1. When its initial distribution is seeded by the cosmic microwave background, it gives an explanation for large-scale structure formation. Gravitational lensing of the Bullet cluster provides evidence for it. The current (*) cosmological standard model favors a “cold” variety of it, and it was first proposed by Fritz Zwicky based on his study of rotational velocities of galaxies. For 10 points— name this substance, candidates for which include WIMPs, which is named for its lack of electromagnetic interactions.
answer: dark matter (do not accept or prompt on “dark energy”)

2. In one of this man's works, the "dice of drowned men's bones" "bequeath an embassy." Someone sings "Stamboul Rose" in another of his poems, which beings "I met a man in South Street." In addition to "At (*) Melville's Tomb" and "Cutty Sark," his other poems written on commission for Otto Kahn include "Quaker Hill," "The River," and "Cape Hatteras." For 10 points— name this suicidal author of The Bridge.
answer: Hart Crane (prompt on Crane)

3. Noel Devine scored two touchdowns in this game after replacing the injured Steve Slaton in the first quarter. The winners sacked Sam Bradford three times and were led by (*) interim coach Bill Stewart and quarterback Pat White over a Big 12 team who lost this game for the second straight year, after 2007's upset by Boise State. For 10 points— name this bowl game in which West Virginia defeated Oklahoma in Glendale, Arizona.
answer: 2008 Fiesta Bowl

4. At his death, he was preparing to help Russia put down Polish revolt and revise his major work. In that work, he emphasized the need to account for metaphorical "friction" in planning and defined his subject as the (*) "continuation of state policy." His ideas were formed as a student of Gerhard von Scharnhorst at the Institute for Young Officers. For 10 points— name this "total war" advocate, the author of On War.
answer: Carl von Clausewitz

5. The strings and piccolo play a children's song as a march to introduce the villain of this work, who falls over while trying to snatch some grapes and is later drenched in a stream. It follows a buffoonish (*) corregidor's attempt to cuckold a miller, and this ballet was adapted from a novella by Pedro de Alarcón. For 10 points— identify this Manuel de Falla work, named for the symbol of authority worn on the villain's head.
answer: The Three-Cornered Hat or El sombrero de tres picos
6. The New Progressive Party and Popular Democratic Party are the leading political groups here, and the chairman of the latter announced in March 2008 that its nominating delegates will be selected by a (*) primary rather than a caucus. Roberto Prats also pointed out that its primary will take place on June 1, before Montana and South Dakota, and will not be the last contest. For 10 points— name this commonwealth.

answer: Puerto Rico

7. His former colleague in the Justice Department, Felix Frankfurter, got this future co-chair of the "Interim Committee" appointed to his last Cabinet job. Earlier, Japan's occupation of Manchuria prompted him to (*) note that conquest in war would not be recognized by the U.S. in his role as Hoover's Secretary of State. For 10 points— name this atomic weapons advocate and Secretary of War during World War II.

answer: Henry Stimson

8. These people were inducted into their bands by attacking a totemic image, then drinking blood. A prominent example of one of these from Hrolf's Saga is (*) Bodvar Bjarki, and they served as the private guard to Harald Fairhair. Named either for a phrase meaning "without armor" or for the ursine skins they wore into battle, they were known for their rages. For 10 points— name these bear-worshipping Viking warriors.

answer: Berserkers

9. He claimed that "common registering" drives grades of consciousness, and argued for an externalist theory of knowledge in Philosophical Explanations. This author of Invariances later posited that (*) voluntary "protection agencies" turn into the minimalist "night watchman" in a response to a Harvard colleague. For 10 points— who countered John Rawls with his Anarchy, State, and Utopia?

answer: Robert Nozick

10. This book describes a courtship ritual that allows premarital sex only if the male leaves before dawn. It explains such religious aspects as the worship of Ngai and disputes the notion of communal land ownership as a fiction invented by greedy (*) British colonists. For 10 points— name this ethnography of the Gikuyu, introduced by Bronislaw Malinowski and written by his pupil Jomo Kenyatta.

answer: Facing Mount Kenya

11. One alternative to it is bimolecular dehydration, and one ingredient in this process is sometimes produced via the Finkelstein reaction. Another alternative to this reaction is alkoxymercuration, and during this reaction a competing E2 (*) elimination can take place, producing side products like propene. It fails with tertiary halides and can produce sodium bromide as a by-product. For 10 points— identify this SN2 reaction which uses an alkoxide ion and a primary alkyl halide to produce an ether.

answer: Williamson ether synthesis

12. One soloist in this song admits that he doesn't know why he is called "hit man," and another disavows being a "dumb cookie." The first voice claims the purpose of this song is to "feed the needy," while the entire group proclaims "we're so (*) bad we know we're good" and pledges "we're not here to start no trouble." For 10 points— name this 1985 record released by a namesake Mike Ditka-coached "crew," the Chicago Bears.

answer: "The Super Bowl Shuffle"

13. The last phase of this ended with the battle of Boomplats, and it began during the administration of Benjamin D'Urban. Its results were ratified at the Sand River Convention. It was opposed by (*) Dingane, whose forces were defeated at the Battle of Blood River. Led by Piet Retief and Andries Pretorius, it led to the emergence of the Transvaal and the Oragne Free States. For 10 points— name this movement of Boers.

answer: the Great Trek
14. This country is divided into such administrative regions as Wadi Fira, Guera, and Salamat. The cities of Ouaddai and Mayo-Kebbi are larger than the capital in this country, which disputes the northern (*) Aozou Strip with Libya. Found between Niger and Sudan, this country borders a namesake shrinking lake to its west. For 10 points— name this French-speaking state of Central Africa.
answer: Republic of Chad

15. A model of this process based on nonideal relay nonlinearities is known as the Preisach model, and thyristors employ positive feedback together with this process to achieve their latching function. In audio tapes, a (*) bias current is applied to counter it, and discrete transitions during this process due to critical domain reorientation are known as the Barkhausen effect. For 10 points— name this phenomenon in which magnetic flux density varies nonlinearly with applied magnetic field in ferromagnetic materials.
answer: hysteresis

16. Causes of this conflict included illegal logging in Honduras. During it, an assault on Fort Frederica was repulsed in the Battle of (*) Bloody Marsh by forces under James Oglehorpe. It started in 1739 and became a subsidiary part of the War of Austrian Succession. For 10 points— name this war between Britain and Spain, which started when the captain of the Rebecca waved the namesake body part around in Parliament.
answer: War of Jenkins' Ear

17. One of these days occurred when a protest of Sharif Emami's elevation to prime minister was fired upon, killing six hundred in Zhaleh Square. Abel Corbin and Daniel Butterfield were supposed to aid in another of these days, which ended when (*) Ulysses Grant sold four million dollars worth of gold from government stores, stopping the Fisk and Gould scheme. For 10 points— given this dark nickname.
answer: Black Friday

18. Izabela is pursued by Wokulski in a Boleslaw Prus novel titled for one of these. Misako discards several of these in Some Prefer Nettles, and a Carlos Fuentes story about a man's childhood friend Amilamia is titled for their (*) "queen." Christine pledges to marry Krogstad in another play that refers to one of these. For 10 points— name these things whose "house" is populated by Torvald and Nora Helmer.
answer: dolls

19. The protagonist of this movie visits the adult section of a video store to keep a promise to a mannequin. A religious argument follows a conversation about Bob Marley and Shrek in this film, at the point where (*) Anna and her son Ethan show up. It begins with the announcement of a viral cure for cancer, which cuts to a deserted New York haunted by "The Infected." For 10 points— name this 2007 Will Smith film.
answer: I Am Legend

20. One of this man's characters is the founder of The Banner, and another of his characters steals money from his father and invests in a fiction-writing machine. The protagonist questions the morality of his profession as a (*) candy salesman in his The Vendor of Sweets, which shares a setting with Waiting for the Mahatma and many of this author's other works. For 10 points— name this Indian creator of Malgudi.
answer: Rasipuram Krishnaswamy Narayan

21. It fails to develop in Rokitansky syndrome, which results in Muellnerian defects. Its corpus contains a layer which can thicken and it is sealed off by the isthmus. Found below the (*) fundus, one of its layers is the site of blastocyst implantation, the endometrium, and it also contains the cervix, which lie on the other side of where immature eggs enter, the fallopian tubes. For 10 points— name this womb organ of mammalian females.
answer: uterus
22. The home to the Ivan Vazov Theatre, it is the capital of a namesake province which is found to the south of Montana province. This city is found just northwest of the Vitosha Mountains and north across the Rila Mountains from Borovets and Moussala. It is the largest city in its country by far, well outpacing Ruse, Sliven, and (*) Plovdiv. For 10 points, name this capital of Bulgaria.
answer: Sofia

23. Matilda is killed by her father and the priest Jerome discovers he has a son, leading to Theodore getting his rightful (*) inheritance in this novel. Prince Alfonso meets St. Nicholas in Heaven, and one character in this book is killed on his wedding day when a giant helmet crushes him. Then, the Knight of the Gigantic Sabre shows up to haunt everybody at the title structure in, for 10 points—what novel by Horace Walpole?
answer: The Castle of Otranto

24. The inversion layer of one type of these was used to discover the quantum Hall effect, and Herbet Kroemer received a Nobel Prize for inventing the heterojunction variety. One type of them can be used to create a (*) Darlington configuration, and can be modeled with the Ebers-Moll model. Another type comes in N or P channel varieties and has a source, gate, and drain. For 10 points—name these circuit elements with bipolar junction and field-effect subtypes, invented by Shockley, Bardeen, and Brattain.
answer: transistor

25. One of his paintings shows a woman in black stockings and scanty white clothing passed out on a bed that blends in with the yellow background. He showed "two women waltzing" and "La Goulue arriving with two women" at a place that was a (*) frequent subject of his, such as in a painting where two figures' green dresses blend together. For 10 points—name this creator of At the Moulin Rouge.
answer: Henri de Toulouse-Lautrec

26. A constant companion of this god makes characteristic scratch marks on trees. Along with a similar figure who carries a big bag everywhere, this god was captured by a thirty-three member army and forced to stop being an (*) evil demon. He is usually shown with the set of drums he uses and is large and red-skinned. He also enjoys collecting human navels. For 10 points—name this god of thunder in Shinto.
answer: Raiden or Raijin
1. For 10 points each— name these violinists:
A. This composer of the Devil's Trill sonata is the namesake of the difference tone and wrote several treatises on harmony.
answer: Giuseppe Tartini
B. This guy commissioned Harold and Italy from Berlioz and wrote some Caprices which were notably rhapsodized upon by Rachmaninoff.
answer: Niccolò Paganini
C. A teacher of Vivaldi, this developer of the concerto grosso form liked to publish trio sonatas in groups of twelve and is called the father of modern violin technique.
answer: Arcangelo Corelli

2. Founded by Vilém Mathesius and populated by Russian exiles, it took a functionalist approach and used distinctive-feature analysis. For 10 points each—
A. Name this school of linguistics, which was based in a European capital.
answer: Prague school
B. This member of the Prague School explained distinctive features in Preliminaries to Speech Analysis and also wrote Studies in Child Language and Aphasia.
answer: Roman Osipovich Jakobson
C. This other member of the Prague School wrote Principles of Phonology, which put forth the now-familiar definition of a phoneme.
answer: Nikolay Sergeyevich Trubetskoy

3. The reaction to this event sparked an exodus of Protestants to Martin Bucer's haven at Strasbourg. For 10 points each—
A. Name this October 1534 incident, in which broadsheets denouncing the Mass were placed overnight in major French cities.
answer: the Affair of the Placards
B. This king's bedroom at Amboise was hit by the placardeers, provoking his wrath. This long-reigning Valois was earlier captured at Pavia and appeared the Field of the Cloth of Gold.
answer: Francis I
C. One of the men who fled France in the post-Placards crackdown was this author of Institutes of the Christian Religion and dictator of Geneva.
answer: John Calvin
4. It includes "Madam Délicieuse," "Belles Demoiselles Plantation," and "Jean-ah Pouquelin." For 10 points each—

A. Name this 1879 collection of short stories, many on the theme of racial relationships in New Orleans.
answer: **Old Creole Days**

B. *Old Creole Days* was written by this author of *Kincaid's Battery* and *The Grandissimes*.
answer: **George Washington Cable**

C. In *The Grandissimes*, Palmyre is the widow of this escaped slave, who is killed by Agricola after cursing the family of Don Jose.
answer: **Bras Coupe**

5. One member of this family, Zoë, married Ivan III of Russia. For 10 points each—

A. Name this dynasty including Andronicus II and John VIII, the last ruling house of the Byzantine empire.
answer: **Palaeologus** or **Palaeologi**

B. Paleologus rule in Constantinople came to an end when this emperor was killed during the Ottoman siege in 1453.
answer: **Constantine XI**

C. The first Paleologus emperor, Michael VIII, reconquered Constantinople from the Latin Dynasty from the Byzantine rump state located at and named for this city.
answer: **Nicæa**

6. Name these 2007 Cincinnati Reds outfielders. For 10 points each—

A. Completing his third straight season with exactly forty home runs, this regular left fielder is also consistently among the league leaders in strikeouts.
answer: **Adam Dunn**

B. This recovering crack addict had his long-delayed breakthrough year in center field in 2007, but was traded to Texas after the season.
answer: **Josh Hamilton**

C. This original 2007 Reds leadoff hitter, before a midseason injury, is a poor-hitting center fielder who gets caught stealing a lot, a.k.a. the "Dusty Baker dream player."
answer: **Ryan Freel**

7. Its Soave modification adds a multiplier that is a function of the acentric factor. For 10 points each—

A. Identify this equation of state which has an inverse-square dependence of pressure on temperature and uses two free parameters to account for material properties.
answer: **Redlich-Kwong equation**

B. The Redlich-Kwong formula works well as long as the reduced pressure is about half of the temperature divided by this temperature, above which gas and liquid phases are no longer distinct.
answer: **critical temperature**

C. This other state equation is an expansion of pressure times volume over temperature in successive terms of compressibility whose coefficients depend on temperature.
answer: **virial expansion**

8. It contains the short story "The Village Witch Doctor," in which Osanyin steals a fortune from Aro. For 10 points each—

A. Name this novel, which focuses on the effects of that theft on Aro's titular grandson.
answer: **Ajaíyì and his Inherited Poverty**

B. *Ajaíyì and his Inherited Poverty* was written by this Nigerian author of *The Palm-Wine Drinkard*.
answer: **Amos Tutuola**

C. This Tutuola novel tells of the events after a seven-year old flees into a stand of fruit trees to escape a slave raid and discovers the Otherworld.
answer: **My Life in the Bush of Ghosts**
9. Rival editor Tina Harrod was a one-off character on the first season finale of this show, which also solved
the mystery of Lucy Spiller's stalker. For 10 points each—
A. Name this FX drama.  
answer:  Dirt
B. Dirt stars this former portrayer of Monica on Friends and Scream star.  
answer:  Courtney Cox Arquette
C. The character of Jimmy Darby on Dirt, who left an obscene voicemail for his daughter, is based on this man whose roles include Shelly in The Cooler.  
answer:  Alec Baldwin

10. Its A2 form hydrolyzes PIP2 to produce arachidonic acid, which is then converted to eicosanoids. For 10 points each—
A. Name these enzymes that hydrolyze membrane lipids near phosphoryl groups.  
answer:  phospholipases
B. Upon phospholipase C activation, IP3 diffuses to the ER to induce release of this ion into the cytoplasm, activating PKC.  
answer:  calcium
C. Calcium binds to this protein with 4 binding sites that activates adenylyl cyclase, calcineurin, calcium ATPase, and CaM kinase II.  
answer:  calmodulin

11. It first appeared as a single from Toots and the Maytals, and became a hit on the soundtrack to The Harder They Come. For 10 points each—
A. Name this meteorologically-titled reggae standard which warns, "you gonna feel it, what you're doing is wrong."  
answer:  "Pressure Drop"
B. "Pressure Drop" was covered as the title track of a 1976 album by this singer, who later found MTV success with "Simply Irresistible" and "Addicted to Love."  
answer:  Robert Palmer
C. A later cover of the song was by this British ska outfit whose own songs include "Ghost Town" and "A Message to You Rudy."  
answer:  The Specials

12. Answer some questions about your friend and mine, the Bessel function. For 10 points each—
A. Bessel functions of the first kind often arise as solutions to the Laplace equation in this coordinate system.  
answer:  cylindrical or cylinder coordinates
B. Bessel functions of the first and second kind, together with a sum over the harmonic numbers, can be combined to give this constant given by the integral from 0 to infinity of e to the minus x times log of x.  
answer:  gamma or the Euler-Mascheroni constant
C. Bessel functions serve as a convenient basis for many expansions because they have this property which means that the integral of their products is proportional to the Kronecker delta.  
answer:  orthogonality

13. Name these kings of Scotland, for 10 points each.
A. This victor at Bannockburn secured Scottish independence via the Treaty of Northampton.  
answer:  Robert I the Bruce or Robert VIII the Bruce
B. This son of Robert the Bruce married Edward III's sister Joanna and fought a dynastic war with Edward de Balliol before being exiled to France.  
answer:  David II
C. Ending the Murdac regency, this author of the Kingis Quair ruled from 1424 to 1437 and reinvigorated the Scottish monarchy before Walter of Atholl killed him.  
answer:  James I
14. Name these causes of plant death, for 10 points each.
A. Caused by the *Ceratocystis ulmi* fungus, this beetle-spread affliction causes leaves on its namesake kind of tree to change color, curl up, and fall off.
answer: Dutch elm disease
B. This aphid-like insect destroyed the French grape fields in the late nineteenth century, which is why "French" wines are now produced from grafted American plants.
answer: *Phylloxera vitifoliae*
C. Phytophthora infestans causes "late blight," which both destroyed the 1946 American tomato crop and caused this 1845 to 1849 event.
answer: Irish Potato Famine or An Gorta Mór

15. This former law professor won a fake election in March 2008. For 10 points each—
A. Name this incoming president of Russia.
answer: Dmitri Medvedev
B. In 2002, Medvedev was the chairman of this enormous Russian energy company.
answer: Gazprom
C. Finishing second in the 2008 presidential race was this longtime leader of the Russian Communist Party.
answer: Gennady Zuganov

16. Answer some questions about chemical kinetics. For 10 points each—
A. This term, which represents the amount of energy necessary to initiate a reaction, appears in the exponent of the Arrhenius equation.
answer: Activation energy
B. This postulate of chemical kinetics states that the transition state most resembles the product or reactant closest to it in free energy.
answer: Hammond-Leffler postulate
C. In enzyme kinetics, this graph of the Michaelis-Menten equation plots the inverse of the velocity of a reaction against the inverse of the substrate concentration.
answer: Lineweaver-Burk plot

17. Divided into an "old" version and Hillsborough Bay by the Interbay Peninsula, this body of water receives the Manatee and Alafia rivers. For 10 points each—
A. Name this inlet, divided from the Gulf of Mexico proper by the Pinellas Peninsula, on whose coasts one may find Clearwater and a namesake city.
answer: Tampa Bay
B. Named by a Russian founder, this second-largest city on Tampa Bay is home to Sunken Gardens and the Salvador Dali Museum.
answer: St. Petersburg
C. Originally destroyed when a highly competent Floridian hit it with a ship in 1980, the new version of this bridge crosses Tampa Bay from St. Petersburg to Bradenton.
answer: Sunshine Skyway Bridge

18. Colonel Genestas pretends to be Captain Bluteau in this novel. For 10 points each—
A. Name this Honoré de Balzac work in which Benassis is both the mayor and the title figure in a village near Grenoble.
answer: *The Country Doctor* or *La Medecin de Campagne*
B. *The Country Doctor* was retroactively added to this series of Balzac novels which presents a panorama of French life.
answer: *The Human Comedy* or *La Comedie Humaine*
C. The similarly titled *A Country Doctor's Notebook* was written by this author of *A Cabal of Hypocrites* and *Zoya's Apartment*.
answer: Mikhail Afanasyevich Bulgakov
19. She is the repulsive goddess who rules Tuonela, but her beautiful daughter inspires men to journey to Pohjola. For 10 points each—

A. Name this figure from the Kalevala.
answer: Louhi

B. This player of the kantele leads the band attempting to retrieve Louhi's daughter, who chooses his smithy friend instead.
answer: Väinämöinen

C. This grinding device made by Ilmarinen is given to Louhi to allow her daughter to marry.
answer: the Sampo

20. His student Luca Della Robbia finished his Assumption relief at the Porta della Mandorla. For 10 points each—

A. Name this creator of the Quattro Coronati, depicting four crowned saints.
answer: Nanni di Banco

B. The Quattro Coronati are found in this merchant-banker guild church in Florence, also home to several bronze statues of apostles by Ghiberti.
answer: Or San Michele

C. Marbles of saints Mark and George on exterior niches of Or San Michele were created by this sculptor of the Gattamelata and a bronze David.
answer: Donatello

21. It ended the Six Dynasties period by taking Nanking from the Southern Chan. For 10 points each—

A. Name this Changan-centered dynasty, under which the Grand Canal was completed.
answer: Sui Dynasty

B. The Sui launched invasions of this Korean kingdom which was once ruled by Chumong and Taejo, and it fell to the Tang-Silla alliance soon after.
answer: Koguryo

C. This promulgator of the "rule of avoidance" seized the Chou throne and used that as a base to become the founding emperor of the Sui Dynasty.
answer: Wendi (or Kao Tsu; or Yang Chien)

22. Its radial eigenfunctions are given by the Laguerre polynomials, which give its characteristic one over n-squared energy levels. For 10 points each—

A. Identify this quantum mechanical system.
answer: hydrogen atom or one-electron atom or logical equivalents

B. The relativistic motion of the electron about the central atom gives this correction to the principal energy levels, which is proportional to the square of a particular dimensionless constant.
answer: fine structure correction

C. The complete wave function of the hydrogen atom is decomposed into the radial part proportional to the Laguerre polynomials and the angular part, described by these functions.
answer: spherical harmonics

23. It explains the principle of rule by the General Peoples Congress and the transformation of government into a "jamahiriyah." For 10 points each—

A. Name this three-volume text which has been the guiding document of Libya since 1974.
answer: the Green Book

B. The Green Book was written by this longtime Libyan dictator.
answer: Muammar al-Qaddafi

C. In 2008, Libya funded the completion of a big mosque in this country, ruled since 1986 by Yoweri Museveni, who is opposed by the Lord's Resistance Army.
answer: Uganda
24. They were published in the *Epodes, Odes, and Sonnets* and the *Posthume Poems*. For 10 points each—
A. Name this series of Cavalier poems, including "Her Reserved Looks" and one about "A Black Patch" on their namesake's face.
answer: *the Lucasta poems*
B. The Lucasta poems were written by this author of "To Althea, From Prison."
answer: *Richard Lovelace*
C. This member of the Lucasta poems opens "Tell me not, sweet, I am unkind" and concludes that "I could not love thee, dear, so much, loved I not honour more."
answer: "*To Lucasta, Going to the Wars*"

25. Meaning "hammer," this title was given to figures such as Judas, who rebelled against the Seleucid rulers and rededicated the Temple. For 10 points each—
A. Name this family of Jewish rulers who overthrew Antiochus IV and founded the Hasmonean dynasty in the second century BCE, as recounted at Hannukah.
answer: *Maccabees*
B. The second book of Maccabees says it was compiled from the writings of this figure, a historian writing in Greek.
answer: *Jason of Cyrene*
C. This Modein-based father of Judas Maccabeus began the Maccabee revolt by assaulting Jews who worshipped Greek gods.
answer: *Mattathias [or Matisyahu]*

26. White people, eh eh eh eh eh. For 10 points each—
A. This white supremacist apple farmer from northwestern Virginia was a Senator from 1933 to 1965 and controlled Virginia politics with his namesake "machine."
answer: *Harry Flood Byrd*
B. This governor perfunctorily attempted to block James Meredith from enrolling in the University of Mississippi in 1962, as part of a deal with the Kennedy administration.
answer: *Ross Barnett*
C. This Commissioner of Public Safety was held responsible for using dogs and firehoses against civil rights demonstrators in 1963 Birmingham.
answer: *Theophilus Eugene "Bull" Connor*