]

[10] The first Fronde erupted after the Prince of Condé’s victory at this final major battle of the Thirty Years War, fought in Flanders in 1648. Riots broke out at Notre Dame in the midst of a Te Deum celebrating this defeat of the Spanish under Archduke Leopold Wilhelm.

ANSWER: Battle of **Lens**

15. This part’s inferior end contains the gastrocnemius and plantaris muscles, while its superior end contains the semi-membranosus muscle. For 10 points each:

[10] Name this part of the body colloquially known as the knee pit, one of whose bones is the tibia.

ANSWER: **popliteal fossa**

[10] This other bone contained in the popliteal fossa is this longest bone of the human body. It is also known as the thigh bone, and its lower extremity is just behind the patella.

ANSWER: **femur**

[10] The head of the femur meets with this surface of the pelvis to form the hip joint. This concave surface is formed by the three bones of the ischium, ilium, and the pubis.

ANSWER: **acetabulum**

16. This 102-stanza poem consists of a song of praise for King Hakon and his father-in-law Skuli Bardsson. For 10 points each:

[10] Name this section of the Prose Edda, whose name literally translates as “Enumeration of Metres”.

ANSWER: the **Háttatal**

[10] The first section of the Prose Edda is title for the “beguiling” of this king, who sets out to travel to Asgard but is magically sent to a mysterious palace, where he pretends to be named Gangleri..

ANSWER: **Gylfi** [or **Gylfe**]

[10] Gangleri performs this action to Har, Jafnhar, and Thridi throughout most of the *Gylfaginning*. Thor performed this action to Alvis all night, causing him to turn to stone.

ANSWER: asking **questions** [or obvious equivalents, such as **testing** their knowledge or **quizzing** them]

17. Answer the following about literary critic Edmund Wilson, for 10 points each.

[10] He traced the birth of socialism and Communism in this historical study, some of whose chapters consider the writings of Lenin and Trotsky and the influence of Henri de Saint-Simon.

ANSWER: **To the Finland Station**

[10] His book *Axel’s Castle* includes a chapter on this American author or *The Making of Americans*, who described Oakland with the line “there is no there there”. Her poem “Sacred Emily” contains the line “Rose is a rose is a rose is a rose.”

ANSWER: Gertrude **Stein**

[10] Edmund Wilson assembled this writer’s volume of essays *The Crack-Up* for publication. This writer dedicated his short story collection *All the Sad Young Men* to Ring Lardner.

ANSWER: F. Scott **Fitzgerald** [or Francis Scott Key **Fitzgerald**]

18. One of this composer's collections features ten pieces, the last of which is called "Scherzo-Valse." For 10 points each:
[10] Name that composer of the collection *Pieces Pittoresques*, who also composed operas such as *Gwendoline*, *Briseis*, and *Le roi malgré lui*. Vincent d'Indy was the dedicatee of his piece *Joyeuse marche*.

ANSWER: Emmanuel **Chabrier** [or Alexis Emmanuel **Chabrier**]

[10] Chabrier also composed a rhapsody for orchestra named after this country. Other pieces which evoke this country include a rhapsody by Maurice Ravel, a violin concerto dubbed a "symphony" by Edouard Lalo, and a capriccio by Nikolay Rimsky-Korsakov.

ANSWER: **Spain** [or **España**]

[10] This man wrote a biography of Chabrier. He may be better known for a piece commissioned by Wanda Landowska for harpsichord and orchestra, *Concert champetre*, or for his piano suite *Trois mouvements perpétuels*.

ANSWER: Francis **Poulenc** [or Francis Jean Marcel **Poulenc**]

19. The simplest member of this class of compounds is C₄H₄O. For 10 points each:

[10] Name this group of compounds characterized by a 5-membered ring containing one oxygen and four carbons. A fully hydrogenated example of these compounds is a polar aprotic solvent that's often complexed with boranes for use in hydroboration reactions.

ANSWER: **furans** [or tetrahydro**furan**; or **THF**]

[10] This reaction is commonly used to synthesize furans from 1,4-diketones under an acid catalysis. Similar heterocycles such as thiophenes and pyrroles can also be synthesized using this reaction.

ANSWER: **Paal-Knorr** synthesis

[10] The Paal-Knorr synthesis for pyrroles uses a primary example of this functional group, which can be synthesized from alkyl halides using potassium phthalimide via the Gabriel synthesis.

ANSWER: **amines**

20. Answer some things about military blunders of the Umayyad Caliphate, for 10 points each.

[10] Incidents like the "Day of Thirst" and "the Defile" occurred during Umayyad attempts to march toward this Transoxanian city, which later became the capital of Tamerlane's empire and the site of his Gur-e Amir tomb.

ANSWER: **Samarkand** [or **Samarqand**]

[10] This mysterious "Queen of the Berbers" led revolts in North Africa against the Umayyads in the 7th century AD, and was given a name meaning "witch," possibly for being Jewish. According to Ibn Khaldun, she caused no end of trouble for the general Hasan ibn al-Nu'man, but was eventually killed by him.

ANSWER: **Dihya** [or **Kahina**; or **Tihya**; or **Tajrawt**; or **Daya**; or **Damya**]

[10] In this 750 AD battle, an Umayyad army under Marwan II was defeated by an insurgent force of Abbasids under as-Saffah at a tributary of the Tigris. The battle at this river ended the Umayyad dynasty.

ANSWER: Battle of the **Zab** River [or the **Great Zab**]