

Tossups

1. **After a recitative in this opera, a solo chromatically descending line starting on G in the bass establishes G minor as the key for one aria. The "Triumphing Dance" ends the first act, which is followed by a "Prelude for the Witches" to begin the second act that takes place in a cave where an elf is told to disguise himself as (*) Mercury; that disguised character convinces a man to leave with a group of sailors, which inspires a woman to kill herself. The aria "Ah! Belinda" appears in this opera, as does another with the lyrics, "remember me, but ah! forget my fate." This opera includes a famous example of ground bass and has a libretto by Nahum Tate. For 10 points, name this opera that includes "When I am laid in earth," the first title character's "Lament," which was written by Henry Purcell.**

ANSWER: *Dido and Aeneas*

2. **During a game at the protagonist's home in this novel, one character makes the word "blunder" and then "Dixon," the latter of which angers a woman and seems to confirm suspicions of that woman's affair with Mr. Dixon. In this novel, a party delays a trip to Box Hill to wait for a horse's recovery, but in the meantime they go to Donwell Abbey where a female rejects an opportunity to become a governess. The protagonist of this novel insults her talkative aunt, (*) Miss Bates, and sabotages a potential relationship involving Robert Martin by suggesting that Harriet reject him. At the end of this novel, it is revealed that Frank Churchill has been secretly engaged to Jane Fairfax. For 10 points, name this novel that ends with the marriage of Mr. Knightley and the title matchmaker written by Jane Austen.**

ANSWER: *Emma*

3. **This composer adapted the theme from one of his sacred concertos for SATB choir into the principal theme of a concerto finale; that concerto begins with half notes on the lowest F on the keyboard after each of eight unaccompanied chords in the solo piano part. Another of this composer's works begins with a rhythmic motif of quarter, dotted-quarter in (*) 5/8. This composer recovered from the psychological breakdown that followed the failure of his first symphony and later wrote a work whose beginning section depicts the movement of oars in the water. Besides the *Piano Concerto No. 2 in C minor* and three other piano concertos, this composer wrote a theme and 24 variations based on the last of a set of caprices. For 10 points, name this composer of *Rhapsody on a Theme of Paganini*.**

ANSWER: Sergei Vasilievich *Rachmaninoff*

4. **Its first section uses the example of light refracting in a prism and the yellow body of a jaundiced victim to argue that no human has a true color. It uses the example of a man looking at a picture of Julius Caesar to conclude that archetypes can only be inferred by some mental faculty. The second section defines an occasion as an inactive unthinking being and rejects the possibility that the views of Malebranche are correct. The conceivability of certain items are rejected when this work puts forth the (*) master argument. Using its first title character as a philosophical opponent representing John Locke, this work ultimately favors idealism over materialism, and it is an update of the author's *A Treatise on the Principles of Human Knowledge*. For 10 points, name this book by George Berkeley.**

ANSWER: *Three Dialogues Between Hylas and Philonous*

5. **This group is susceptible to infection by *Chiroisia betuleti*, which causes Knotting gall. The family *salviniaceae* contains small, free-floating examples of this division of organisms, which had a huge radiation in the late Cretaceous period. The indusium is a scaly covering for the sorii of these organisms. This division**

is characterized by a small (*) heart-shaped gametophyte stage called the prothallus. This group, which includes marattoids, psilotales, leptosporangiates, and horsetails, are more evolved than lycophytes due to having megaphylls on their true leaves. These organisms are among the first evolutionarily to have xylem and phloem. For 10 points, name these seedless vascular plants, whose leaves are called fronds.

ANSWER: ferns [or pteridophyta]

6. One protectionist economic program in this country called “Think Big” prompted two economic liberalization programs by successive governments called Ruthanasia and Rogernomics. This country’s Fourth National Government held a 1993 constitutional referendum that adopted a Mixed Member Proportional electoral system, making it the first (*) Commonwealth country to do so. One opposition leader in this country said a certain policy would be “gone by lunchtime” if he became prime minister; that policy was this country becoming a nuclear-free zone during the Fourth Labour Government of David Lange. The French DGSE blew up a Greenpeace ship in this country. For 10 points, name this Pacific island nation that was the site of the bombing of the *Rainbow Warrior* in the harbour of Auckland.

ANSWER: New Zealand [or Aotearoa]

7. In Hinduism, this practice is used to enable religious services called Karmkand and is known as Bhiksha. In Sikhism, this practice was established based on the doctrine of Vand Chhako and is called the Dasvand. The Hebrew word for this practice translates as “righteousness”, and Maimonides outlined eight levels of it in the (*) Hilkhhot matanot anyim of the Mishan Torah. In Islam, the nisab establishes who is eligible for this practice, and saddakah is an optional form of this practice. The fact that non-Muslims are exempt from it is the basis of the Jizya. For 10 points, name this practice, which is called Zakat in Islam and in Christianity is accomplished by passing around a collection plate.

ANSWER: giving to charity [or alms-giving]

8. At the end of this play, a woman takes the Bride offstage while telling her to “Turn your mind only to the unborn” after closing a dead man’s eyes. This play includes a scene in which a policeman is shocked to see his boss and his wife dancing, which causes him to break a flowerpot; that scene follows one in a market where a woman agrees to let another man sleep with her son’s soon-to-be wife, which results in that girl getting (*) pregnant. At the beginning of this play, the title character sings of the “Not-I bird” during a conversation with the Praise-Singer in Iyaloja’s district. When another character, who had just finished schooling in Europe, finds his father bound by Jane’s husband, he kills himself; that character is Olunde. For 10 points, name this play in which Simon Pilkings interrupts Elesin’s ritual that was written by Wole Soyinka.

ANSWER: Death and the King’s Horseman

9. One ruler with this title married Bertha of Sulzbach, which led to an alliance with her brother-in-law, Conrad III of Germany. One ruler with this title gained the submission of Raynald of Chatillon after that ruler retook Cyprus. One work about a ruler with this title claimed that his policies had led to the death of the implausible number of (*) “ten thousand times ten thousand times ten thousand”; that work was Procopius’s *Secret History*. The last ruler to hold this title is said to have exchanged his ceremonial clothing for armor and died fighting invaders in 1453; that ruler was Constantine XI. For 10 points, name this title held by men such as Manuel I of the Komnenos Dynasty and Justinian the Great, both of whom who ruled the Eastern Roman Empire.

ANSWER: Byzantine emperors [or Eastern Roman Emperor before “Eastern” is read; prompt on “Roman Emperor”; prompt on “Greek Emperor”; prompt on stuff like “imperator”]

10. This man names the quantum equivalent of the Lorenz gauge, in which the gauge-breaking parameter tends to zero, and he derived the expression for the diamagnetism of a free-electron gas. The quantized cyclotron orbits of a charged particle in a magnetic field are named for him. After his death Pitaevskii

replaced him as an author of the 10-volume *Course In Theoretical Physics*. Another theory named for him sets the free energy as a Taylor expansion of the (*) order parameter, and describes second-order phase transitions. Gilbert modified one equation named for him to describe the precession of magnetization, and this man won a Nobel prize for a theory that described the superfluidity of Helium II. For 10 points, name this man who names a formula for the time evolution of magnetization of a solid with Lifshitz and a phenomenological theory of superfluidity with Ginzburg.

ANSWER: Lev Davidovich Landau

11. One of this god's daughters married the personification of the Hydaspes River and was named Astris, and this god was the father of Bisalte, a son of Gaia. Among this god's daughters are one that carries a copper staff allowing her to control a group of animals. After this deity, the father of Phaethusa and Lampetia, was shot with an arrow, he loaned his (*) golden cup to Heracles. Odysseus' men stole the cattle belonging to this deity, and one group of this deity's daughters turned into weeping poplar trees after their brother fell into the Eriadnos river. After swearing an oath on the River Styx, this man was forced to allow a son of Clymene to use his chariot, with predictably negative consequences; that son was Phaethon. For 10 points, name this sun god of Greek mythology.

ANSWER: Helios

12. At a wedding in this novel, a woman tries to skip the long line for the bathroom by handing her panties to the protagonist and peeing in bushes. When the main character of this work gets bullied, his coins and baseball cards fall out of his pockets, and the teacher Mrs. Walker blames him for the mess. The protagonist of this work has a nasally voice that is represented with all caps. At an airport, the protagonist of this novel uses his technique of "the (*) shot" to save a group of Vietnamese orphans in the bathroom by pushing a grenade into a window. The main character, who loves the rock star Hester the Molester, finally gets to swing in little league, but he hits a foul ball that kills Tabitha. The narrator, John Wheelwright, describes how the tiny main character of this work is the reason he believes in god. For 10 points, name this novel about a religious boy by John Irving.

ANSWER: *A Prayer for Owen Meany*

13. One person with this surname wrote the racist work *Foundations of the Nineteenth Century*. Another person with this surname proposed the "Unauthorized Programme", split his party with Lord Devonshire to found the Liberal Unionists, and was the Secretary of State for the Colonies during the Boer War. Another person with surname shared the 1925 (*) Nobel Peace Prize with Charles Dawes for his work on the Locarno Treaties. That politician, Austen, was the half-brother of a prime minister who declared "peace for our time" when returning from the Munich Conference. For 10 points, name this surname of Neville, a British prime minister who appeased Hitler and was succeeded by Winston Churchill.

ANSWER: Chamberlain [or Houston Stewart Chamberlain, Joseph Chamberlain, Austen Chamberlain, and Neville Chamberlain]

14. One island in this body of water was commonly described as Europe's last feudal state until a 2008 referendum. The deepest point in this body of water is Hurd's Deep. The world's first large-scale tidal plant was built on the estuary of the Rance River, which flows into this here. The Solent is a smaller, parallel body of water north of this one. The Cotentin Peninsula juts into this body of water which contains islands such as Sark, Guernsey, (*) Jersey, and the Isle of Wight. This is the largest body of water crossed by the Eurostar train. Ports on this body of water include Cherbourg, Le Havre, Portsmouth, and Southampton. The narrowest point in this body of water is between Pas de Calais and the white cliffs of Dover. For 10 points, name this body of water that lies between France and the United Kingdom.

ANSWER: English Channel [or *La Manche*]

15. This artist drew a god-figure flying near some clouds while Eve draws Adam's attention to the fruit in a tree in a painting of "The Earthly Paradise" in a series including "The Spies with the Grapes of the Promised Land;" that series is *The Four Seasons*. A man raises his red cloak with his left hand from atop a pedestal on the left of a painting by this artist who depicted a cherub blowing bubbles at the bottom left of a painting that also includes (*) Aurora leading Apollo's chariot in the sky near the ring of the zodiac; that painting features a winged old man on the right playing a lyre. This artist showed a woman in gold and blue placing her hand on the back of one of three shepherds at a tomb inscribed with the title phrase. For 10 points, name this painter of *A Dance to the Music of Time* and *Et in Arcadia ego*.

ANSWER: Nicolas Poussin

16. Before one attempt to take this city, Admiral Walker had a hard time finding any navigator in Boston. During an earlier attempt to take this city, Major Thomas Savage was led blindfolded in circles in its streets to mask the numerical inferiority of its defenders. The commander of this city then indicated that his cannons would make the reply to the surrender request of Governor of the Massachusetts Bay Colony, Sir William (*) Phipps. In another attempt, Daniel Morgan was captured and Richard Montgomery was killed outside this city, which he had tried to take alongside Benedict Arnold. This city was also the site where Montcalm was defeated Wolfe on the Plains of Abraham in 1759. For 10 points, name this city with a Citadel, the capital of a namesake modern, French-speaking province of Canada.

ANSWER: Quebec City [or *la Ville de Québec*]

17. Problems that can be solved by this field can be produced from more general problems by the Charnes-Cooper transformation. One popular algorithm in this field can cycle when not choosing the lowest-indexed pivot according to Bland's rule. The degenerate cube suggested by Klee and Minty showed the exponential running time of some algorithms in this field like the criss-cross algorithm. One algorithm in this field creates a (*) polytope representing a feasible region before traversing the edges of that polytope. Problems can be converted using non-negative slack variables in order to use Dantzig's simplex method in this field. Methods in this field maximize an objective function according to some constraints. For 10 points, name this technique to solve optimization problems of the namesake form.

ANSWER: linear programming [prompt on partial answers]

18. One chapter of this work opens with a quote about eating pineapples on the moon to illustrate the weakness of strong states. One chapter of this book states Asian economies have grown faster than Latin American ones because of less state intervention, and is entitled "The Victory of the VCR". Another part of this work draws upon Plato's idea of the *thymos* to state that humans are motivated by both economic self-interest and by self-esteem. A key idea of this work is that industrialization and high technology cannot exist alongside (*) despotic governments, meaning that modern dictatorships are just a momentary downturn in the overall inexorable arc of history. This work draws on Kojève to state that the rise of democracy worldwide signals the final endpoint of humanity's evolution. For 10 points, name this political work by Francis Fukuyama.

ANSWER: *The End of History and the Last Man*

19. Methane is used as a scavenger for fluorine atoms in a type of Molecular Laser Separation named for these entities. These things are used to label amino acids in the SILAC procedure. One method of separating them relies on the Szilard-Chalmers effect. The GBEIF equation describes the partial separation of these items kinetically in nonequilibrium systems. Proxies of climate are based on the equilibrium fractionation of these things. Their incorporation into a part of a molecule whose bond is broken during a particular reaction causes a slowdown in (*) reaction rate known as their namesake kinetic effect. Their relative abundance is used to plot an isochron in a form of dating that relies on the transformation of stable ones to unstable ones. For 10 points, name these entities which differ by number of neutrons, nuclei with the same atomic number but different atomic

mass.

ANSWER: isotopes [accept more specific answers like isotopes of hydrogen]

20. One author from this country wrote, “*Remember the baths where you were murdered*” in a twenty-four-part poem ending, “We who had nothing will school them in serenity.” The author of *Three Secret Poems* and *Mythistorema* was of this nationality, as was a poet who wrote, “if you find her poor,” the title figure “won’t have fooled you” after telling how “Without her you would not have set out.” A poet of this nationality described a (*) “sudden restlessness” and “confusion” and commented, “How serious people’s faces have become” when “some who have just returned from the border say” the title characters no longer exist; that poem ends with the line, “They were, those people, a kind of solution,” and is titled “Waiting for the Barbarians.” For 10 points, name this ethnicity of the poet Constantine Cavafy, as well as the author Nikos Kazantzakis.

ANSWER: Greek [or Greece; or the Hellenic Republic; or Hellas; or Ellada; or Helliniki Demokratia]

TB. This man ordered the creation of the States Reorganization Commission under Faizal Ali. With a northern neighbor, this leader signed the Panchsheel Agreement, though that agreement lapsed in a conflict which saw the Battle of Thag La Ridge. That conflict had been instigated by this man’s Forward Policy. Upon taking office, this man gave a speech in which he stated that the nation must “redeem its pledge” because long ago they made a (*) “tryst with destiny.” This man commemorated the death of one comrade by saying “the light has gone from our lives”. This author of the *Purna Swaraj* and leader of the Congress Party worked with Mahatma Gandhi for his country’s independence. For 10 points, name this father of Indira Gandhi, the first Prime Minister of India.

ANSWER: Jawaharlal Nehru

Bonuses

1. This character is the addressee of a poem that begins, “In the old age black was not counter fair” but that “now is black beauty’s successive heir.” For 10 points each:

[10] Name this character who is the subject of 26 sonnets. Those sonnets to this character are characterized by clear lust and passion, whereas earlier sonnets to another character are characterized by serene and gentle love.

ANSWER: The **Dark Lady** [do not accept “Fair Youth” or “Rival Poet” as they are different people]

[10] Shakespeare, the author of the Dark Lady sonnets also wrote this poem whose final couplet starts, “So long as men can breathe, or eyes can see.” This poem tells its addressee, “Thou art more lovely and more temperate.”

ANSWER: “**Shall I compare thee to a summer’s day?**” [or Sonnet **18**]

[10] This narrative poem by Shakespeare marks a clear departure from *Venus and Adonis* with its dark tone. In it, the title character looks with disdain at a tapestry of the Trojan War and stabs herself to death after the title event.

ANSWER: *The **Rape of Lucrece***

2. This artist painted several wigwams at an Indian camp near a waterfall at Lander’s Peak in one work. For 10 points each:

[10] Name this German-American artist of the Rocky Mountain School who showed an Indian on a rearing horse attacking one of the title animals in *The Last of the Buffalo*.

ANSWER: Albert **Bierstadt**

[10] Albert Bierstadt was also considered to be a part of this art movement that included many landscape painters like Asher Durand and Thomas Cole.

ANSWER: **Hudson River** School

[10] This other Rocky Mountain School painter traveled through the Grand Canyon, which inspired him to create many paintings of the area such as two with the title *Grand Canyon of the Yellowstone*.

ANSWER: Thomas **Moran**

3. This ruler’s brother Charles of Anjou signed a peace treaty with the Emir of Tunis shortly after this ruler died of plague during the siege. For 10 points each:

[10] Name this French King, who on account of all his crusading and his piety, was the only French king to be canonized.

ANSWER: **Louis IX** of France [or **St. Louis**]

[10] St. Louis led the Seventh Crusade in this country. He ended up defeated in this country and was captured and ransomed by the Ayyubid Sultan Turanshah.

ANSWER: Ayyubid **Egypt** [or **Ayyubid** Empire before mention]

[10] The Seventh Crusade began with the capture of the Egyptian port city that was handed over as part of Louis IX’s ransom.

ANSWER: **Damietta**, Egypt

4. Answer some questions about buffer solutions, for 10 points each.

[10] This equation gives the pH of a buffer solution from the pKa of its component acid and the concentrations of base and acid in the solution

ANSWER: **Henderson-Hasselbalch** equation

[10] The Henderson-Hasselbalch equation can also be used to determine the range at which these substances are useful. Examples of these substances include bromophenol blue.

ANSWER: pH **indicator**

[10] This set of well-behaved, water-soluble, neutral pKa-having buffers are commonly used in biology. They include PIPES and HEPES.

ANSWER: Good's buffers

5. This author wrote about a man who sees the greatest painting ever but fails to purchase it in the story "Autumn Mountain." For 10 points each:

[10] Name this author who wrote another story consisting of several conflicting accounts of a man's murder and his wife's rape.

ANSWER: Ryunosuke Akutagawa

[10] This other story by Akutagawa tells of a man who sees a woman stealing hair from corpses at the title location and is disgusted by her, so he steals her robe and leaves.

ANSWER: "Rashomon"

[10] This novel by Akutagawa is narrated by Patient 23 who visited the title country where fetuses can self-abort from the womb according to Geeru, one of the radical philosophers in the title place.

ANSWER: Kappa

6. In the "pure" form of these games, both players prefer one of the two Nash equilibria. For 10 points each:

[10] Name this class of games that includes the "battle of the sexes" and the "stag hunt" games, in which players are better off choosing the same strategy.

ANSWER: coordination games

[10] This classic example of an inefficient Nash equilibrium is a game in which double cooperation Pareto dominates the double defect strategy.

ANSWER: prisoner's dilemma

[10] This other concept from game theory denotes the set of allocations that cannot be improved upon by a coalition of agents. The general equilibria of an exchange economy belong to this set.

ANSWER: the core

7. In churches of this denomination, an iconostasis separates the nave from the sanctuary, and the Tri-Bar Cross symbol is popular in this denomination. For 10 points each:

[10] Identify this large denomination of Christianity that split from the Roman Catholics during the great schism. This sect refers to Mary as the theotokos, and practice about half a year's worth of fasting.

ANSWER: Eastern Orthodox

[10] The Eastern Orthodox Church has this structure, in which a head bishop of a given affiliated church does not report to anyone higher up.

ANSWER: autocephalus [accept word forms, ie autocephaly]

[10] This Eastern Orthodox rite of prayer has a name meaning "to keep still", and refers to blocking out the physical senses and focusing inward to achieve experimental knowledge of God.

ANSWER: hesychasm

8. So-called eclipsing varieties of this system includes the Algol A/B system, and occur when the bodies orbit within the line of sight of the observer. For 10 points each:

[10] Name this type of star system which consists of two gravitationally-bound elements.

ANSWER: binary star system

[10] This type of binary system are only known to be binaries because of the back-and-forth movement of their emission lines due to the Doppler effect.

ANSWER: spectroscopic binary

[10] This high-mass X-ray binary contains a black hole, a fact which lost Stephen Hawking a bet with Kip Thorne. It was originally found by a sounding rocket and was the first X-ray source believed to be a black hole.

ANSWER: Cygnus X-1

9. Roman von Ungern-Sternberg seized this country with his Asiatic Cavalry Division. For 10 points each:

[10] Name this country that was proclaimed as a People's Republic after the death of Bogd Khan. This Soviet satellite was the site of the Battle of Khalkhin Gol.

ANSWER: **Mongolian** People's Republic [or *Bügd Nairamdakh Mongol Ard Uls*; or **BNMAU**]

[10] This so-called "Stalin of Mongolia" sought to reunite Outer and Inner Mongolia, but was thwarted by the real Stalin. He served as leader of Mongolia from 1939 to 1952.

ANSWER: Khorloogiin **Choibalsan**

[10] Stalin signed the Sino-Soviet Treaty of Friendship with this political party, which repudiated the treaty after continued Soviet support for the communists. Thus, it still claims sovereignty over all Mongolia.

ANSWER: **Kuomintang** [or **KMT**; or **Guomindang**; or Chinese **Nationalists**]

10. This sculptor made three openings in the shell of *Sphere with Inner Form*. For 10 points each:

[10] Name this sculptor who placed circular holes in many sculptures like *Curved Form (Bryher)*, *Figure for Landscape*, and *Two Forms (Divided Circle)*.

ANSWER: Dame Barbara **Hepworth**

[10] This other sculptor put rounded holes through his *Double Oval* sculptures though he is more famous for works like *Draped Seated Woman* and the Chac Mool inspired *Reclining Figure*.

ANSWER: Henry Spencer **Moore**

[10] Henry Moore printed several "Elephant" ones of these. Damien Hirst placed thousands of diamonds on one of these objects, while a stretched one appears at the bottom of Holbein's *The Ambassadors*.

ANSWER: **skulls** [prompt on "bones"]

11. A dispute with Greece over Macedonia's name is slowing the latter country's attempt to join this organization. For 10 points each:

[10] Name this international organization and winner of the 2012 Nobel Peace Prize that is negotiating with potential member-state Turkey. Most of its members are in Schengen Area and use a shared currency.

ANSWER: **European Union** [or the **EU**]

[10] In July 2013, this country became the latest to join the EU. Zoran Milanovic's Kukuriku coalition won its 2011 parliamentary elections.

ANSWER: Republic of **Croatia** [or *Republika Hrvatska*]

[10] Before Croatia, these two other Balkan countries were the last to join the EU, which they did in 2007. Their current presidents are respectively Traian Basescu and Rosen Plevneliev.

ANSWER: **Romania** and the Republic of **Bulgaria** [accept **Roumania** for **Romania**; and *Republika Balgariya* for **Bulgaria**]

12. This play begins with a woman bringing cornflakes and fried bread to her husband and repeatedly asking, "Is it nice?" For 10 points each:

[10] Name this play in which one character gets his glasses broken during a game of blind man's bluff, after which he tries to rape Lulu and is finally taken to see a mysterious character named Monty.

ANSWER: *The Birthday Party*

[10] This author created Gus and Ben in *The Dumb Waiter* and wrote *The Birthday Party*.

ANSWER: Harold **Pinter**

[10] This other play by Harold Pinter is about Deborah who wakes up from a thirty-year coma to see that her brother-in-law, Hornby, has been taking care of her.

ANSWER: *A Kind of Alaska*

13. The challenges faced by these people were the subject of the first solo work of historian Jean Zimmerman. For 10 points each:

[10] Name these people who served in the WAVES division during the Second World War. These people were allowed to serve on submarines in 2010 but these people still cannot become SEALs.

ANSWER: **women** in the US Navy [or **female** sailors in the American navy and equivalents]

[10] Jean Zimmerman's book focused on this 1995 scandal, where female naval helicopter pilots were sexually assaulted at a meeting of the namesake association. One of the admirals involved in the running of the Navy report on this scandal said, "a lot of female Navy pilots are go-go dancers, topless dancers or hookers."

ANSWER: **Tailhook** scandal [or 1991 **Tailhook** Association scandal]

[10] Holly Graff, the first female destroyer captain, was criticized for assaulting an officer of this foreign navy serving on the *USS Winston Churchill*. It had the second largest naval force in the invasions of Afghanistan and Iraq.

ANSWER: **Royal Navy** [or the **Senior Service**; prompt on "Navy of the United Kingdom," "British Navy," "English Navy," and equivalents]

14. Five ways of doing this kind of action - some of which are named for the properties of Contingency and Degree - were proposed in *Summa Theologica*. For 10 points each:

[10] Name this kind of scholarly action which Alvin Plantinga tried to do by using modal logic. Other arguments for doing this include the cosmological and teleological arguments.

ANSWER: **prove the existence of God** [or **proving God is real** and equivalents]

[10] The ontological proof for the existence of God was developed by this saint, who authored the *Proslogion*.

ANSWER: St. **Anselm** of Canterbury

[10] While not adapting modal logic to prove the existence of God, Plantinga was writing this book which argues that believing in God is akin to believing in the existence of the second title entities.

ANSWER: **God and Other Minds**

15. This type of radiation has a flat intensity spectrum with a cutoff frequency, and it is commonly seen in X-ray tubes. For 10 points each:

[10] Name this type of radiation that's emitted when a charged particle slows down and changes path. Synchrotron and cyclotron radiation are similar to it.

ANSWER: **bremsstrahlung** [or **free-free** radiation or **braking** radiation]

[10] Like inverse Compton scattering, the spectrum of bremsstrahlung has this property, unlike the spectrum of radiation of transitions between energy levels.

ANSWER: **continuous** spectrum

[10] A common source of bremsstrahlung occurs as "secondary radiation" during this phenomenon, because the nucleus deflects the emitted radiation.

ANSWER: **beta** decay [accept **beta-plus** or **beta-minus**]

16. Answer some questions about the Holy Grail in Arthurian legend, for 10 points each:

[10] The Holy Grail was originally found in the fallow land of this impotent ruler, who is sometimes said to be the same figure as Pellam, father of Elaine of Corbenic, or as Anfortas.

ANSWER: **Fisher King**

[10] This pure son of Lancelot and Elaine eventually sees the Grail in the kingdom of the Fisher King. After seeing the Grail, he requests to die at the time of his choosing.

ANSWER: Sir **Galahad** [or **Galeas**; or **Galath**]

[10] This knight went to Pellam's court to kill the king's brother in revenge. However, he accidentally strikes the king with the Spear of Longinus, turning Pellam's kingdom into a wasteland.

ANSWER: Sir **Balin** le Savage [or the **Knight with the Two Swords**; prompt on "le Savage"; do not accept "Sir Balan le Savage", who is his brother]

17. At the end of this novel, the protagonist joins a ship's captain on a voyage to get coal for Cadiz; in this novel, he had earlier pretended to be the journalist Andreas Tangen. For 10 points each:

[10] Name this novel in which the unnamed protagonist treasures the pencil he used to write his dissertation on "Philosophical Cognition," which is one of his only belongings.

ANSWER: Hunger [or Sult]

[10] *Hunger* is a novel by this Norwegian author and Nobel Laureate who also wrote *The Growth of the Soil*.

ANSWER: Knut Hamsen

[10] This other Scandinavian author wrote *The Red Room* as well as a play that ends with Jean bringing a razor to the title character, *Miss Julie*.

ANSWER: Johan August Strindberg

18. This group was called into existence after one ruler negotiated with Karl Theodor to trade Bavaria for the Southern Netherlands. For 10 points each;

[10] Name this league of protestant German princely states created by Frederick the Great.

ANSWER: Furstenbund

[10] The Furstenbund was largely created to counteract this ruler's ambitions to annex Bavaria. This son of Maria Theresa was an enlightened despot who passed the Patent of Toleration.

ANSWER: Joseph II, Holy Roman Empire [or Joseph Benedikt Anton Michael Adam; prompt on "Joseph"]

[10] The Furstenbund initially consisted of the states of Prussia, Hanover, and this other one, which was also the site of the Battle of the Nations during the Napoleonic wars.

ANSWER: Electorate of Saxony [or Upper Saxony; or Kingdom of Saxony; *Kurfürstentum Sachsen*; or *Kursachsen*; or Konigreich Sachsen]

19. This composer included two versions of the *Magnificat*, a *Gloria a 7*, and three versions of *Salve Regina* in his "Moral and Spiritual Forest." For 10 points each:

[10] Name this composer of *Vespers for the Blessed Virgin* who also wrote a ballet "of the Ungrateful Ladies."

ANSWER: Claudio Giovanni Antonio Monteverdi

[10] Monteverdi frequently wrote these secular vocal works which are unrelated to a similarly named "Trecento" form. Monteverdi wrote nine books of these works that frequently set poetry to music.

ANSWER: madrigals

[10] Monteverdi helped develop music past the Renaissance style to the Baroque style of composers like this man who wrote the *Brandenburg Concertos* and a *Mass in B minor*.

ANSWER: Johann Sebastian Bach

20. This disease can be caused by bacterial infection with H influenzae type B or a namesake species of Neisseria, and is often diagnosed using a lumbar puncture. For 10 points each:

[10] Name this disease, whose aseptic form can be caused by West Nile virus or Echovirus. This condition is the inflammation of the protective tissue surrounding the brain and spinal cord.

ANSWER: meningitis

[10] Meningitis is diagnosed partly by examining this clear fluid that flows through the ventricles of the brain. Meningitis can be distinguished from GBS by looking for albumino-cytologic dissociation in this tissue.

ANSWER: CSF [or cerebrospinal fluid]

[10] This layer of the meninges lies between the dura mater and the pia mater.

ANSWER: arachnoid