

## ACF Winter 2010: Temporary Autonomous Zone

Edited by Andrew Hart, Rob Carson, Trevor Davis, Dennis Jang, and Eric Mukherjee

Packet by UCSD (Auroni Gupta, Brian Tsui, Chris Chiego, and Darwin Fu) and Penn (Sid Chandrasekhar, Joe Nguyen, Mehdi Razvi, and Chris White)

### Tossups

1. A seven-station backtrack to Mosera followed the death of this figure at Mount Hor. This man's grandson impaled Cozbi and Zimri with a spear out of holy zeal against the Heresy of Peor. One son of this grandfather of Phinehas tended to the censers of several dead priests after the earth swallowed up several insurgents against this figure's rule. This father of Ithamar and Eleazar owned an object that produced ripe almonds during the rebellion of his cousin Korah. This figure caused his sister to be afflicted by tzaarath after he lost most of his power following his building of the Golden Calf. For 10 points, name this first High Priest of the Israelite, a Levite who owned a sapphire rod and was the brother of Miriam and Moses.  
ANSWER: Aaron the Levite
2. The Dakota sandstone Pierre Shale are two formations dating from this period, during which the Tethys Ocean became a shallow sea. Chalk deposits left by the Western Interior Seaway during this period formed the Smoky Hills Chalk in America, and the Dover Cliffs chalk in Europe was also formed at the same time. This period closed with the eruption of the Deccan Traps in India, which may be related to an impact that resulted in a thin layer of iridium forming between this period and the one that follows it. The Alvarezes posited that the KT boundary marks the stratigraphic border between this period and the Tertiary. For 10 points, name this period in which the T. Rex lived, the last period of the Mesozoic era that probably ended with a big meteor impact at Chixtubulub.  
ANSWER: Cretaceous period
3. Vincent Persichetti's *Parables XIV* and *XXV* were written for this instrument, which has a secondary solo role in Shostakovich's *First Piano Concerto*. Three of them are employed at the opening of Ashkenazy's orchestration of *Pictures at an Exhibition*, as opposed to the one usually used. Joseph Hummel wrote a concerto for this instrument for Anton Weidinger, for whom another pioneering work for this instrument was written to utilize a "keyed" version to access low-register chromatic notes not on the overtone scale. It is featured in a notable *Concerto in E-flat* by Joseph Haydn. The titular five-note query in Charles Ives' *The Unanswered Question* is played by this instrument. For 10 points, name this valved brass instrument, whose jazz virtuosi include Louis Armstrong.  
ANSWER: trumpet
4. In political science, the first chapter of *Essence of Decision* explores this idea in the context of the Cuban Missile Crisis. Gary Becker notably applied this concept to the analysis of addiction and crime. The sequential form of this idea determines optimal strategies in a perfect Bayesian equilibrium. Herbert Simon's notion of satisficing relies on the "bounded" form of this idea, since humans are rarely mentally able to carry out complex calculations. Utility maximization is assumed in most game theoretic situations due to perfect exhibition of this idea. Behavior of this type is built into many macroeconomic models and is called these type of "expectations." For 10 points, name this assumption suggesting that people optimally use all available information when making decisions.  
ANSWER: rationality [accept rational expectations since that is what is specifically referred to early on]
5. This country began one conflict with a northern neighbor by advancing to Dhola, and it lost one of the largest tank battles in history at Chawinda. This state recaptured land in the Kargil War in a case prominently cited as disproving the Democratic Peace Theory. One war in this country began with the Treaty of Surbat, while another ended only with the intervention of the Holkars. Another series of conflicts in this nation began with the intrigues of Joseph Duploux and ended with a decisive defeat for one side at the Battle of Wandiwash. Conflicts here have included the Carnatic wars, Mysore wars, and Maratha wars. For 10 points, identify this country which saw a victory for Robert Clive at the Battle of Plassey, as well as three battles of Panipat.  
ANSWER: Republic of India [or Bharat]

6. In one poem, this author observes a “bronze soldier” who “hitches a bronze cape / That crumples stiffly in the imagined wind;” later, he hears the “sure confusing drum” the title figure “followed...to the Balkans.” Another poem by this author of “In Memoriam F.E. Ledwidge” opens with its narrator in “the college sick bay” and sees a mother “cough[ing] out angry tearless sighs.” That poem ends with the line “A four foot box, a foot for every year,” a reference to his brother Christopher’s early death. This author of “Mid-Term Break” described a “squat pen” resting “between my finger and my thumb” and declared “By God, the old man could handle a spade” in “Digging.” For 10 points, name this author of the collection *Death of a Naturalist* and recent translator of *Beowulf*, an Irish poet.

ANSWER: Seamus **Heaney**

7. This work considers the “irreducible” paradoxes of Aristotle as examples of the contradiction inherent in the mind contemplating itself. It also examines the philosophy of Lev Shestov. One section of it is written as the perspective of a conqueror. This work considers the statement “if God does not exist, I am God” in a section that examines Kirilov from *The Possessed*. Its author criticizes Husserl’s belief in eternal reason and Kierkegaard’s leap of faith as examples of “philosophical suicide.” It discusses how the repetition of a mechanical life leads to the birth of the absurd, and its main argument is against committing suicide. It concludes that “one must imagine [the title figure] happy.” For 10 points, name this Albert Camus essay that considers a figure condemned to roll a rock up a hill.

ANSWER: *The **Myth of Sisyphus*** [or *Le **Mythe de Sisyphe***]

8. One example of these molecules regulates the production of GlmS based on glucosamine-6-phosphate presence in the cell. Another of these molecules has an activity-essential motif consisting of G5, G8, and G12, as well as a U-turn that gives it its namesake shape. Examples of these molecules capable of catalyzing in vivo Diels-Alder reactions were described by Seelig. Another type of them might allow for production of HIV-resistant T-cells. They provide evidence for Gilbert’s RNA world hypothesis, and these molecules are capable of hydrolyzing their own phosphodiester bonds. For 10 points, give this term for RNA molecules with enzyme-like catalytic activity, such as the “Hammerhead” type.

ANSWER: **ribozymes** [prompt on **RNA** before mentioned]

9. This figure once said “academia, here I come!” after presenting a “Study in Psychic Transrelational Gender Modes” called “The Dynamics of Interbeing and Monological Imperatives in *Dick and Jane*.” His artistic pursuits include a series of 100 shrunken heads of popular cartoon characters, and a sculpture in which one figure contemplates evolution while holding a snowball. His adopted sobriquets include “the Bold” and “Boy of Destiny.” His alter egos include Tracer Bullet and Spaceman Spiff. This co-founder of G.R.O.S.S. used the same cardboard box to invent a time machine, a duplicator, and a transmogrifier. He often crashes his toboggan or his wagon. For 10 points, identify this protagonist of a Bill Watterson comic strip who is often accompanied by his tiger Hobbes.

ANSWER: **Calvin**

10. This character dies alone “without the benefit of fire” in a “New York London” winter in the Kamau Brathwaite poem “Didn’t He Ramble.” This character learns about the death of Prue’s child due to her milk drying up. A lock of hair tied around this character’s neck is thrown into the fire after it twines around the finger of another character. During a trip to Lake Pontchartrain, this character is asked where new Jerusalem is by a character whom he had saved from drowning. George Shelby arrives too late to save this character, who refuses to reveal the details of Cassy and Emmeline’s escape and dies at the hands of Simon Legree. For 10 points, name this martyr-like title character of an 1852 Harriet Beecher Stowe novel, a pious slave who lived in a titular cabin.

ANSWER: Uncle **Tom**

11. Landings on Tulagi and Tanambogo preceded the main invasion in this campaign, during which the transport *George Elliot* was sunk and the escort fleet defeated at Savo Island. One side set up the “Cactus Air Force” and another used the “Tokyo Express” route to bring supplies to its troops. Naval skirmishes during this battle off Cape Esperance and the Santa Cruz islands were indecisive. Henderson Airfield came under attack from two battleships during this battle. It saw heavy fighting along the Matanikau River before Operation Ke resulted in the final withdrawal of all Japanese forces. For 10 points, name this battle fought over the course of six months from August 1942 to February 1943, a major American victory fought on a namesake island in the Solomon Islands.

ANSWER: Battle of **Guadalcanal**

12. The Thiemann operator is a candidate for this type of constraint, which would describe kinematics in quantum loop theory. Vector fields described by this adjective are obtained by rotating the gradient field components ninety degrees, and are important for determining equations of motion in phase space. Ehrenfest's theorem relates the time derivative of an observable with the commutator of this operator with that observable's operator. Cycles of this type touch every vertex of a graph once before returning to the starting vertex. When applied to wavefunctions, the operator of this type yields energy eigenvalues. For 10 points, give this term describing an operator that equals the sum of kinetic and potential energy, named for an Irish mathematician and represented by a capital H.

ANSWER: **Hamiltonian**

13. Vincent van Gogh complimented the tones of "bare earth" found in the feet of one person depicted in this work. The asymmetrical groupings of figures in this painting were inspired by the artist's desire not to replicate a similar work by Thomas de Keyser. One figure's shoulder casts a shadow that forms a mask over the central figure's eyes. Another figure in this work holds a list in his left hand and stands in front of a scroll displaying the artist's name. The lower right foreground of this work depicts a huge open book, likely a work of Vesalius. In this painting, seven figures with ruffed collars observe the forearm muscles of the criminal Aris Kindt being held up with a forceps. For 10 points, name this painting in which an Amsterdam surgeon performs a public dissection, a work of Rembrandt.

ANSWER: *The **Anatomy Lesson** of Dr. Nicholas Tulp* [or *De **Anatomische Les** van Dr. Nicolaes Tulp*]

14. A compulsory youth group in this nation had a uniform of green shirts and khaki pants. Antonio de Spínola's book about this country "and the Future" helped spark a coup here led by the Armed Forces Movement, which then set up the Junta of National Salvation. The PIDE secret police was active in this country during a period where its legislature included a Corporative Chamber. Oscar Carmona became president of this nation after the 1926 revolution. Marcello Caetano's government here followed that of a former economics professor, and was ended by the Carnation Revolution. The Estado Nova was created here under the leadership of Antonio Salazar. For 10 points, name this country earlier ruled by the Braganza family, like its former colony of Brazil.

ANSWER: **Portugal**

15. One character in this work uses the phrase "a bad bump" to refer to a phone conversation, in which it is revealed that another character's father is being released from the hospital. Songs by Count Basie and Sarah Vaughan frame the events of this work, in which one character encourages another to apologize for hitting Hilda Samuels. One of this play's characters decides to title an essay "A World without Collisions" and recalls the time another character made a kite out of junk at the Jubilee Boarding House. After that character displays his "Basuto buttocks" in response to a racist joke, this play's first title character spits in his face. It opens with Willie practicing his dance steps and ends after Sam attempts and fails to reconcile with Hally. For 10 points, identify this play by Athol Fugard.

ANSWER: **Master Harold...and the Boys**

16. This figure is told the story of Rathmore while riding past a lake with Buino and Illan. This character committed suicide by headbutting a rock after being forced to live with the man she hated most in the world. A northerner named Trendhorn lost his eye while spying on this figure, who as a child saw an omen in the form of a raven drinking the blood of a calf. Fiachu, Ardan, and Ainle were among those killed when this figure arrived in Emain Macha, where Eoghan mac Durthacht also killed her lover, a son of Uisneach. Raised by the nurse Leabharcham, she fled to Alba with her lover Naoise but was eventually tracked down by Conchobar mac Nessa. For 10 points, name this Celtic woman whose conflicted love and intense beauty caused many sorrows.

ANSWER: **Deirdre** of the Sorrows [or **Derdriu**]

17. Removal of this organ from 740 World War II veterans saw twice the incidence of cardiovascular disease, perhaps because it releases monocytes during stresses on the heart. This organ is either absent or multiply expressed in patients with Ivemark Syndrome. It is surrounded by protective fibroelastic and serous coats. Like the kidney, this organ possesses Malpighian corpuscles, which are lymphocyte-containing follicles within one type of tissue in it. This organ is under the left side of the diaphragm, and becomes sequestered when trying to clear sickled cells. The marginal zone separates this organ's white and red pulp. For 10 points, name this lymphoid organ in which red blood cells are destroyed.

ANSWER: the **spleen**

18. One king of this name and number subdued rebellious forces in Argyll and gave up his claim to English land in the Peace of York; that ruler assisted the English barons in threatening King John. A pope of this name and number gave his blessing to William the Conqueror's invasion of England. Another ruler of this name and number had ministers like Dmitry Milyutin and Pyotr Shuvalov, and that ruler suppressed the January uprising in Poland. That same ruler also sold Alaska to the United States and set up the *zemstvo* system. That tsar of this name and number ended the Crimean War after succeeding Nicholas I. For 10 points, give the name and number of the tsar who was assassinated by People's Will after earlier undertaking the 1861 emancipation of the serfs.

ANSWER: Alexander II

19. In the second act of one of this man's works, one character pretends to be the student Pereda and listens to the gypsy Preziosilla sing "Al suon del tamburo." In the final act of that work by this man, one character sings "Pace, pace mio Dio" before being stabbed in the heart by her brother Carlo. In addition to that work about the lovers Leonora and Alvaro, this man composed an opera whose title character rescues Fenena after promising to restore the Temple in "Dio di Giuda;" that opera also contains the Hebrew slave chorus "Va, pensiero." The second act of another of this man's operas contains the Triumphal March, which accompanies the return of Radames, who is buried alive with the title Ethiopian princess. For 10 points, identify this composer of *La Forza del Destino*, *Nabucco* and *Aida*.

ANSWER: Giuseppe Fortunino Francesco Verdi

20. One character in this work listens to a recording of the jazz song "Some of these Days" on a battered phonograph in a cafe, and another is kicked out of a library after making advances on a young boy. The central character of this work makes advances on a café owner named Françoise, and remembers his fling with the fat English girl Anny. The protagonist, a historian, tries to reconstruct the life of the Marquise of Rollebon before meeting "the Self-Taught Man" Ogier P. in the seaport town of Bouville. The protagonist becomes obsessed with the idea that objects are "touching" him, and questions his existence, asking if he is a "mere figment of the imagination." For 10 points, name this novel about the "sweetish sickness" that Antoine Roquentin experiences, a work by Sartre.

ANSWER: Nausea [or *La Nausée*]

21. One stanza of this poem counters "fast-fading violets covered up in leaves" with "the murmurous haunt of flies on summer eves." This poem describes the "Queen-Moon" in one of its stanzas, which opens with a contrast between "Bacchus and his pards" and "the viewless wings of Poesy." This poem's speaker describes the "sad heart of Ruth," who "stood in tears amid the alien corn." Its speaker calls this poem's title creature "soft names in many a musèd rhyme" and "light-wingèd Dryad of the trees" and notes that he feels as if he'd taken "hemlock" or "some dull opiate," as his "heart aches, and a drowsy numbness pains." For 10 points, name this poem about an "immortal bird" that "wast not born for death," a work of John Keats.

ANSWER: "Ode to a Nightingale"

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### Bonuses

1. Its chapel has a famous octagonal dome and its hot sulphur springs made it a popular nineteenth-century spa resort. For 10 points each:  
[10] Name this city that was the namesake of treaties ending the War of Devolution and the War of Austrian Succession. It was also the capital of the Carolingian empire of Charlemagne.  
ANSWER: Aix-la-Chapelle [or Aachen]  
[10] In this 870 treaty that superseded the Treaty of Verdun, the Carolingian lands were divided once more and poor Aachen was doomed to obscurity by being placed on the border.  
ANSWER: Treaty of Meersen  
[10] The Treaty of Meersen helped foster the rise of this dynasty that was originally a small principality on the Ile-de-France in the River Seine but later became the ruling family of France under the king Hugh.  
ANSWER: Capetian Family or Dynasty
2. The action of this poem occurs as "the peak of the mountain is sparkling / with evening's final ray." For 10 points each:  
[10] Name this poem about "the fairest of maidens," whose presence causes the waves of the "calm Rhine" to "devour the boatman and boat as one."  
ANSWER: "The Lorelei" [or "Die Lorelei"]  
[10] This German Jewish-to-Christian convert authored "Die Lorelei," wrote about the high oak of his fatherland in "Abroad," and poked fun at utopian contemporaries in "Atta Troll."  
ANSWER: Christian Johann Heinrich Heine  
[10] Heine also wrote about returning to his native country from France in this work, which parodied the style of Wilhelm Mueller and earned Heine a warrant for his arrest.  
ANSWER: Germany: A Winter's Tale [accept Deutschland: Ein Wintermaehrchen]
3. This amendment prevented former Confederate office holders from holding future office. For 10 points each:  
[10] Name this constitutional amendment that includes the Equal Protection Clause and which extends due process to the states.  
ANSWER: Fourteenth Amendment  
[10] This 1925 case overturned *Barron v. Baltimore* by using the Due Process Clause of the Fourteenth Amendment to extend the First Amendment to the states. Its namesake advocated the violent overthrow of the U.S. government.  
ANSWER: Gitlow v. New York  
[10] In this 1937 case, the court overturned *Adkins v. Children's Hospital* to rule that the Due Process Clause did not protect economic rights. The case involved a minimum wage law in the state of Washington.  
ANSWER: West Coast Hotel Co. v. Parrish [accept either in either order]
4. Cicero associated this figure with the sun and Diana with the moon, while he's also been linked to the Chaldean Belinus and the Etruscan sky god Ani. For 10 each:  
[10] Name this two-faced Roman god of doorways, sometimes said to be married to Juturna, whose temple was kept open during times of war and closed during times of peace.  
ANSWER: Janus [or Ianus]  
[10] One story states that Janus caused the eruption of hot springs to thwart this mythical event, whose aftermath saw Titus Tatius rule Rome jointly with Romulus.  
ANSWER: rape of the Sabine women [accept equivalents mentioning Sabine women and something like rape or theft or abduction]  
[10] Ovid conflated the name of the goddess who protected man's physical well-being with a goddess who was pursued by Janus and became the goddess of hinges after she yielded to him. Name either.  
ANSWER: Carna or Cardea [respectively]

5. The Steinmetz equation describes the power loss in these materials due to hysteresis as proportional to maximum induction to the 1.6 power. For 10 points each:
  - [10] Name these materials capable of forming a permanent magnet below the Curie point following magnetization.  
ANSWER: **ferromagnets**
  - [10] This effect resulting from self-organized criticality sees the development of ferromagnetism in a discrete step-wise fashion which leads to its namesake noise.  
ANSWER: **Barkhausen** effect
  - [10] This formula gives the time evolution of magnetization of a solid in n dimensions. For two dimensions, it states that  $dS/dt$  equals  $S$  wedge  $d$  squared  $S$  over  $dt$  squared plus  $S$  wedge  $J$   
ANSWER: **Landau-Lifshitz** formula
6. Their special forces, the Black Hand, are led by Gideon Raveshaw and Anton Slavik, while their Inner Circle was introduced in the expansion *Firestorm*. For 10 points each:
  - [10] Identify this cultish faction headquartered in Sarajevo and led by a bald messianic figure named Kane, known for their Obelisks of Light and for engaging in a number of conflicts with the Global Defense Initiative.  
ANSWER: The **Brotherhood** of **Nod** [accept either underlined portion]
  - [10] The wars between the Brotherhood of Nod and the Global Defense Initiative form the backdrop of this seminal series of real-time strategy video games, which also contains an alternate-timeline series called *Red Alert*.  
ANSWER: **Command & Conquer** [prompt on **C&C**]
  - [10] A number of C&C games center on and are partially named for this fictional substance, a highly toxic and radioactive green crystal named for the river in Italy near which it was first discovered. It serves as the primary resource harvested by the player, the same role that Ore serves in the *Red Alert* games.  
ANSWER: **tiberium** [accept **ichor**]
7. Sir Charles Easy stops sleeping with a maidservant after his wife uses "the Steinkirk scene" to win him back in one of this author's plays. For 10 points each:
  - [10] Name this playwright of *The Careless Husband* who wrote about Amanda tricking Loveless in *Love's Last Shift*. His popular, rambling, self-serving autobiography is called *An Apology for the Life of* this author.  
ANSWER: Colley **Cibber**
  - [10] Colley Cibber replaced Lewis Theobald as the target of this satirical work in its 1743 edition. In the opening "argument" of this work, which parodies the *Aeneid*, Cibber is chosen as King by the goddess Dulness.  
ANSWER: *The* **Dunciad** [accept *The New* **Dunciad**; do not accept *The* **Dunciad Variorum**]
  - [10] *The Dunciad* was written by this tuberculosis-stunted poet who further ridiculed his contemporaries in *Peri Bathous, Or the Art of Sinking in Poetry* and who also wrote the "heroi-comical" mock epic *The Rape of the Lock*.  
ANSWER: Alexander **Pope**
8. Expression of the alpha-SM form of this protein has been linked to upregulation of fibroblast contractility. For 10 points each:
  - [10] Name this protein found in the thin filaments of sarcomeres in muscle cells.  
ANSWER: **actin**
  - [10] Filamentous f-actin forms when these monomeric actin units bind ATP and oligomerize.  
ANSWER: **globular** actin [accept **g** actin]
  - [10] Named for its ability to transform between two types of colloids, this protein contains six similar domains that wrap around and cut at the barbed end of filamentous actin.  
ANSWER: **gelsolin**
9. Identify the following about Pritzker Prize winners, for 10 points each.
  - [10] The 2003 Pritzker was awarded to Jorn Utzon, whose works include the Kingo Houses in Elsinore and this Australian landmark, which features a number of concrete "shells" formed from sections of a hemisphere.  
ANSWER: the **Sydney Opera** House
  - [10] The so-called "zogs" used in this man's design for the IDS Tower allow each floor to have 32 corner offices. His more characteristic buildings include the gigantic Crystal Cathedral and his own residence, the Glass House.  
ANSWER: Philip Cortelyou **Johnson**
  - [10] This Japanese designer of the Azuma House and the Pulitzer Foundation for the Arts building may be more famous for a concrete building featuring a large sunrise-lit cross cut into one wall, the Church of the Light.  
ANSWER: Tadao **Ando**

10. He was known to perform in concert even after the breaking of three of the four strings on his instrument. For 10 points each:  
[10] Name this famous violin virtuoso, the last of whose twenty-four violin caprices formed the basis for Rachmaninoff's piano piece titled "Rhapsody on a Theme of" this composer.  
ANSWER: Niccolò **Paganini**  
[10] Paganini composed this famous third movement of his Violin Concerto No. 2 in B flat minor. Its name comes from the "little bell" in which he put in before the recurrence of the rondo theme.  
ANSWER: "La **Campanella**"  
[10] This other composer transcribed "La Campanella" for the piano. Other works of his include the *Faust Symphony*, twenty *Hungarian Waltzes*, and his *Mephisto Waltzes*.  
ANSWER: Franz Ritter von **Liszt**
11. This principle was developed in *The Logic of Scientific Discovery*; its creator was inspired to write it since he felt that the principle of verification falsely categorized Marxism and Freudian analysis as sciences. For 10 points each:  
[10] Name this Karl Popper principle which defines a theory as scientific only if a counterexample could exist.  
ANSWER: **falsifiability** [or **falsification** or other reasonable word forms]  
[10] This man argued that Popper's criterion was flawed since it would by necessity throw out all theories as incomplete. That criticism appears in this man's *The Structure of Scientific Revolutions*.  
ANSWER: Thomas Samuel **Kuhn**  
[10] A synthesis of the ideas of Popper and Kuhn was presented by this Hungarian philosopher. Paul Feyerabend's *Against Method* was originally intended to be a dialogue with this man.  
ANSWER: Imre **Lakatos**
12. The first twenty years of this ruler's reign were marked by outside influence, including that of Hubert de Burgh, Peter des Roches, and Peter des Rivaux. For 10 points each:  
[10] Name this English king who was born in Winchester Castle, best known for signing the Provisions of Oxford.  
ANSWER: **Henry III**  
[10] Henry III was a son of this king who sported the byname "Lackland" and who signed the Magna Carta.  
ANSWER: King **John**  
[10] Henry's first regent was this man, who successfully repulsed the future Louis VIII from England while leading the royalist forces during the First Barons' War.  
ANSWER: William **Marshal** [or William **the Marshal**; or Earl of **Pembroke**]
13. The zirconium-based Schwartz reagent is an example of this compound useful in linking units of alkenes or alkynes. For 10 points each:  
[10] Name this type of compound consisting of a divalent metal cation sandwiched between two cyclopentadienyl anions.  
ANSWER: **metallocenes**  
[10] Metallocenes can be used to catalyze this type of reaction, a role assumed by Ziegler-Natta catalysts for alkenes. This type of reaction is simply the assembly of monomers into a compound with repeating units.  
ANSWER: **polymerization** [accept word forms]  
[10] Unlike Ziegler-Natta polymerization, products of metallocene polymerization typically exhibit this type of tacticity in which every other substituent points the same direction along the backbone.  
ANSWER: **syndiotactic** [or **syntactic**]
14. Name some world leaders who represented their nations at the Bandung Conference, helping to found the Non-Aligned Movement, for 10 points each.  
[10] This first Indian prime minister put forward Five Principles at the conference. This man was a colleague of Mohandas Gandhi, and the father of Indira Gandhi.  
ANSWER: Jawaharlal **Nehru**  
[10] This man supported his policy of "Pan-Africanism" at the conference. At the time he was prime minister of the Gold Coast, and he would go on to lead Ghana after its independence.  
ANSWER: Kwame **Nkrumah**  
[10] Another participant in the conference was this founder of the Organisation Spéciale and the FLN who was in exile in Egypt at the time. He would go on to be the first president and prime minister of an independent Algeria.  
ANSWER: Ahmed **Ben Bella**

15. Answer the following about Germans and their involvement in psychology, for 10 points each.  
[10] von Ehrenfels was said to be the first to introduce this type of psychology, which was pioneered by Koffka, Wertheimer, and Koehler, and emphasizes the perception of the whole being greater than the sum of the parts.  
ANSWER: **Gestalt** psychology [or **gestaltism**]  
[10] Gestalt psychology is contrasted with the principles of this German psychologist, considered the father of modern psychology. He would establish the first experimental laboratory in psychology in 1879.  
ANSWER: Wilhelm Maximilian **Wundt**  
[10] This German-born psychologist studied under the psychoanalytical school and most famously formulated his eight stages of psychosocial development from infancy to old age. He also wrote *Young Man Luther*.  
ANSWER: Erik Homberger **Erikson**
16. Identify the following about the Pre-Raphaelites, for 10 points each.  
[10] He depicted a woman standing up from the lap of her lover in *The Awakening Conscience* and painted a serious-looking Christ holding a lantern and knocking at a door in *The Light of the World*.  
ANSWER: William Holman **Hunt**  
[10] Like many of the PRBs, Hunt created a painting of this pseudo-Arthurian character, though he didn't depict her in her funeral boat. She was the subject of a Tennyson poem about her doomed love for Sir Lancelot.  
ANSWER: the **Lady of Shalott** [prompt on partial answer]  
[10] A famous depiction of the Lady of Shalott, this time in said funeral boat, was painted by this other Pre-Raphaelite who also painted *The Remorse of Nero* and *Sleep and his Half-Brother Death*.  
ANSWER: John William **Waterhouse**
17. This structure consists of White and Red Palaces. For 10 points each:  
[10] Name this structure first used by Songsten Gampo, which contains a Saint's Chapel bearing the inscription "blessed field of wonderful fruit."  
ANSWER: **Potala** Palace  
[10] The Potala Palace is the residence of this spiritual head of the Gelug, or "Yellow Hat," sect of Tibetan Buddhism. The incumbent fourteenth holder of this position, Tenzin Gyatso, was exiled to India.  
ANSWER: **Dalai Lama**  
[10] Some Tibetan Buddhists are members of this sect devoted to the Buddha of Infinite Light, Amitabha. It teaches that devotees will eventually be reborn in Sukhavati, where they can achieve enlightenment.  
ANSWER: **Pure Land** Buddhism [prompt on **Amidism**; prompt on **Mahayana** Buddhism]
18. In one of his poems, "a star burnt blue" and "we were warm, you remember/and counted the rings on a moon." For 10 points each:  
[10] Name this poet of the collections *Cornhuskers* and *Smoke and Steel*, who wrote "Valley Song," "Under the Harvest Moon," and a poem about "Fog" coming on "little cat feet."  
ANSWER: Carl **Sandburg**  
[10] Another of Sandburg's collections is named for this poem of his, in which he describes the title city "flinging magnetic curses" while being "hog butcher for the world" and "stacker of wheat."  
ANSWER: "**Chicago**"  
[10] Some passengers ask the conductor "What place is this? Where are we now?" at Gettysburg, Ypres, and Verdun in this Sandburg poem, which opens with the line "pile the bodies high at Austerlitz and Waterloo."  
ANSWER: "**Grass**"
19. This city is home to nearly half of its state's population, and its outskirts include the fast-growing suburb of Rio Rancho. For 10 points each:  
[10] Name this American city near Kirtland Air Force Base, the largest in the "Land of Enchantment."  
ANSWER: **Albuquerque**, New Mexico  
[10] Albuquerque is located in the basin of this river, which also flows through Lake Havasu and carves the Grand Canyon.  
ANSWER: **Colorado** River  
[10] New Mexico's northern part is home to Philmont Scout Ranch, Taos ski resort, and of course, this gigantic field of radio telescopes near Socorro.  
ANSWER: the **Very Large Array** [or **VLA**]



20. One important conclusion to this theorem is that a matrix taken to a certain power can be expressed in terms of sums of lower powers of the matrix. For 10 points each:

[10] Identify this theorem which states that every matrix satisfies its own characteristic equation.

ANSWER: **Cayley-Hamilton** Theorem

[10] The characteristic equation is found by applying this operator to the resultant of lambda times the identity matrix minus the original matrix A. For a two-by-two matrix abcd, this operation equals ad minus bc.

ANSWER: **determinant**

[10] This other theorem states that the dimension of the range of a matrix plus the dimension of the kernel of the matrix will equal the number of columns in the matrix.

ANSWER: **rank-nullity** theorem

21. Both Prader-Willi and Angelman syndromes see this phenomenon associated with defective gene expression on chromosome 15. For 10 points each:

[10] Name this epigenetic process in which certain genes are inherited paternally or maternally.

ANSWER: genetic/genomic **imprinting**

[10] Imprinting often involves this chemical modification to cytosines among the DNA as well as to histones, which also see acetylation to lysine residues.

ANSWER: **methylation**

[10] Methylation occurs among these sites in a DNA sequence, consisting of certain dinucleotides.

Hypermethylation of these sequences is linked with oncogene activation.

ANSWER: **CpG** sites/islands