



ACADEMIC COMPETITION FEDERATION

2015 ACF NATIONALS
PACKET BY VCU AND BERKELEY

TOSSUPS

1. If a set of expressions has this property in a ring P , then there exists a tuple of rational numbers that can be substituted into the expressions which will also have this property in P , by a theorem of David Hilbert. A function that has a positive leading coefficient, coprime coefficients, and this property will produce infinitely many primes by the Bunyakovsky conjecture. By Gauss's lemma, a function that has this property with respect to the integers will have it over the rationals as well. For a collection of coefficients, if there exists a number p such that p doesn't divide the leading coefficient but it divides the rest, and p squared does not divide the constant term, then the polynomial will have this property by Eisenstein's criterion. The quadratic polynomial generated by factoring will have this property by the fundamental theorem of algebra. For 10 points, name this property of a polynomial, such that it can't be nontrivially factored over a field.

ANSWER: polynomial irreducibility [or word forms; do NOT accept "reducible" or its word forms.]

2. A character in this novel gets in trouble for putting up double-entendre signs in a hospital, such as one reading "Sodom and Gonorrhea" above the venereal ward. The dying words of a character in this novel are reported to sound like "the last grin", though another character later realizes it was a reference to the last of three green bottles, which originally appear in the house of Mad Medico. A baby girl is given a male name that means "may the path never close," Amaechina, at a naming ceremony in this novel. Protests regarding water restrictions in Abazon open this novel, in which a character is nicknamed "Samsonite" because he uses a stapler to torture people. One of its protagonists is shot after giving a speech at the University of Bassa, after which another protagonist is shot while trying to prevent the rape of Adamma. Beatrice Okoh survives the murders of Ikem Osodi and Chris Oriko during the rule of Sam, the dictator of Kangan, in, for 10 points, which Chinua Achebe novel?

ANSWER: Anthills of the Savannah

3. This text defines a state of "inclosing reserve" that may manifest itself in a tyrant that needs a confidant who will be killed after he is used. In examining how the "lack of possibility" contributes to the title phenomenon, it compares a foolish determinist to King Midas and the fatalist to a man who has no possibility to breathe. This book's second portion considers the Socratic definition of ignorance to ask whether men are aware of the title phenomenon. Its first part defines the human being as "spirit" and notes that "the self is not the relation but the relation's relating to itself." The title of this work comes from a scene in which Jesus speaks to Lazarus after he is raised from the dead. The commentator in this work suggests that Christians enter a state of sin since they have not aligned themselves with God. For 10 points, name this tract written by Anti-Climacus, a.k.a. Kierkegaard, that equates despair with the title condition.

ANSWER: The Sickness Unto Death [or Sygdommen til Døden]

4. This man was sent on a diplomatic trip with Bishop Charles McIlvaine and Archbishop John Joseph Hughes to secure European support in the wake of the Trent Affair. He chronicled that trip in his book *Letters from Europe and the West Indies*. He was known as "The Wizard of the Lobby," but his rival John Hubbard may have been the first to dub him "The Dictator" while trying to bankrupt his enterprise, the *Agriculturalist*. This man coined the disdainful nickname "Sweet Sandy Whiskers" for Martin van Buren, and the name for a group originally called the Holy Alliance, which split into the conservative Hunkers and the radical Barnburners. This man's opponents, whom he called the Albany Regency, assailed him as he edited the country's largest Anti-Masonic newspaper, the *Enquirer*. For 10 points, name this close friend of William Seward, who was a publishing rival of Horace Greeley and a Whig political boss in New York.

ANSWER: Thurlow Weed

5. At the upper right of this painting, a soldier appears above an overturned chair and a torn prayer book. At the bottom of this painting, one can make out a mother fleeing with her child; above her is the Wandering Jew, who is dressed in a blue cap, carries a white sack, and wears green clothing. The unusual iconography of this painting include the use of two halos - one surrounds the central figure's head, and one surrounds the five lit and one unlit candles below him. Other unusual symbols that the artist chose include the substitution of a prayer shawl for a loincloth and the use of a head cloth instead of the crown of thorns. To the left of this painting's central action is a boat looking for safety, and to its top right is a burning synagogue. For 10 points, name this depiction of the death of Jesus by Marc Chagall, which is dominated by the title color.

ANSWER: The White Crucifixion

6. A hexamer of copper hydride bonded to this compound is known as Stryker's reagent. This compound is the most famous member of a class of compounds for which the Tolman cone angle was developed to describe. Two equivalents of this compound, a chlorine atom, and carbon monoxide bond to iridium in Vaska's complex. It can be used to reduce azides to amines via hydrolysis in one reaction and is used alongside diethyl azodicarboxylate to convert alcohols into various functional groups in another reaction. Those reactions are named for Staudinger and Mitsunobu. This compound is converted to its oxide via the elimination of an oxaphosphetane intermediate in a reaction where it reacts with a carbonyl to form a phosphonium ylide, which is then converted to an alkene. For 10 points, name this organophosphorus compound used in the Wittig reaction.

ANSWER: triphenylphosphine [or PPh₃; or triphenylphosphane; or TPP]

7. In accordance with a Delphic oracle, one figure by this name was invited to rule over a tribe called the Dolonci because he showed hospitality to them in their travels. As their ruler, that figure constructed a wall from Cardia to Pactya to repel their enemies, the Apsinthians. A second figure by this same name married Hegesipyla, the daughter of Olorus, to tighten his hold on land he inherited when his brother Stesagoras had his head split open by an axe. This man's daughter Elpinice may have paid his fines off, after he was charged with treason for a failed expedition against Paros. That man of this name ruled as tyrant of the Thracian Chersonese, then rose to fame for conquering Lemnos and Imbros. That father of Cimon the Younger is best remembered for his victory at a battle which saw the death of the overall commander Callimachus, and the heroism of Pheidippides. For 10 points, give the name shared by that Athenian general who defeated the Persians at Marathon.

ANSWER: Miltiades [or Miltiades the Elder; or Miltiades the Younger]

8. A composition by this man calls for two bassoons, two contrabassoons, and four trombones, but only uses them for a few bars in its first movement, which is marked "Sostenuto tranquillo ma cantabile". Another work by this composer asks the chorus to repeat only the words 'Domine Deus Noster' in its first ten sections. In the first movement of a composition by this man, a 24-bar theme forms the basis of a canon that opens in two parts in the basses and adds a new part every 25 measures until it becomes an eight-part canon. Interest in this composer of an Opus 44 *Miserere* was revived by the 1992 publication of a platinum-selling recording of one of his works featuring the soloist Dawn Upshaw. The three movements of that work are all marked *Lento*, and feature a soprano singing a Silesian folk song, a 15th-century lament of Mary, and a text written on the wall of a Gestapo cell. For 10 points, name this 20th-century Polish composer of the *Symphony of Sorrowful Songs*.

ANSWER: Henryk Mikoł Gorecki

9. This poem refers to the mystical ladder of divine love presented in the *Dark Night of the Soul* in its late mention of "the figure of ten stairs". Its fourth section asks "Will the sunflower turn to us, will the clematis / Stray down, bend to us[?]" and describes a time when "the light is still / At the still point of the turning world". This poem describes the "desiccation", "evacuation", and "inoperancy" of the worlds of "sense", "fancy", and "spirit" that occur after a descent into "the world of perpetual solitude". In its first section, a bird tells a poet to "round the corner" into the "first world," warning the poet that "humankind cannot bear much reality" as it guides them through a place whose "leaves were full of children" laughing and hiding. This poem features the recurring image of a rose-garden at a house in the Cotswolds, and begins with the lines "Time present and time past / Are both perhaps present in time future". For 10 points, name this poem, the first of T.S. Eliot's *Four Quartets*.

ANSWER: "Burnt Norton" [prompt on "the Four Quartets"]

10. Under this government, a celebration known as the Double Centenary Exposition was held, and in its honor, a marble mosaic “windrose” was donated from South Africa. The church-controlled Radio Renaissance became this government’s official organ, and its constitution was allegedly based on the encyclical *Rerum Novarum*, as decreed by its lawmaking body, the Corporative National Assembly. During its last years, it waged the Ultramar War, or Overseas War, which contributed to it being replaced by the PREC. This government’s agreement with the Vatican See was known as the Concordat of 1940. It rose to power by replacing the Ditadura Nacional established by Oscar Carmona, and under this government, the PIDE operated as a secret police force, until the Armed Forces Movement dispatched it by way of the Carnation Revolution. For 10 points, name this government in place from 1933 to 1974, starting with the rise of Antonio Salazar as dictator in Portugal.

ANSWER: Estado Novo [or New State; or Second Republic of Portugal; prompt on less specific answers, such as “Portugal” or “Salazar’s Portuguese state”]

11. This structure is notoriously called a “Trojan Horse” in Sanford Kwinter’s book *Requiem: For the City at the End of the Millennium*. To help engineer this masterpiece, 9-ton, cast-steel “gerberettes” were used to support its long trusses. Along with a building in New York City, Nam June Paik broadcasted *Good Morning, Mr. Orwell* from this building. Jean Tinguely’s kinetic sculptures of a firebird and a fox can be found at Stravinsky Fountain, which is nearby this building that was inspired by Archigram’s “Plug-in City.” This building, which houses a library, a medical center, and an art museum, contains no internal elevators. Instead, a large escalator attached to the front façade moves people along its seven floors. Giant blue tubes carry oxygen into this building, which gets its water from green tubes and electricity from yellow tubes. For 10 points, name this Parisian building that was designed by Richard Rogers and Renzo Piano, and named for a Prime Minister of France.

ANSWER: Pompidou Center [or Centre Georges Pompidou; or Centre Pompidou]

12. The QED one-loop correction to the electron’s value for this quantity equals the fine structure constant divided by 2 pi. QCD predicts that the ratio of this quantity for the proton to this quantity for the neutron equals minus three halves. For an electron, QED predicts this quantity’s classical version to be multiplied by a factor of 2.002, an improvement in accuracy over the factor of 2 predicted by the Dirac equation. Along with the flux and the longitudinal invariant, this quantity is the first adiabatic invariant for a gyrating charged particle. This value for an object divided by an object’s angular momentum gives the gyromagnetic ratio, and that aforementioned factor of 2.002 which multiplies this quantity’s classical version in quantum mechanics is the g-factor. The electron’s value for this quantity is a physical constant named for Bohr. For 10 points, name this quantity equal to the product of the area of a current loop and the current going through the loop, which is symbolized mu, like its electric counterpart.

ANSWER: magnetic dipole moment [prompt on “mu”]

13. This character refers to absinthe as “the glaucous witch,” or “la sorciere glauque,” in one of his many slips into French. The narrator decides that either “hungry” or “dim” is “le mot juste” for this character, who claims to read Shelley in domino rooms to break up his “evenness.” This character writes a poem that describes the sounds of “cymbals rouged with rust” and ends “THOU HAST NOT BEEN NOR ART!” *Negations* and *Fungoids* are among the books by this character, a self-described “Catholic Diabolist” who is first encountered during the narrator’s dinner with the painter Rothenstein. This character is horrified to find the words “immajnarî karrakter” in a book by T.K. Nupton after a “Mephistophelean man” sends him to the British Museum’s Reading Room on June 3, 1997, where he attempts to look himself up. For 10 points, name this failed author who makes a deal with the devil only to learn that, in the future, he is only remembered as the title character of a story by Max Beerbohm.

ANSWER: Enoch Soames [accept either underlined portion]

14. The Massachusetts-born Episcopalian William Reed Huntington added to this series by providing a piece titled for an “American point of view.” Four pieces towards the end of this collection are entitled “Catena Patrum,” while two others examine the doctrine of John Cosin. A small number of works in this collection were written by Hurrell Froude, but he died of tuberculosis before it was completed. The final piece in this collection caused a firestorm by arguing that the Thirty Nine Articles were compatible with the Council of Trent and general Catholic practice. Written over a period from 1833 to 1841, the more notable authors of this collection included John Keble and Edward Pusey, and its title became a synonym for the movement that produced it. For 10 points, name this series of 90 works about the theology of the Oxford Movement, many written by John Henry Newman, which caused his movement to be dubbed the Tractarians.

ANSWER: Tracts for the Times [prompt on “The Tracts”]

15. Early rulers of this dynasty were often advised by members of the Bunnag family, a Persian house descended from Sheikh Ahmad, starting with Dis Bunnag, one of the two sons of Akka Mahasena. A member of this dynasty appointed Gustave Rolin-Jaequemyns as his advisor and was embarrassed by the Front Palace Crisis, in which his court failed to put out a fire at the eponymous complex. This dynasty's first ruler solidified power by winning the Nine Armies War, and it allowed free trade within its territory by agreeing to the Bowring Treaty, which replaced the Burney Treaty. This dynasty included rulers like Chulalongkorn and his son Vajiravudh (vah-ji-ravoot), but it's better known for a ruler who offered elephants as a gift to James Buchanan and was tutored by Anna Leonowens. For 10 points, name this royal house that included Mongkut and several other Ramas, and still rules today in Thailand.

ANSWER: Chakri Dynasty [or Ratchawong Chakkri]

16. This author used phrases like “where the light of the senses / in lofty flames did rise” and “where to the flow of youth / God still showed himself” to describe the past in a poem that asks “What in this world should we all do with love and with faith?” This author's brother Bernhard is referred to as “the Angel in the House” in a novel that depicts his time living with Coelestin Just. He outlined a universal study of science and poetry called encyclopedistics in his “notes for an encyclopedia,” *Das Allgemeine Brouillon*. The *Athenaeum* published a collection by this author whose second section opens by asking “Must the morning always return? Will the despotism of the earthly never cease?” That collection by this man ends with the poem “Longing for Death.” He stars in Penelope Fitzgerald's final novel, which depicts his love for Sophie von Kuhn and his obsession with the “blue flower.” For 10 points, name this early German romantic poet, the author of *Hymns to the Night*.

ANSWER: Novalis [or Friedrich von Hardenberg; or Georg Philipp Friedrich Freiherr von Hardenberg]

17. In *The Metamorphoses*, this figure states that she has often read the names on empty tombs while giving an impassioned speech in which she reminds her husband that his father-in-law controls winds that may create deadly red lightning in the sky. This woman's story in *The Metamorphoses* features a digression in which Iris enters the cave from which Lethe springs to ask Morpheus to transform into an ethereal version of this woman's husband. This Queen of Trachis is unable to convince her husband to abandon his sea journey to the oracle of Delphi, causing her to incessantly worry about his doomed fate. After Zeus strikes down this character's husband for uxoriously calling her “Hera” during bouts of lovemaking, she is turned into a kingfisher. For 10 points, name this wife of Ceyx [“see-ix”] who gives her name to an English word referring to an idyllic past.

ANSWER: Alcyone [or Halkyon; or Halcyon]

18. One protein involved in this process contains an arginine-rich bridge helix within its REC lobe. 11 proteins in this process form a seahorse-shaped complex called CASCADE. The aforementioned protein involved in this process carries out its activity using its HNH and RuvC domains. The nucleotide sequence NGG must be present in order for this process to occur—that sequence is called a PAM. In this process, a tracrRNA base pairs with a crRNA to form an sgRNA. In this process, a guide RNA guides a nuclease to a protospacer motif, then a double-strand break is created in the foreign DNA by the cas9 nuclease. Genome editing is commonly performed using, for 10 points, what form of adaptive prokaryotic immunity that uses repeated DNA sequences to silence the genes of attackers?

ANSWER: CRISPR/cas9 [or clustered regularly interspaced short palindromic repeats/cas9]

19. A “balanced path” of a certain quantity in this formalism is achieved with assumptions that ensure its predictions correspond to Nicholas Kaldor's stylized facts. When this formalism's central equation satisfies Euler's homogeneity theorem, there is no need to specify the ownership of firms since their profit in the long run is zero. Mankiw, Romer, and Weil proposed augmenting this formalism with a distinction between human and physical capital. An extension of this formalism that adds the assumptions of Walrasian equilibrium and endogenous household savings is named for Ramsey, Cass, and Koopmans. Equilibrium in this formalism is achieved when gross investment equals depreciation. This formalism was intended to critique the Harrod-Domar model and uses a neoclassical production function with exogenous savings. For 10 points, name this growth model sometimes co-named for Trevor Swan and sometimes named just for an MIT economist.

ANSWER: Solow-Swan-Cass-Koopmans model [or Solow in combination with any of the other names; or “neo-classical growth” model until “endogenous” is read]

20. James Jackson Storrow headed a commission charged with investigating grievances prior to this event. Legislation put forth by Albert Pillsbury was a major impetus for this event, which Lawrence Lowell tried to mitigate by asking for volunteer students. The attempts of Andrew James Peters to resolve it peacefully were mostly unsuccessful, after it resulted when Edwin Upton Curtis issued a General Order prohibiting the central group from “serving two masters.” Francis Russell wrote *A City in Terror* about this event, during which participants gathered at Scollay Square until scattered by a threat of live ammunition. Commissioner Curtis was supported during this incident by Governor Calvin Coolidge, who issued a response to Samuel Gompers declaring that “there is no right to strike against the public safety.” For 10 points, name this 1919 event which saw law enforcement personnel in a city in Massachusetts refuse to work.

ANSWER: **Boston Police Strike** of 1919 [or obvious equivalents that refer to **striking**, **Boston**, and **police** officers; prompt on partial answers]

TIEBREAKER

21. The founder of this dynasty had all 20,000 male inhabitants of Kerman blinded and their eyeballs poured out into a pile in front of him. This dynasty granted a concession to G.F. Talbot that established a monopoly over production of tobacco, leading to widespread protests. A minister hired by this dynasty, Morgan Shuster, was forced to resign and one of its prime ministers, Amir Kabir, was forced into exile by Nasser-e-Din after founding a university at Dar ul-Fanun. This dynasty underwent the Constitutional Revolution and entered the Treaties of Gulistan and Turkmenchai. Its early rulers included Fath Ali and Agha Muhammad Khan, who founded this line by overthrowing the Afsharid and Zand Dynasties. This dynasty was split into zones of influence by the Anglo-Russian Entente of 1907, and dissolved with the rise of Reza Shah Pahlavi. For 10 points, name this dynasty which ruled Persia from 1785 to 1925.

ANSWER: **Qajar** dynasty

BONUSES

1. Modern editions of this book indicate that the author was given the name “Flaming Rainbow,” and are annotated by the transcripts of Raymond DeMallie. For 10 points each:

[10] Name this 1932 book by John G. Neihardt, which tells the story of a medicine man belonging to the Oglala Sioux tribe, and concludes with a depressing account of Wounded Knee.

ANSWER: Black Elk Speaks [or Black Elk Speaks: Being the Life Story of a Holy Man of the Oglala Sioux as Told to John G. Neihardt (Flaming Rainbow)]

[10] This psychologist, who got Neihardt’s book translated into German, wrote about his own encounter with chief Mountain Lake in his autobiography *Memories, Dreams, Reflections*. He coined the term “collective unconscious” and wrote *Psychological Types*.

ANSWER: Carl Gustav Jung

[10] This Swiss-American anthropologist is best-known for his fictional account of Pueblo tricksters entitled *The Delight Makers*, though he also took trips to Peru and Bolivia chronicled in *The Islands of Titicaca and Koati*.

ANSWER: Adolph Bandelier

2. Answer the following about early characters in Norse mythology, for 10 points each:

[10] Odin and his brothers Vili and Ve teamed up to kill this primordial being, then created the world and the seas from his body and blood.

ANSWER: Ymir [or Aurgelmir; or Brimir; or Bláinn]

[10] Odin, Vili and Ve are the sons of this member of the Aesir and Bestla, a frost giant. His father Buri was licked free by Audhumla.

ANSWER: Borr

[10] This frost giant, a grandson of Ymir, and his wife are the only ones to survive the flood caused by Ymir’s blood, and is thus the progenitor of all later frost giants.

ANSWER: Bergelmir

3. While journeying to see his friend, the protagonist of this novel is told that his estate has been sold to the title character, Lord Fitz-Owen. For 10 points each:

[10] Name this novel by Clara Reeve that focuses on Sir Philip Harclay’s visit to the estate of his friend Lord Lovel, ending with Philip successfully defeating Walter Lovel, who had earlier murdered his cousin.

ANSWER: The Old English Baron

[10] Reeve described *The Old English Baron* as a “literary offspring of *The Castle of Otranto*”, a work by Horace Walpole in this genre of English literature. Matthew Lewis’s *The Monk* is another work in this genre.

ANSWER: Gothic literature

[10] In this Gothic novel, a jinn called the Giaour forces the title Abbasid caliph to sacrifice fifty of his empire’s children as part of a plan to guide him to the “palace of fire” in order to serve his master, Eblis.

ANSWER: Vathek [or Vathek, an Arabian Tale; or The History of the Caliph Vathek; by William Beckford]

4. The second story in this text is about a man who fashions a wax crocodile, which comes to life on contact with water, and eats the man who slept with his wife. For 10 points:

[10] Name this ancient document discovered by a namesake British explorer, which consists of five tales about magicians. In another of its stories, the heroine Rededjet gives birth to three future kings, by the prophecy of Dedi.

ANSWER: Westcar Papyrus

[10] All stories in the Westcar Papyrus are told by the sons of this Fourth Dynasty Pharaoh, who commissioned the Great Pyramid at Giza after succeeding his father Sneferu.

ANSWER: Khufu [or Cheops; or Kheops; or Khnum-Khufu; or Suphis; or Saurid; or Salhuk; or Sofe]

[10] The Westcar Papyrus was likely written in the Middle Kingdom, which was founded by this powerful 11th Dynasty pharaoh. This son of Intef III installed governors in both upper and lower Egypt to control the power of nomarchs, ending the First Intermediate Period.

ANSWER: Nebhepetre Mentuhotep II [prompt on “Mentuhotep”]

5. One of these theorems true for the steady-state case was proven by Gallavotti and Cohen, while another one of these theorems named for Crooks can be used to prove the Jarzynski equality. For 10 points each:

[10] Name these theorems, which state that the ratio of the probability of some form of work or entropy production to the probability of the reverse process is proportional to e raised to a constant times the amount of work or entropy produced.

ANSWER: fluctuation theorems [do NOT accept "fluctuation-dissipation (theorems)"]

[10] The fluctuation theorems mathematically describe the statistical nature of this statement, which states that irreversible processes generate entropy.

ANSWER: second law of thermodynamics

[10] Give your answer in terms of dQ and T . The second law of thermodynamics can be described by the Clausius inequality, which states that for a heat differential dQ and temperature T , the integral over a cyclic process of this function of dQ and T must be less than or equal to zero.

ANSWER: dQ divided by T [or dQ over T]

6. This man was director of education in the Kingdom of Tonga for three years. For 10 points each:

[10] Name this structural-functionalist anthropologist who wrote *The Andaman Islanders*.

ANSWER: Alfred Reginald Radcliffe-Brown

[10] Alfred Radcliffe-Brown defines symmetrical and asymmetrical versions of this sort of bond, in which one party is "required to take no offence." This type of bond titles the fourth chapter of *Structure and Function in Primitive Society*.

ANSWER: joking relationship [or "On Joking Relationships"]

[10] In "Anxiety and Ritual," this thinker adapted Radcliffe-Brown's theory of magic for behavioral studies. He examined settlement patterns in *English Villagers of the Thirteenth Century* and proposed a theory of stratification in *Social Behavior*.

ANSWER: George Casper Homans

7. A monk named Gjoni describes a man being encased in the title entity in a loosely interpreted version of his country's tale of the Rozafa Castle called *The Three-Arched Bridge*. For 10 points each:

[10] Name this author who critiqued his home country in a novel in which Mark-Alem is placed at odds with his family, the Quiprili, when the sultan forces him to work at the title *Palace of Dreams*.

ANSWER: Ismail Kadare

[10] This first novel by Kadare is one of his most highly regarded. Its Italian title character is tasked with finding the remains of soldiers from his country who died in Albania in World War II.

ANSWER: The General of the Dead Army [or Gjenerali i Ushtrise se vdekur]

[10] The David Bellos translation of a Kadare novel with this title was published under the title *The Siege*. In a Kafka novel of this title, the land surveyor K. struggles to enter the title edifice.

ANSWER: The Castle [or Keshjtjella; or Das Schloss]

8. The title character of this ballet has a dream in which the knights Jean de Brienne and Abderakhman duel each other. For 10 points each:

[10] Name this ballet inspired by Hungarian tradition, in which the title character marries Jean de Brienne.

ANSWER: Raymonda

[10] *Raymonda* was choreographed by this man, who also choreographed *La Bayadere*. He frequently collaborated with Cesare Pugni on other ballets, such as *The Little Humpbacked Horse*.

ANSWER: Marius Petipa

[10] Marius Petipa also choreographed the ballet *Coppélia*, whose music was written by this composer. He also composed the music to *Lakmé*.

ANSWER: Léo Delibes [or Clément Philibert Léo Delibes]

9. This event was carried out by a group known as the “Junta de los Ocho” led by Pablo Rodriguez, and in its wake, the country was ruled by a council of five governors known as the Pentarchy. For 10 points each:

[10] Name this coup d’état which originated at a base called Camp Columbia, and was supported by a group of civilians under Sergio Carbó.

ANSWER: Revolt of the Sergeants

[10] Gerardo Machado, who was ousted in the revolt, tried to gain support by appealing to his family’s service in this conflict which began in 1868 when sugar mill owner Carlos Manuel de Cespedes proclaimed independence from Spain. It was followed by a shorter conflict called the Little War.

ANSWER: Ten Years War [prompt on “the Great War” or “the Big War”]

[10] After deposition of Machado, Fulgencio Batista ruled Cuba until overthrown by this man in the 26th of July Movement. He ended a 1953 speech by declaring “History Will Absolve Me.”

ANSWER: Fidel Alejandro Castro Ruz

10. This reaction begins when two namesake particles react and form a deuteron. For 10 points each:

[10] Name this fusion reaction that is the primary method of generating light and heat in the Sun.

ANSWER: proton-proton chain [or pp chain; or p+-p+ chain; or obvious equivalents in place of “chain”, such as “reaction” or “cycle”]

[10] The problem of the short time span of diprotons was resolved by this physicist, who proposed an irreversible mechanism of beta-decay in the proton-proton cycle. With Gerry Brown, he names a model of supernova collapse.

ANSWER: Hans Bethe [or Hans Albrecht Bethe]

[10] In the proton-proton II branch, atoms of this isotope collide with hydrogen to produce helium atoms, producing energy. It remains unburned in Brown dwarfs.

ANSWER: lithium-7 isotopes [prompt on “lithium”]

11. Early, smaller examples of these structures were found in meditation halls known as chaitya. For 10 points each:

[10] Name these dome structures which are guarded by Torana gates, and house sacred relics of the Buddha. They include the Great one at Sanchi, India and 72 of them at Borobudur which contain Buddha statues.

ANSWER: stupas [or chōten; or thūpa]

[10] These female fertility figures are often used to decorate the entrances and gates to stupas. Their full figures are depicted holding branches as part of the group of salabhanjika figures. In myth, they serve the god of wealth Kubera in his Alaka kingdom.

ANSWER: yakshinis [or yakshis; or yaksha even though that’s the male variant because they performed similar functions]

[10] The salabhanjika figure imitates the posture of Queen Maya, the mother of Siddhartha Gautama. She took that posture shortly after giving birth to the Buddha while grasping the branch of a shala tree in this Nepalese city.

ANSWER: Lumbini, Nepal

12. In this novel, Crazy Bow Adair is arrested and the theology student Herald Newton Day goes abroad after he is caught copulating with a goat which prevents him from marrying the protagonist. For 10 points each:

[10] Name this novel in which the girl Bita Plant returns to her birth country and marries Jubban after being adopted by white missionaries and sent to study in England for seven years.

ANSWER: Banana Bottom

[10] This poem by the author of *Banana Bottom* enjoins the speaker’s “Kinsmen” to “for their thousand blows deal one deathblow” and asks “What though before us lies the open grave?”

ANSWER: “If We Must Die”

[10] *Banana Bottom* and “If We Must Die” are by this Jamaican-American editor of *The Liberator*, a major figure of the Harlem Renaissance who also wrote *Home to Harlem*.

ANSWER: Claude McKay [or Festus Claudius McKay]

13. This partner of Richard Arkwright was a superintendent of Jedediah Strutt's cotton mill in the English town of Belper. For 10 points each:

[10] Name this man who then secretly emigrated to America and became known as the "father of the American Industrial Revolution" by organizing the textile industry, enlisting families to work in his mills.

ANSWER: Samuel Slater

[10] Slater created a textile-making system known by the name of this US state, which was the site of the Gaspee Affair.

ANSWER: Rhode Island

[10] Francis Lowell improved on Slater's system partly by using the finances of this man. This man's nephew of the same exact name was a publisher of the Los Angeles Times during the Spanish-American War who coined the phrase "you are either with me, or against me" when the LA Times building was bombed in 1910.

ANSWER: Harrison Gray Otis

14. An *ansa*-zirconium metallocene Ziegler-Natta catalyst will polymerize propylene to this orientation. For 10 points each:

[10] Name this type of polymer in which most of the side groups are on the same side of the backbone.

ANSWER: isotactic

[10] Tacticity describes the general trend of this kind of isomerism at each polymer backbone atom. Molecules displaying this type of isomerism have the same structure, but their atoms differ in orientation in three-dimensional space.

ANSWER: stereoisomerism

[10] Molecules displaying axial chirality, such as BINAP, can display this form of stereoisomerism, in which steric effects prevent a molecule from rotating freely about one of its bonds.

ANSWER: atropisomerism

15. The meeting scene in this room, which is just above the fireplace, depicts the family dwarf. For 10 points each:

[10] Name this room, in the Palazzo Ducale, which is no longer thought to have been a bridal chamber, despite its name. A bunch of *putti* look down at the viewer in this room's oculus painting.

ANSWER: Camera degli Sposi [or the Camera Picta]

[10] The paintings in the Camera degli Sposi were made by this Italian painter, known for *The Dead Christ*.

ANSWER: Andrea Mantegna

[10] Mantua also contains this other estate that was also built for Federico Gonzaga. In its *Sala dei Giganti*, Giulio Romano painted *The Fall of the Giants*.

ANSWER: Palazzo del Te [or the Palazzo Te]

16. Michael Dummett concluded that this argument was invalid in "Metaphysical Necessity." For 10 points each:

[10] Name this argument, introduced by St. Anselm, which proves the existence of God, since nothing greater than him can be conceived. It actually defeats itself since you can just conceive of a better argument than this one.

ANSWER: ontological argument

[10] This philosopher from the school of Isfahan also used the ontological argument to prove the existence of God. The thought of this medieval Iranian philosopher is collected in *The Four Journeys*.

ANSWER: Mulla Sadra [or Sadr al-Din Muhammad Shirazi; or Ibrahim Shirazi; or Yahya Qawami Shirazi; or Sadr al-Muta'allimin]

[10] Gaunilo of Marmoutiers's *In Defense of the Fool* is an attack on the ontological argument. His text refutes the ontological argument by having readers imagine a lost one of these things.

ANSWER: islands [prompt on "lands"]

17. Targets of this event included its namesake, who was nicknamed "The Harpist," and General Kuno Graf von Moltke, who was called "Sweetie." For 10 points each:

[10] Name this 1907 affair centering on accusations by a journalist about the homosexuality of members of Kaiser Wilhelm II's inner circle.

ANSWER: Harden-Eulenburg Affair

[10] Another headache during Wilhelm II's reign was the diplomatic firestorm that ensued when he sent a telegram congratulating Paul Kruger for repelling this aborted raid on the Transvaal Republic planned by Cecil Rhodes.

ANSWER: Jameson Raid

[10] Wilhelm II's interests were set against the Entente Cordiale and the United States after the 1906 Algeiras Conference, so he and this Secretary of State for the Navy passed a series of Naval Laws in an attempt to catch up with British naval power.

ANSWER: Grand Admiral Alfred von Tirpitz

18. Identify the following works of 19th-century Latin American literature, for 10 points each.

[10] The protagonist of this two-part gaucho epic by Jose Hernandez has a night-long singing duel with a black singer and escapes from captivity after the plague death of his friend Sergeant Cruz.

ANSWER: Martin Fierro

[10] Bento Santiago is inspired by a Shakespeare play to claim that his son Ezekiel was fathered by his friend Escobar, who supposedly had an affair with Bento's wife Capitu, in this 1899 novel.

ANSWER: Dom Casmurro [by Joaquim Machado de Assis]

[10] This Jose Fernandez de Lizardi novel is considered to be the first novel written and published in Latin America. It takes its name from the nickname given to its protagonist, Pedro Sarmiento.

ANSWER: The Mangy Parrot [or El Periquillo Sarmiento; or The Itchy Parrot; prompt on "El Periquillo"]

19. An incomplete 1896 symphony dedicated "to the beloved god" calls for four of its eight horn players to double on these instruments, which made their first symphonic appearance in the C-sharp minor *adagio* second movement of that composer's seventh symphony. For 10 points each:

[10] Identify these brass instruments that were originally developed to provide the right tone for an 1869 opera's "Valhalla" motif.

ANSWER: Wagner tubas [or Bayreuth tubas; or Wagner horns; or Wagnertuben; do NOT prompt on "tubas" or "horns"]

[10] The aforementioned symphonies were composed by this Austrian who constantly revised his works, perhaps most famously adding a finale movement titled *Volksfest* to his "Romantic" fourth symphony.

ANSWER: Anton Bruckner [or Josef Anton Bruckner]

[10] Bruckner's C major setting of this hymn is sometimes added to his unfinished ninth symphony. Jean-Baptiste Lully smashed his foot with his baton while conducting his own setting of this hymn.

ANSWER: Te Deum

20. These things occur approximately once in every 300 nucleotides, and they must be present in at least 1% of the human population. For 10 points each:

[10] Name these variations in the human genome, which are a difference in one nucleotide in a sequence.

ANSWER: SNPs ("snips") [or single nucleotide polymorphisms]

[10] In this technique used to analyze DNA, restriction enzymes cut target sites to create DNA fragments, which are then separated using either gel electrophoresis or a Southern blot.

ANSWER: RFLP analysis ("rif-lip") [or restriction fragment length polymorphism]

[10] In lipid polymorphism, phospholipids tend to adopt one of three phases: micellar, bilayer, or hexagonal shape. This phase is especially preferred in more acidic conditions.

ANSWER: hexagonal II [or H II]