

1. A 5 km thick layer of nonionized sodium exists in this layer, which creates a night glow through D-line emissions. Collapse of internal gravity waves in this layer is a primary driving force of global circulation. Near the poles, ice crystals condense to form bluish noctilucent clouds in this layer. Sounding rockets are the primary means of studying this layer, which is inaccessible to planes or satellites. This layer reverses the temperature inversion of the layer beneath, meaning that its temperature (*) decreases with increasing height. In addition to being the coldest layer of the atmosphere, this layer is also where meteors burn up. For 10 points, name this layer of the atmosphere which is located between the stratosphere and thermosphere.

ANSWER: mesosphere

<Lasker>

2. The leader of one revolt of these people wrote correspondences found in the Cave of Letters. One chronicler of these people wrote the polemic *Against Apion*. One revolt of these people was led by Lukuas and was crushed by Lucius Quietus. Another revolt of these people was triggered by a city being renamed Aelia Capitolina and was led by a person dubbed (*) "Son of the Star." The first revolt of these people ended with nine hundred Zealots committing suicide in the fortress of Masada. That event was chronicled by Flavius Josephus and preceded an uprising led by Bar Kochba, whose defeat by Hadrian's forces is mourned on Tisha B'Av. For 10 points, name these people who lived in a Roman province with capital at Jerusalem.

ANSWER: Jews [accept equivalents]

<Mukherjee>

3. This man's feats include drinking four draughts of wine at breakfast and eating two whole partridges in front of a sick person with no appetite. This employer of the servant Laurent comments in one scene that a woman should cover her bosom with a handkerchief. Mr. Loyal helps this man by reading an eviction notice. This man takes a box of incriminating (*) letters left by Argas, which is eventually turned over to an officer of the all-seeing King, and is earlier spied on from behind a curtain by Damis ["dah-MEE"], who catches him seducing Elmire. In the play in which he appears, Orgon is nearly tricked into giving up his estate to this man. For 10 points, name this hypocritical faux-pious con-man who titles a Moliere comedy.

ANSWER: Tartuffe [accept *Tartuffe*, or the Impostor or *Tartuffe*, ou l'Imposteur]

<Jackson>

4. Some scholars have argued that one depiction of this person is instead a depiction of Mercury and Argo because of the *petasus* hat he wears; in that same sculpture, a feathered wing slides up this man's right leg. This figure wears a skirt and a leather jerkin and holds a dagger in a Verrocchio sculpture commissioned by Lorenzo de' Medici. One sculpture of this man has him standing over his shed armor and (*) about to perform his most famous action. This figure is depicted with long curly hair and wears only boots in a free-standing nude statue in bronze by Donatello. Bernini depicted him crouching with a slingshot. For 10 points, name this Biblical figure often depicted standing near the head of Goliath.

ANSWER: David

<Bentley>

5. In 2004, 30 scientists were held hostage in this archipelago by fisherman who demanded the right to use more efficient fishing methods. These islands were removed from UNESCO's danger list in 2010 because of lobbying from Rafael Correa. Fernandina is the most volcanically active of these islands, which are governed from the capital of Puerto Baquerizo Moreno on (*) San Cristobal. The island of Isabela here, which lies on the Equator, is home to an endemic species of penguin as well as giant tortoises and marine iguanas. Many varieties of finch are also associated with, for 10 points, what Ecuadorean island group visited by Charles Darwin?

ANSWER: Galapagos Islands

<Haddad-Fonda>

6. A rival of this figure once climbed up a peak and hurled a large rock at him, which splintered and made this figure's foot bleed. This man summoned his followers to a lake, held up a certain object without saying a word, and was met with a smile and a laugh by his successor. His mother, Maya, had a vision of a beautiful elephant entering her womb. This man traveled to a deer park to begin his teachings and is considered to be the first (*) arhat. In his adolescence, this deliverer of the "Flower Sermon" was disturbed by the sight of an old man, a diseased man, and a corpse. This prompted him to meditate under a Bodhi tree and come up with the Four Noble Truths. For 10 points, name this religious figure who was born Siddhartha Gautama.

ANSWER: Buddha [or Siddhartha Gautama before mention]

<Gupta>

7. This author described the "pivot of heels and knees!" in a poem whose speaker claims to be "the arrow, the dew that flies" while riding on horseback towards the rising sun. She compared herself to a "pure gold baby that melts to a shriek" in a poem that begins "I have done it again, one year in every ten" and ends "Out of the ash I rise with my red hair, and I eat men like air". In another of her poems, the image of a "man in black with a (*) Meinkampf look" represents her husband, Ted Hughes. That poem opens with the line "You do not do, you do not do" and tells the title figure "you bastard, I'm through." For 10 points, name this poet of "Ariel", "Lady Lazarus" and "Daddy", whose only novel *The Bell Jar* was published shortly before her 1963 suicide.

ANSWER: Sylvia Plath

<Carson>

8. Syntheses of molecules with this property often employ auxiliaries via asymmetric induction. The fact that Mosher's acid has this property allows it to be used as a derivatizing agent to change the NMR shift of other molecules with this property. Meso compounds notably do not have this property due to a plane of symmetry, and it was first studied in crystals of tartaric acid by Louis Pasteur. Molecules with this property are labeled as R or S using the (*) Cahn-Ingold-Prelog rules. Molecules with this property rotate plane polarized light, meaning they are optically active. For 10 points, name this property of some molecules which makes them distinct from their mirror images, which can be roughly defined as handedness.

ANSWER: chirality [accept word forms; accept things like they have a chiral center; accept word forms of optical activity until mention, prompt after; prompt on "stereochemistry" or word forms; prompt on "stereoisomers" or word forms; prompt on "enantiomers", "diastereomers", "epimers", "anomers" or word forms]

<Mukherjee>

9. **This man gained national recognition when he gave a speech conceding a closely contested nomination race to Estes Kefauver. His first speech as President called for America to "bear the burden of a long twilight struggle." One initiative of this President was an expansion of Operation Crossroads Africa. Among the accomplishments of his administration was the signing of the Nuclear Test Ban Treaty. On the campaign trail this man hammered home the danger of the (*) "missile gap." The Peace Corps was founded during this man's presidency, and many of his domestic programs were part of his "New Frontier" program. He was the first Roman Catholic elected president. For 10 points, name this President who was assassinated in 1963.**

ANSWER: John Fitzgerald Kennedy [or JFK; prompt on "Kennedy"]

<Bentley>

10. **After being told by a friend that his impulse to defy tradition "may be from below," this man replied "if I am the Devil's child, I will live then from the Devil." This man argued that both abstractionist and materialist traits were possessed by another thinker who spent his whole life wondering "What do I know?" He urged people to become "Man Thinking" in a work heralded as an "intellectual Declaration of Independence." This author who described Montaigne as a "Representative Man" also delivered a speech to the Phi Beta Kappa Society and penned the maxims "Whoso must be a man, must be a (*) nonconformist" and "A foolish consistency is the hobgoblin of little minds." For 10 points, name this thinker who delivered "The American Scholar" and wrote "Self-Reliance."**

ANSWER: Ralph Waldo Emerson

<Gupta>

11. **One minus 19.7 divided by this number is proportional to the Strouhal number, which governs the formation of von Karman streets. For a packed bed, its denominator contains one minus the voidage. One version of this value is the ratio of magnetic advection to magnetic diffusion. It appears on the x-axis of a Moody diagram plotted against the Darcy friction factor. This value can be expressed as the ratio of (*) inertial forces to viscous forces, and is equal to the velocity times length scale divided by kinematic viscosity. At high values of it, eddies and vortices appear in the flow. For 10 points, name this dimensionless parameter which determines whether flow is laminar or turbulent.**

ANSWER: Reynolds number [or magnetic Reynolds number]

<Mukherjee>

12. **Sir Humphrey Gibbs unsuccessfully tried to dismiss the cabinet of this country. The Byrd Amendment allowed the United States to purchase chromium from this country despite U.N. sanctions. Following the Internal Settlement, control over this country was transferred to men like Abel Muzorewa. The Second Chimurenga (shim-uh-REN-guh) was fought in this country and is often called its (*) "bush war." The government of this nation officially banned political groups like ZAPU and ZANU. This country's 1965 Unilateral Declaration of Independence violated the British principle of "no independence without majority rule." For 10 points, name this erstwhile country ruled by the minority white government of Ian Smith, now known as Zimbabwe.**

ANSWER: Southern Rhodesia [or Zimbabwe or Zimbabwe Rhodesia before mentioned]

<Bentley>

13. One character in this work describes a woman who used to cut up snakes and sell their flesh as fish. Another character in this story is a recently-discharged servant with a pimple on his cheek, who waits for the rain to stop and worries that he will have to become a thief. At the end of this story, the servant kicks an old hag and steals her cloak, leaving her naked, claiming he needs it to survive. The hag had been taking (*) hair off of corpses in the title location in order to make wigs. This story was combined with its author's other story "In a Grove" to form the plot of a Kurosawa film. For 10 points, name this story by Ryunosuke Akutagawa, which is set at a namesake gate in Kyoto.

ANSWER: "Rashomon"

<Bollinger>

14. This composer's second symphony ends with all twelve notes of the chromatic scale played simultaneously. One of his *Two Contemplations* consists of six increasingly agitated phrases of flute music, which separate seven iterations of an unchanging trumpet melody that ends with a rising inflection. Throughout his symphonies, this composer frequently quoted songs such as "Columbia, the Gem of the Ocean" and (*) "Camptown Races." He paid homage to the transcendentalists in his second piano sonata, which is nicknamed "*Concord*". After attending Yale, this modernist supported himself by working as an insurance executive. For 10 points, name this American composer of *The Unanswered Question* and *Three Places in New England*.

ANSWER: Charles Ives

<Thompson>

15. A memorable passage in this work describes a family camping trip before asking, "is this, indeed, the American Genius?" This text was expanded on in a later tract exploring the widespread "technostructure" that prioritizes stasis over efficient risk-taking. This work posits that demand no longer arises "organically" from needs but is instead directed by (*) advertising, and dismisses classical economics as irrelevant to a consumer state. This work calls for a renewed public investment, especially in education, after criticizing the "conventional wisdom" that no longer applies to post-World War II America. Warning of a widening income disparity within the titular social order, for 10 points, identify this 1958 work by John Galbraith.

ANSWER: *The Affluent Society*

<Ray>

16. This deity was honored at the Ekdysia festival after she turned the daughter of Lamprus and Galatea into a son. After the people of Lycia refused to let her drink from a lake, this goddess turned them into frogs. She was almost raped by a giant who is stretched across several miles in Tartarus, named Tityos. Along with her sister Asteria, this goddess was the daughter of Coeus and Phoebe. She and her lover had sex in the form of quails. For attracting the eye of (*) Zeus, Hera ordered Python to endlessly pursue this figure, who wandered the world until ending up on Delos to give birth. Niobe boasted that her children were more attractive than the children of this goddess. For 10 points, name this goddess, the mother of Apollo and Artemis.

ANSWER: Leto

<Mukherjee>

17. One artist from this country designed the cover of the first issue of 1893's *The Studio* and gained fame for his line-block drawings of *Salome*. Another painter from this nation used historically accurate costumes in his *The Finding of the Savior in the Temple* and was a compatriot of the artist of candlelit scientific scenes like *An (*) Experiment on a Bird in the Air Pump*. An Italian-born artist working in this country painted a woman with her eyes closed in *Beata Beatrix*. An earlier artist born here created *Marriage a la Mode* and depicted the title figure ending up in Bedlam in his series, *A Rake's Progress*. For 10 points, name this country home to the Pre-Raphaelite Brotherhood and William Hogarth.
ANSWER: England [or Great Britain; or the United Kingdom; or the U.K.]

<Bentley>

18. This work's third chapter ends with the line "The ciborium had come to him". A girl named Emma inspires one character in it to write a villanelle that repeats the question "Are you not weary of ardent ways?" This book's protagonist gets beaten with a cabbage stump by Heron for preferring Byron over Tennyson and discusses Aquinas's theory of beauty with Cranly. In the first section of this novel, Mr. Casey and (*) Dante Riordan argue about the death of Charles Parnell. Its protagonist has an epiphany when he makes eye contact with a solitary girl wading in the sea and is inspired to religiosity by Father Arnall's sermon on hell. It begins with a story involving a "moocow" meeting "baby tuckoo". For 10 points, name this 1916 novel about Stephen Dedalus by James Joyce.

ANSWER: A Portrait of the Artist as a Young Man

<Gioia>

19. A group of Supreme Court cases named for this movement included *Stone v. Wisconsin*. In a political cartoon about this movement, men take the place of railroad ties underneath tracks, as the "Consolidation Train" approaches and a figure "awakens the sleepers." The Anti-Monopolist Party was formed out of this movement by the "Prince of Cranks," Ignatius Donnelly. This movement won a great success in 1876, when Morrison (*) Waite wrote the opinion in the *Munn v. Illinois* case about grain elevator rates. This movement was founded in Minnesota by a Department of Agriculture employee who wished to modernize Southern farming practices, Oliver Hudson Kelley. For 10 points, name this populist movement which advocated for the interests of farmers.

ANSWER: granges [or Granger movement, etc; or Patrons of Husbandry]

<Weiner>

20. One method of detecting this process is Annexin-A5 binding. This process is inhibited by bcl-2, and the binding of the Fas receptor to its ligand is one trigger for it. Another pathway for activating it relies on Apaf-1 binding to cytochrome c released from mitochondria. During it, a chain reaction of caspase activation occurs. During this process, DNA is cleaved into a ladder pattern and the cell membrane forms (*) blebs. Cancer cells are able to evade signals that trigger this process. *C. Elegans* undergoes 131 instances of it during development, and it also occurs on the webs between toes during human development. Unlike necrosis, this process is orderly, neat, and a normal cellular function. For 10 points, name this type of programmed cell death.

ANSWER: apoptosis [or programmed cell death before mention, prompt on "cell death" or "death"]

<Mukherjee>

21. The slogan " $4 + 3 = 1$ " is used to promote the unification of these people. Soldiers of this ethnicity surrendered to the Italians in the Santana Treason, and a terrorist group associated with these people attacked a nuclear power station at Lemoiz. These people were represented by the now-outlawed (*) Batasuna party. Mark Kurlansky's history of this people traces their control of the cod fishing industry. These people traditionally live between the Ebro and Adour rivers. A group advocating for their independence was erroneously blamed for the 2004 train bombings in Madrid and goes by the name ETA. For 10 points, name this ethnic group, divided between France and Spain, that speaks a language unrelated to any others.

ANSWER: **Basques** [or **Vasco**; or Vascongado **Basque**; or **Euskaldunak**; or **Euskotarak**; prompt on "Spanish" before Spain is mentioned in the giveaway]

<Bentley>

22. A sentence in one version of this story was described by its author as "grammar gone to seed"; that version of this story was "clawed back into a civilized language once more" from a French translation found by its author. Its frame narrative is set in a tavern in Angels Camp and involves the narrator's search for a man named Leonidas. The central character of this story once speculated on the fate of Parson Walker's wife and owns a bulldog named (*) Andrew Jackson. Simon Wheeler relates this story's central anecdote, in which a stranger uses some quail shot to win a forty-dollar bet with Jim Smiley, the proud owner of Dan'l Webster. For 10 points, identify this story about a talented amphibian, a work of Mark Twain.

ANSWER: "The **Celebrated Jumping Frog of Calaveras County**" [or "The **Notorious Jumping Frog of Calaveras County**"; or "**Jim Smiley and his Jumping Frog**"; or "The **Jumping Frog**"]

<Carson>

23. These cells are maintained by the secretion of leukemic inhibitory factor, and one method of creating them involves transfection with SOX2, Klf2, and Oct-4. The transcription factor NANOG is highly regulated by these cells. After forming cylindrical bodies they are grown on a lawn of mitomycin-c and fibroblasts. These cells are missing the checkpoint between G1 and S phases. These cells have a tendency to form teratomas, and are extracted from the inner cell mass of a (*) blastocyst. Therapeutic cloning is a potential application of these cells. These cells are pluripotent, meaning they have the ability to form almost any tissue in the human body. For 10 points, name these cells, which are extracted from human embryos.

ANSWER: embryonic **stem cells** [do NOT accept "adult stem cells" at any point; accept **IPS** or **induced pluripotent stem cells** before "inner cell mass", prompt after]

<Mukherjee>

24. One section of this work alludes to widespread death by listing "no trembling harp, no tuned timber, no tumbling hawk" and "no swift horse". A passage about Finn and his sons is another of this work's "four funerals", which also include the Lay of the Last Survivor. It is found in Cotton Vitellius A.xv, also known as the Nowell Codex. Its protagonist is twice failed by swords, and is prompted by the death of (*) Aeschere to dive into a reptile-infested lake in search of a descendant of Cain. That protagonist is mortally wounded while fighting a dragon with Wiglaf. Shortly after it begins, its title character arrives at the mead hall of Heorot to assist the Danish king Hrothgar. For 10 points, name this Old English epic about a Geatish hero who kills Grendel.

ANSWER: **Beowulf**

<Carson>

1. This figure acts when a priest and Levite fail to do so. For 10 points each:

[10] Identify this figure from a parable of Jesus. Despite being the member of a disliked minority, he comes to the rescue of a man who was attacked by robbers.

ANSWER: **Good Samaritan** [accept **Man from Samaria**]

[10] Another parable of Jesus tells of a rich man who descends into Hell and this poor beggar who enters the kingdom of heaven. This man shares his name with another figure, the biblical brother of Mary and Martha.

ANSWER: **Lazarus**

[10] A third parable tells of a woman who loses one of these objects and then rejoices when she finds it again. Jesus says the woman's joy at finding it can be compared to the angels rejoicing at repenting sinners.

ANSWER: a **coin** [accept **drachma**]

<Cheyne>

2. This movement introduced a type of holistic plot analysis called "fabel", an acting style called "gestus", and principles like the separation of elements and the distancing effect. For 10 points each:

[10] Name this early-20th-century dramaturgical movement which moved away from Aristotelian drama. It was pioneered by works like *The Resistible Rise of Arturo Ui* and *The Rise and Fall of the City of Mahoganny*.

ANSWER: **epic** theater [or **episches** Theater; or **dialectical** theater]

[10] The most prominent pioneer of epic theater was this German author of *The Caucasian Chalk Circle* and *The Good Person of Szechwan*, who collaborated with Kurt Weill on *The Threepenny Opera*.

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

[10] Katrin, Eilif, and Swiss Cheese all die during the course of this Brecht play. Its protagonist Anna Fierling is a Swedish canteen woman during the Thirty Years War.

ANSWER: **Mother Courage and her Children** [or **Mutter Courage und ihre Kinder**]

<Carson>

3. Answer the following about historiographical controversies, for 10 points each.

[10] This term refers to the demonization of Spain and the Spanish Empire by Protestant opponents. It is alleged to include exaggerations of the cruelty of the Inquisition and the Conquistadors.

ANSWER: the **black legend** [or la **leyenda negra**]

[10] Ernst Nolte's 1986 article "The Past That Won't Go Away" sparked the "Historikerstreit" or "Historians' Quarrel" of this country. The controversy focused on whether the expulsion of this country's ethnic compatriots from Eastern Europe and human rights violations by Communists were or were not comparable to war crimes committed by this country's own government and people during World War II.

ANSWER: **Germany** [or **West Germany**, as it was at the time]

[10] Conservative historian Keith Windschuttle sparked a nationwide outcry with several books arguing that this ethnic group's history has been "fabricated." Windschuttle opposes reparations to this people, who are currently apologized to annually on a holiday known until 2005 as National Sorry Day.

ANSWER: **Aborigines** [or **indigenous Australians**, etc.]

<Weiner>

4. Answer the following about different types of syzygy, for 10 points each:

[10] The most common type of syzygy, or straight line alignment of 3 celestial bodies, is this event where one body, usually the sun or moon, is partially or totally in the shadow of another body.

ANSWER: **eclipse**

[10] When a planet that is inferior to another passes in between that planet and the sun, this event occurs. This also names any event where one astronomical body passes in front of another as seen from Earth.

ANSWER: **transit**

[10] For Mercury or Venus to transit the sun as seen from Earth, they must be in the inferior type of this alignment. It is immediately preceded and followed by great elongations.

ANSWER: **conjunction**

<Lasker>

5. Examples of these phenomena include the Rubin vase, in which confusion over figure and ground leads the viewer to see either a vase or two faces. For 10 points each:

[10] Name these phenomena in which the visual system is "fooled" into seeing something that isn't actually there.

ANSWER: optical **illusions**

[10] This foundational illusion of Gestalt psychology involves the apparent movement of a background object when a series of still images is shown. It is contrasted with beta movement, in which the foreground image appears to move instead.

ANSWER: **phi** phenomenon

[10] In this other illusion, two horizontal lines with the same length appear to have differing lengths based on whether the arrows on each side of the line point inward or outward.

ANSWER: **Muller-Lyer** illusion

<Wynne>

6. For 10 points each, name these Italian composers.

[10] Nicknamed "the Red Priest," this Baroque composer wrote sonnets accompanying the four violin concertos he published as *The Four Seasons*.

ANSWER: Antonio **Vivaldi**

[10] This 19th century composer wrote bel canto operas such as *Don Pasquale*, *The Elixir of Love*, and *Lucia di Lammermoor*.

ANSWER: Gaetano **Donizetti**

[10] This composer paid homage to J. S. Bach's fugues in his forty-minute long keyboard work *Fantasia contrappuntistica*. His name is often hyphenated with Bach's, referring to his extensive piano transcriptions of Bach's music.

ANSWER: Ferruccio **Busoni**

<Magin>

7. This thinker offered the answer "will nothingness" to the question "What is the meaning of ascetic ideals?" in the third essay of one of his books. For 10 points each:

[10] Name this author of *On the Genealogy of Morals*, in which he also theorized the master-slave morality and the will to power.

ANSWER: Friedrich Wilhelm Nietzsche

[10] Nietzsche's most famous idea is encapsulated in this three word quotation uttered by a madman with a lantern in *The Gay Science*, which suggests that absolute moral principles must be derived from elsewhere.

ANSWER: "**God is dead!**" [or "**Gott ist tot!**"]

[10] In Zarathustra's conversations with a dwarf, this other Nietzschean idea is compared to two roads running through a gateway. It states that the universe will continually cycle through self-similar phases, and coming to terms with it is said to require *amor fati*.

ANSWER: eternal recurrence [or eternal return; or die ewige Wiederkehr]

<Jackson>

8. In this novel, Coalhouse Walker breaks into J.P. Morgan's library to get his Model-T back and to take revenge for Sarah's death. For 10 points each:

[10] Name this novel that follows several interwoven stories, such as those of Harry Houdini, Evelyn Nesbit, and Tateh and his daughter.

ANSWER: Ragtime

[10] This author of *Ragtime* fictionalized the Rosenbergs' trial in *The Book of Daniel* and created a surrogate son of Dutch Schultz in *Billy Bathgate*.

ANSWER: Edgar Lawrence Doctorow

[10] Doctorow's speech "A Citizen Reads the Constitution" was included in a collection named in part for this author, whose works include the early dystopian novel *The Iron Heel* and a novel about Buck's harsh life as a sled dog called *The Call of the Wild*.

ANSWER: Jack London [or John Griffith London; or John Griffith Chaney]

<Neithalath>

9. Andrew Jackson hated this entity with a passion and changed his Secretary of the Treasury twice just to kill it. For 10 points each:

[10] What institution, directed by Nicholas Biddle, failed in 1841 after Jackson vetoed its re-charter bill?

ANSWER: Second Bank of the United States [accept Second National Bank; prompt on partial answer]

[10] This man, who was appointed Secretary of the Treasury after William Duane, finally pulled money out of the Bank as Jackson asked.

ANSWER: Roger Brooke Taney

[10] The Second National Bank was unable to prevent this first major financial crisis of the United States, which partly stemmed from the public debt accrued from the Louisiana Purchase.

ANSWER: The Panic of 1819

<Ueda>

10. In Euglenozoa, this structure contains a crystalline rod of unknown function, and stramenophiles have both a smooth one and a hairy one. For 10 points each:

[10] Name these long whiplike projections used by single-celled organisms for propulsion. They extend from the basal body and contain 9 doublets of microtubules around a central doublet.

ANSWER: **flagellum** [or **flagella**]

[10] These single-celled alveolate protists have two flagella that whip around a central groove in their plated cellulose armor. Rapid reproduction of members of this phylum causes red tides.

ANSWER: **dinoflagellates** [or **dinoflagellata**]

[10] Dinoflagellates can synthesize neurotoxins, like saxitoxin. Saxitoxin is similar to this other sodium-channel-blocking neurotoxin found in fugu pufferfish, which is lethal at very low concentrations.

ANSWER: **tetrodotoxin** [or **TTX**]

<Mukherjee>

11. Answer the following about Titanesses, for 10 points each.

[10] Mnemosyne, the personification of memory, is the mother of these nine goddesses who govern the sciences and the arts.

ANSWER: **Muses**

[10] This ocean goddess was the wife and sister of Oceanus. Her name was used to denote the Mesozoic-era ocean which divided the continents of Gondwanaland and Laurasia.

ANSWER: **Tethys**

[10] This goddess of divine order is the mother of the Hours and the Fates.

ANSWER: **Themis**

<Gupta>

12. This author asserted that "the proper study of mankind is man" in a work written in heroic couplets and depicted the goddess Dulness choosing Lewis Theobald and Colley Cibber as her champions in various versions of another work. For 10 points each:

[10] Name this 18th century British poet, who wrote "An Essay on Man" and *The Dunciad* and also penned the mock epic "The Rape of the Lock".

ANSWER: Alexander **Pope**

[10] This Pope work, also in heroic couplets, begins by claiming "'Tis hard to say if greater want of skill / appear in writing or judging ill". It includes the axioms "fools rush in where angels fear to tread" and "a little learning is a dangerous thing".

ANSWER: "An **Essay on Criticism**"

[10] Pope caricatured Joseph Addison and John Hervey as "Atticus" and "Sporus" in this satire, which coined the phrase "damn with faint praise" and was written to memorialize the death of a member of the Scriblerus Club.

ANSWER: **Epistle to Dr. Arbuthnot**

<Gioia>

13. Marines were sent to aid this country's Maronite Christian prime minister Camille Chamoun in Operation Blue Bat, and a fifteen-year civil war here was ended by the Taif Agreement. For 10 points each: [10] Name this nation that was invaded by Israel in a 1982 war that saw several Palestinian refugees massacred at Sabra and Shatila. Syrian troops pulled out of this nation in 2005.

ANSWER: **Lebanon**

[10] This terrorist group, whose name means "Party of God", was trained by Iranian forces and created during the 1982 Israeli invasion. It's led by Hassan Nasrallah and joined the government in 2011.

ANSWER: **Hezbollah**

[10] The 2005 Cedar Revolution was set off by the assassination of this former prime minister of Lebanon and creator of the Horizon 2000 reconstruction plan. Syria and Hezbollah were both implicated in his death.

ANSWER: Rafik **Hariri**

<Mukherjee>

14. Identify some pieces of laboratory glassware, for 10 points each:

[10] This flat-bottomed conical flask named for a German chemist isn't terribly accurate for measuring solutions but is commonly used to store and mix solutions together.

ANSWER: **Erlenmeyer** flask [prompt on "conical flask" or "conical" since it was mentioned in the question]

[10] These devices, one type of which is named for Pasteur, suck up and dispense a set amount of liquid. Those used in molecular biology commonly have disposable tips.

ANSWER: **pipette**

[10] If a solution can produce poisonous vapor, one commonly works in one of these devices, which is a negative pressure chamber with a glass sash that can be lowered to protect the user.

ANSWER: fume **hood** [or fume **cupboard**]

<Mukherjee>

15. Answer the following about the rise of the far-right in Europe, for 10 points each.

[10] In this country, the author of the far-right anti-Marxist manifesto 2083, Anders Breivik, killed 69 people on the island of Utoya.

ANSWER: Kingdom of **Norway**

[10] This candidate of the National Front Party ran for election in 2012 on a platform including a moratorium on legal immigration and pulling out of NATO. Her father was also a notable French right-wing politician.

ANSWER: **Marine Le Pen** [first initial required to distinguish from Jean-Marie Le Pen, her father]

[10] This other far-right party is headed by Nick Griffin, who controversially appeared on *Question Time* in 2009. This party has been characterized as proto-Nazi and anti-Islam.

ANSWER: **British National Party** [or **BNP**]

<Mukherjee>

16. This album featured its leader's namesake "sheets of sound" on its rendition of "Summertime." For 10 points each:

[10] Name this jazz album released in 1961, which consists of four re-interpretations of pop standards. Its title track is a version of a Rodgers and Hammerstein standard from *The Sound of Music*.

ANSWER: **My Favorite Things**

[10] This jazz saxophonist recorded *My Favorite Things* with his quartet, which included Elvin Jones on drums and McCoy Tyner on the piano. He also released the album *Giant Steps*.

ANSWER: John **Coltrane**

[10] Coltrane created this album as a four part suite with movements titled "Acknowledgement" and "Resolution." Its final movement, "Psalm," features "musical narration" of a spiritual poem that appears in the liner notes and ends "Thank you God. Amen."

ANSWER: A **Love Supreme**

<Gioia>

17. A dictator of this country makes an appearance as "the Big Man" at the end of a novel set here titled *The Yacoubian Building*. For 10 points each:

[10] Identify this country home to the author of *Midaq Alley*, *Children of Gebelawi* and *Sugar Street*.

ANSWER: Arab Republic of **Egypt** [or **Misr**; or **Kimi**; or **Keme**]

[10] Naguib Mahfouz is best known for a trilogy of novels, including *Palace Walk* and *Palace of Desire* as well as the aforementioned *Sugar Street*, titled for this Egyptian city.

ANSWER: **Cairo** [or al-**Qahira**]

[10] Alaa Al Aswany, the author of *The Yacoubian Building*, wrote about a group of Egyptian ex-pats living in this American city in a 2007 novel. This city was also the setting of a trilogy of books about Studs Lonigan by James T. Farrell.

ANSWER: **Chicago**, Illinois

<Bentley>

18. The constant appearing in this law was first approximated using a torsion balance by Henry Cavendish and is equal to about 6.67 times 10 to the negative 11th in SI units. For 10 points each:

[10] Identify this law which gives the gravitational attraction between two bodies as proportional to the product of their masses divided by the square of the distance of their centers apart.

ANSWER: **Newton**'s Law of Universal Gravitation

[10] The period of these phenomena can be derived by using Newton's Law of gravitation and considering a system in which the Moon is pulling on a ring of deformable liquid surrounding the earth as it orbits.

ANSWER: **tides**

[10] A set of differential equations that describe tides are named for this Frenchman. He also names an operation symbolized del squared that equals the sum of the partial second derivatives of a function.

ANSWER: Pierre-Simon **Laplace**

<Mukherjee>

19. This group's aircraft units were commanded by Hugo Sperrle. For 10 points each:

[10] Name this special German Air Force and Army unit that was sent to intervene in the Spanish Civil War, culminating in the 1937 terror bombing of Guernica.

ANSWER: **Condor Legion** [or **Legion Condor**]

[10] The Spanish Civil War ended when this right-wing generalissimo set up a dictatorship that lasted until 1975. He pursued a policy of neutrality during World War II.

ANSWER: Francisco **Franco** y Bahamonde

[10] This right-wing Spanish party, which came to lead the Francoist movement, was founded by Jose Antonio Primo de Rivera, who wanted to set up a fascist government in Spain.

ANSWER: **Falange** [or **Spanish Phalanx of the Assemblies of the National Syndicalist Offensive**; or **Falangists**]

<Cheyne>

20. Three nude women, including one who is putting on green socks, stand in front of this painting in the artist's later work, *The Models*. For 10 points each:

[10] Identify this painting by a contemporary of Paul Signac whose figures include a man playing a trumpet and four men in white rowing a boat. A man smokes a pipe in the foreground of this work.

ANSWER: *A Sunday Afternoon on the Island of **La Grande Jatte*** [or *Un dimanche après-midi à l'Île de **la Grande Jatte***; or *A Sunday Afternoon at the Isle of **La Grande Jatte***]

[10] Georges Seurat's *A Sunday Afternoon on the Island of La Grande Jatte* was painted in this style, which composes images from small dots of pure color.

ANSWER: **Pointillism** [or **Divisionism**; prompt on "Neo-Impressionism"]

[10] It's not green, but Paul Signac created a pointillist seascape titled for a sail with this color. Van Gogh and Gauguin spent time together in a house of this color on the Place Lamartine, with Van Gogh decorating it with his sunflower paintings.

ANSWER: **Yellow** [or **jaune**]

<Bentley>

21. This man gained power after leading a coup against Roger Mortimer, whom he killed at Nottingham Castle with the help of the Earl of Salisbury. For 10 points each:

[10] Name this king, who ruled during England's victories at Crecy and Neville's Cross as well as the opening of the Good Parliament.

ANSWER: **Edward III** [prompt on "Edward"]

[10] Edward III's reign included this event, which prompted the passage of the Statute of Laborers. It killed one third of Europe.

ANSWER: the **Black Death** [prompt on "bubonic plague", etc.]

[10] This son of Edward III and Philippa of Hainault got his name from his colored armor. He led the Poitiers Campaign and supported Pedro the Cruel in the Najera campaign.

ANSWER: Edward the **Black Prince** [prompt on "Edward"]

<Mukherjee>

22. These numbers can be discovered using the Lucas-Lehmer test, which is the method used by the GIMPS effort. For 10 points each:

[10] Identify this particular type of prime number which is one less than a power of two. They are named for a French mathematician.

ANSWER: **Mersenne** primes [or **Mersenne** numbers]

[10] Euler showed that all even types of these numbers have the form of a Mersenne number. These numbers are neither abundant nor deficient.

ANSWER: **perfect** numbers

[10] This is a number that has factors other than 1 and itself. Put simply, all integers greater than 1 are either prime or this type of number.

ANSWER: **composite**

<Mukherjee>

23. This character initially opposes the match between her niece, Lydia Languish, and Captain Jack Absolute. For 10 points each:

[10] Identify this character from the 1775 comedy *The Rivals*, also known for saying things like "she's as headstrong as an allegory on the banks of the Nile" and "he is the very pine-apple of politeness".

ANSWER: Mrs. **Malaprop**

[10] Mrs. Malaprop is a creation of this Irish author of *Pizarro*, *The Duenna* and *The School for Scandal*.

ANSWER: Richard Brinsley **Sheridan**

[10] In this other Sheridan play, characters like Mr. Sneer and Sir Fretful Plagiary cause a ruckus in Mrs. Dangle's kitchen. Plagiary eventually puts on a play-within-a-play set during the reign of Queen Elizabeth.

ANSWER: *The **Critic**: Or, A Tragedy Rehearsed*

<Bentley>