



NASAT 2016
Round 13

1. This person sued author William Manchester in order to get family information removed from a 1967 book. Late in life, this person worked as a book editor for Doubleday and edited such books as *The Cartoon History of the Universe*. In film footage, this person is shown being pushed back into a seat by Clint Hill. In a television special broadcast on Valentine's Day on multiple networks, this person takes a CBS reporter through her home, which had recently undergone a million dollar restoration. In an interview with *Life*, she compared recent years of her life to the musical *Camelot*. In a photograph, this woman is shown wearing a bloodstained pink suit as she stands next to Lyndon Johnson. For 10 points, name this First Lady, the wife of a president assassinated in 1963.

ANSWER: Jacqueline "Jackie" Kennedy [or Jackie Kennedy; or Jacqueline "Jackie" Bouvier; or Jacqueline "Jackie" Onassis; prompt on Kennedy] <Cheyne>

2. The Tolman electronic parameter for a ligand is calculated from changes it causes in this molecule's IR vibration at 2143 inverse centimeters. The Gattermann–Koch reaction allows formylation of benzene with the use of a Lewis acid, hydrochloric acid, and this compound. Cytochrome p450s are named for the fact that they exhibit an absorbance maximum at 450 nanometers when complexed to this compound. This molecule, which is found with cyanide at the top of the spectrochemical series, is used with hydrogen gas to generate liquid hydrocarbons in the Fischer–Tropsch process. The Mond process purifies nickel by reacting it with this molecule, and it plus water vapor gives carbon dioxide and hydrogen gas in the water-gas shift reaction. For 10 points, name this molecule is toxic in the bloodstream because it binds hemoglobin to generate carboxyhemoglobin.

ANSWER: carbon monoxide [or CO until it is read] <Nagari>

3. An endangered dialect of this language is the only dialect to possess an open back rounded vowel, which is called *arae-a* (AH-ray AH). In this language, obstruents are phonemically differentiated between plain, aspirated, and tense varieties. This is the most widely-spoken language to possess an aspirated /s/ (ess). This language uses a featural writing system that combines consonants and vowels into individual "blocks" for each syllable. It uses a namesake Revised Romanization system and, like Japanese, it uses a particle, *neun* (nun), to mark the topic. Despite being an isolate, this language borrows around 60 percent of its vocabulary from Chinese, but uses an alphabet created in 1443 by Sejong the Great. For 10 points, name this language written in Hangul.

ANSWER: Korean language [or Hanguk-eo; or Hanguk-mal; do not accept "Hangul"] <Kim>

4. A soldier modeled after Donatello's *St. George* leans on his shield in a fresco painted in this city's now-destroyed Ovetari Chapel, which was bombed during World War II. *St. James Led to His Execution* is the culmination of Mantegna's early career, which was spent in this city. Clubs and torches dominate the top half of a painting in this city focused on two men embracing. Another painting in this city is set near a leafless tree above a diagonal rocky hill, over which ten angels fly wildly. The *Lamentation*, *Kiss of Judas*, and *The Last Judgment* and are part of a series in this city commissioned by the banker Enrico Scrovegni. For 10 points, name this northern Italian city home to the Giotto-decorated Arena Chapel.

ANSWER: Padua <Collins>

5. The debut performance of this play was a benefit for the 25th anniversary of a comedy star's debut, which explained why a crowd expecting humor legendarily booed and talked over the production. Early in this play, a female character spots two red points she claims are the lurid eyes of Satan, prompting another woman to obnoxiously say she smells sulfur. Near the end of this play, a woman halts a metaphor by abruptly saying "I am an actress" and recites a monologue she earlier performed in an outdoor play in Act 1. This play's reputation was improved by a December 1898 performance directed by Konstantin Stanislavsky which inspired the emblem of the Moscow Art Theater. In this play, Nina loves the writer Trigorin. For 10 points, name this Anton Chekhov play in which Konstantin shoots both himself and the title bird.

ANSWER: *The Seagull* <Cheyne>

6. One of the first original theological texts from this country analyzes how the cross is a synthesis of love and wrath called the "pain of God". The patron saint of Mexico City died in this country, whose "non-church" movement does not believe in liturgy or clergy. A missionary here named James Curtis Hepburn wrote an influential dictionary of English and this country's language. Its "twenty-six" martyrs were forced to walk 600 miles to be crucified in 1597 and include Paul Miki. Suspected believers here were ordered to step on pictures of Jesus or Mary to prove they were not Christian. In January 1548, the missionary Francis Xavier began spreading Catholicism in this country. For 10 points, what country's hidden "Christians" were known as *kakure kirishitan*?

ANSWER: Japan [or Nippon] <Cheyne>

7. After criticizing this man, comedian Eddie Cantor was put out of work for two years. This man was instructed to cease his activities by Eugenio Pacelli during the latter's tour of America. Both Frank Murphy and Joseph Kennedy were sent to ensure this man would not run for president. Attorney General Francis Biddle rescinded the mailing privileges of this man's magazine in April 1942. He joined Dr. Francis Townsend and Gerald L. K. Smith in backing William Lemke's presidential run with the Union Party. This head of the National Union for Social Justice was based at Royal Oak, Michigan, at the National Shrine of the Little Flower church. For 10 points, what Catholic priest promoted left-wing ideology and antisemitism over the radio in the 1930s?

ANSWER: Father Charles Edward Coughlin <Cheyne>

8. In the "Alla Hornpipe" movement from *Water Music*, two of these instruments play a solo right after the opening *tutti*. Vivaldi wrote a C major double concerto for this instrument. An E major concerto for it is often transposed to E-flat major to make it easier to play. This instrument has a prominent solo part in the second *Brandenburg Concerto*. An E-flat major concerto for its short-lived keyed variety was written by Joseph Haydn. Two popular wedding pieces composed by Jeremiah Clarke are this instrument's namesake "tune" and namesake "voluntary". The mellow sound of the similarly-shaped cornet contrasts with the buzzing texture of this instrument used to play fanfares. For 10 points, name this highest-pitched brass instrument.

ANSWER: trumpet <Kim>

9. One character in this novel believes only courage and shrewdness are required to be successful, the former of which he has and the latter of which he can acquire. Another character in this novel nails himself in his attic and starves to death after his store is looted. After putting down a slave rebellion in Haiti, a man in this novel returns to the United States and gets a hundred miles of land from a drunken Indian. Shreve narrates parts of this novel set in a cold Harvard bedroom. Henry murders Charles Bon to prevent him from marrying Judith in this novel narrated by Rosa Coldfield and Quentin Compson. For 10 points, name this biblically titled novel about the life of Thomas Sutpen, a work of William Faulkner.

ANSWER: Absalom, Absalom! <Collins>

10. Production of this molecule is increased by London and Arctic mutations and is diminished by an allele found in some Icelanders. Site-specific levels of this molecule were integral to the now-discounted "peripheral sink" hypothesis. This molecule can be imaged with PET using Pittsburgh compound B. Its degradation is lowered in people with the ApoE epsilon 4 allele. A protein triplicated in Down syndrome is processed into C99 before being refined into this molecule. This 40- to 42-residue peptide is generated by PSEN1 in the gamma secretase complex following BACE-1 cleavage of the precursor protein APP. Cortical deposition of it accelerates tau propagation and formation of neurofibrillary tangles. For 10 points, name this peptide that comprises the insoluble plaques seen in Alzheimer's disease.

ANSWER: amyloid beta [or beta-amyloid; prompt on plaque; prompt on amyloid precursor protein or APP until "peripheral" is read] <Smart>

11. Before using this thing, a woman repeats the cry "Wise!" despite her husband's insistence it is "foolish". After the final time it is used, a man opens a door to reveal "a quiet and deserted road". This thing was created by "a very holy man... to show that fate ruled people's lives" and its first owner ended up killing himself. It is thrown onto the fire by Sergeant-Major Morris, who obtained it while abroad in India. This item is last being used to prevent the presumably horribly mutilated Herbert from entering his parents' home. This thing is responsible for Mr. and Mrs. White earning 200 pounds but only through the workplace death of their son. For 10 points, name this title object of a W. W. Jacobs story which grants three wishes, albeit in horrible ways.

ANSWER: the monkey's paw [prompt on paw; do not accept "monkey"] <Cheyne>

12. After obtaining an object created by this god, Setna dreams that he sacrifices his wife and children to cats out of love for a woman who turns out to be a corpse. Nefrekeptah is cursed after reading a book of spells written by this deity. A syncretic combination of Hermes and this god is the purported author of the *Corpus Hermeticum*. This god and Shu convince Tefnut to return from the Nubian Desert. After Horus was stung by a scorpion, this god healed him. This god, whose feminine counterpart was Seshat, was worshipped at Hermopolis. He defeated the moon god Khonsu in a gambling contest to win five extra days for Nut. For 10 points, name this inventor of writing, an Egyptian god of wisdom and magic depicted as a baboon or an ibis.

ANSWER: **Thoth** [or **Djehuty**] <Collins>

13. A prince and princess from this region married a princess and a prince from Bavaria in a double wedding held at Cambrai. In a phase of the Hook and Cod wars, the conservative Hooks supported Jacqueline of Bavaria while the Cods supported a ruler of this region. That man established the Order of the Golden Fleece here after his marriage to Isabella of Portugal. A leader of this region put down several rebellions by the city of Liège and forged an alliance with England by marrying Margaret of York. A duke of this region supported the League of the Public Weal against his longtime rival Louis XI before his death at the Battle of Nancy. For 10 points, name this region in France ruled by John the Fearless, Philip the Good, and Charles the Bold.

ANSWER: **Burgundy** <Droge>

14. Dick Pound described this crisis as "manufactured" and said it did not apply to many people. Attempts to resolve this crisis have led to fears that Oxitec's actions might damage the ecosystem. The ill-advised joke "I'm fast—they can't catch me" was made about it during a television interview. In discussing potential solutions to this crisis, Pope Francis condemned "taking one life to save another." It was responsible for a May 2016 series of games between the Marlins and Pirates being relocated to Miami, and has been linked by conspiracy theorists to vaccines and genetically modified animals. Countries such as Colombia have advised women not to get pregnant because of this crisis. For 10 points, what epidemic poses a potential threat for the 2016 Summer Olympics in Brazil?

ANSWER: **Zika** virus epidemic [or **ZIKV** epidemic] <Cheyne>

15. In a technique named for its use of this process, liquid helium is used to keep a sample at a constant temperature and then removed right before this process occurs isentropically, reducing the internal energy and temperature of the sample. The portion of a $B-H$ graph, or hysteresis loop, in the second quadrant is sometimes known as this phenomenon's curve. The last stages of cooling a sample to the microkelvin or picokelvin range involves the "nuclear" and "adiabatic" types of this process. A measure of the ability to resist this process is coercivity. For 10 points, name this process that one might perform by slowly removing a ferromagnet from a coil of wire that has alternating current flowing through it, or by heating a ferromagnet above the Curie temperature.

ANSWER: **demagnetization** [or adiabatic **demagnetization**; or nuclear **demagnetization**] <Voight>

16. This architect designed a vaulted ceiling made up of reinforced concrete shells buttressed by double columns for a naturally-lit church with an all-white interior. Inspired by patterns in nature, this architect devised the notion that buildings are the sum total of their constitutive repeating elements, a framework he called "additive architecture". This architect combined a flat-roofed mosque with a public square topped with an inclined roof rising toward the Persian Gulf in a collaborative design with his son Jan (yann) for the Kuwait National Assembly Building. In 1966, he resigned from a project for which he designed a two-hall complex topped by sail-shaped shells. For 10 points, name this Danish-born architect of the Sydney Opera House.

ANSWER: Jørn **Utzon** (yurn OOT-sun) [or Jørn Oberg **Utzon**] <Gupta>

17. In a play set in this state, a man is berated for missing the funeral of the family patriarch, who is later revealed to be his actual father. A play set here ends with a maid repeating the line "This is the way the world ends", and details the effects of Beverly Weston's suicide on his drug-addicted wife, Violet. Muley Graves angrily refuses to leave his farm in this state. This state is the setting of a 2007 play by Tracy Letts and the location of McAlester prison in a novel that opens with its protagonist being paroled from his homicide charge. The drama *August: Osage County* is set here, and it is the starting point of a journey to California that is undertaken by Jim Casy. For 10 points, name this home state of the Joad family in John Steinbeck's *The Grapes of Wrath*.

ANSWER: **Oklahoma** <Droge>

18. To establish a link between Nevanlinna theory and the theory of this kind of approximation, Kobayashi proposed a modified form of the truncated counting function. The subspace theorem concerns curves defined by this kind of function, such as the S -unit function. In general, *this* kind of approximation is concerned with using rational numbers to approximate the reals. By resolving Hilbert's tenth problem, Yuri Matiyasevich showed that there cannot be a universal algorithm for solving these problems. Catalan's Conjecture concerned one of these equations, another example of which is Pell's equation. The ancient Greek author of the *Arithmetica* gave his name to, for 10 points, what equations in which only integer solutions are sought?

ANSWER: **Diophantine** equations <Collins>

19. A 1925 law ended the practice of appointing "mahants", managers of these buildings who did not belong to the religion that makes use of these facilities. Within these buildings, the practice of "katha" takes place as part of a ceremony that always ends with a divine reply known as "hukam". The five takhts are major examples of this type of building. Each of these facilities, whose largest example is the Harmandir Sahib, contains a communal kitchen called a "langar" and a canopy-covered cot which holds a copy of the Adi Granth. For 10 points, name these centers, such as the Golden Temple of Amritsar, which are the worship places for the followers of a religion founded by Guru Nanak.

ANSWER: **gurdwaras** [or **Sikh temples**] <Weiner>

20. Anticipating the end of this battle, thousands of NDH members fled north but were repatriated to Bleiburg shortly afterward. This battle was the culmination of a campaign that included battles at Seelow Heights and Halbe. The winners of this battle were pressured to take a government building by May Day for a photo opportunity. The losing side of this battle destroyed much of their official documents as part of Operation Clausewitz. A picture taken by Yevgeny Khaldei shows a soldier raising a flag atop an enemy's parliament building in the aftermath of this battle. Karl Dönitz (DER-nitz) became president during this battle after a higher-up committed suicide. For 10 points, name this battle that brought an end to the European theater of World War II by forcing Germany to surrender.

ANSWER: Battle of **Berlin** <Golimlim>

21. In this text, the narrator says he is captivated by stage plays which provide "fuel" for his own fire of miseries. At one point in it, two men who have jobs sometimes translated as "secret service agents" resign to live in a cottage. In part nine of this text, the author describes being overjoyed to end his professorship of teaching rhetoric, after which he has an ecstatic experience in Ostia. The author of this text recalls robbing a pear tree with his friends and is ashamed to have thrown most of the food to the hogs. While in a garden, its narrator hears a voice saying "take up and read", prompting him to read Romans 13. The author of this text recalls the death of his mother, Monica, and describes how he converted from Manichaeism to Christianity. For 10 points, name this autobiographical text by Saint Augustine.

ANSWER: *The Confessions of Saint Augustine* [or *Confessions in Thirteen Books*] <Cheyne>

1. With encouragement from her husband Richard Bonyng (BON-ing), who had conducted many of her performances, this singer rescued Jules Massenet's (mass-NAY's) incredibly difficult opera *Esclarmonde* from obscurity. For 10 points each:

[10] Name this Australian coloratura singer whom Pavarotti deemed the "Voice of the Century".

ANSWER: Joan **Sutherland**

[10] Sutherland was extremely talented at singing in this highest female vocal range, as evinced by her ability to tackle the G two octaves above middle C in *Esclarmonde*.

ANSWER: **soprano**

[10] In 1959, Sutherland had a breakthrough performance at Covent Garden's revival of this opera, winning acclaim for her interpretation of the flute-accompanied "Mad Scene", "Il dolce suono".

ANSWER: **Lucia di Lammermoor** <Cheyne>

2. Discovering this answer saves the life of a knight who raped a maiden. For 10 points each:

[10] What answer to a seemingly impossible riddle does the knight deliver to the court of King Arthur in a Middle English poem? He learns this answer from an old hag who shows up shortly thereafter to demand his hand in marriage as payment.

ANSWER: **women want sovereignty over their husbands** [or obvious equivalents, such as **power**, **dominion**, or **independence** instead of "sovereignty"; prompt on what women most desire or obvious equivalents]

[10] The aforementioned story is a tale told by the Wife of Bath in this collection of poetic stories by Geoffrey Chaucer.

ANSWER: **The Canterbury Tales**

[10] In another story from *The Canterbury Tales*, the Pardoner tells of three young men who set out to kill this being, only to get distracted by a treasure and end up killing each other.

ANSWER: **Death** <Cheyne>

3. This society was controversially judged to be economically profitable in the book *Time on the Cross*. For 10 points each:

[10] Name this society analyzed in Eugene Genovese's book *Roll, Jordan, Roll*, which argued that this paternalistic society was resisted through such means as religion and music.

ANSWER: **Southern slave society** [or **antebellum** society; or American **slave** society; or obvious equivalents; prompt on the United States of America or America]

[10] Slavery as a whole grew on a national level after this man invented the cotton gin in 1793, as it made cotton plantations economically feasible throughout the South.

ANSWER: Eli **Whitney**

[10] This man argued that slavery made the South economically inefficient in his account of touring the antebellum South, *Journeys and Explorations in the Cotton Kingdom*. Andrew Jackson Downing introduced this man to his collaborator Calvert Vaux.

ANSWER: Frederick Law **Olmsted** <Cheyne>

4. Ernest Rutherford used one of these devices to count alpha particles in his gold foil experiment. For 10 points each:

[10] Name these devices that use photomultiplier tubes to measure the strength of their namesake effect, which occurs when crystals emit low-energy photons after being struck by ionized radiation.

ANSWER: **scintillator** [or **scintillator** counter; or **scintillation** detectors]

[10] This man's namesake effect occurs when gamma rays scatter off a scintillator. This American physicist's namesake wavelength is defined as Planck's constant over electron mass times the speed of light.

ANSWER: Arthur **Compton**

[10] Compton scattering is the inelastic scattering of these massless gauge bosons by a charged particle, such as an electron.

ANSWER: **photons** <Hothem>

5. In a 1977 hearing on the topic of implementing this type of policy, Joseph Fogarty said that the odds of adopting it would be about as great "as those on the Easter Bunny in the Preakness". For 10 points each:

[10] Name this type of policy that has raised sixty billion dollars for the American government since its adoption in 1994. It was argued for in "The Problem of Social Cost".

ANSWER: **spectrum auction** [prompt on **auction** or **radio** auction]

[10] "The Problem of Social Cost" was written by this economist, who also introduced transaction costs in a 1937 paper.

ANSWER: Ronald **Coase** (kohss)

[10] Coase's paper that introduced transaction costs was titled "The Theory of" this type of organization. In micro theory, this type of organization faces production decisions based on its marginal and average cost curves.

ANSWER: **firm** [or *The Theory of the **Firm***; prompt on **company**] <Droge>

6. An 1881 compilation dedicated to this topic was assembled by Edward Everett Hale, who did not study it himself. For 10 points each:

[10] What topic was first popularized for many Americans by that three-part compilation, which was originally written by Thomas Bulfinch, the son of the famed architect?

ANSWER: **mythology** [or **fables**; prompt on **chivalry**]

[10] One of the earliest chapters of *Bulfinch's Mythology* describes this Titan who stole fire from Mount Olympus and gave it to mankind. He was punished by having an eagle or vulture peck at his liver for all eternity.

ANSWER: **Prometheus**

[10] This author of *The Greek Way* and 1942's text titled *Mythology: Timeless Tales of Gods and Heroes* supplanted Bulfinch's works within American classrooms. This academic was head of the Bryn Mawr School for 26 years.

ANSWER: Edith **Hamilton** <Cheyne>

7. Nazi Party member John Rabe tried to stop this event and protected thousands of people during it. For 10 points each:

[10] Name this event. The controversy surrounding Iris Chang's book on this event may have been a factor in her 2004 suicide.

ANSWER: **Nanking** massacre [or **Nanjing** massacre; or **Rape** of Nanking; or Rape of **Nanjing**]

[10] The Nanking massacre was perpetrated in China by this country's Imperial Army under Iwane Matsui.

ANSWER: **Japan** [or **Nippon**]

[10] During the massacre, two Japanese officers reportedly had a contest over who could be the first to accomplish this bloody action. The officers were later executed for war crimes, although the veracity of the story is frequently questioned.

ANSWER: **behead 100 people** with a sword [or **behead 150 people** with a sword; or obvious equivalents, such as **kill 100 people with a sword**; prompt on partial answers] <Cheyne>

8. The speaker of this poem says, "I am the arrow, the dew that flies suicidal", after describing how "something else hauls me through air". For 10 points each:

[10] Name this poem about the author's horse that begins with "stasis in darkness" and ends with the "red eye, the cauldron of morning".

ANSWER: "**Ariel**"

[10] This suicidal wife of Ted Hughes wrote "Ariel", as well as "Lady Lazarus" and "Daddy".

ANSWER: Sylvia **Plath**

[10] In this Plath poem, the first in the collection *Ariel*, the speaker arises from bed "cow-heavy and floral" to see her baby. It opens with the line, "Love set you going like a fat gold watch".

ANSWER: "**Morning Song**" <Droge>

9. Answer the following about doughnuts, for 10 points each:

[10] Doughnuts resemble this shape, which can be generated by gluing opposite sides of a piece of paper together, or by rotating a circle around an axis that is far enough away.

ANSWER: **torus** [or **toruses**; or **tori**]

[10] People often joke that to topologists, doughnuts and coffee cups are the same thing, since the function mapping from a doughnut to a coffee cup has this property. Functions with this property and their inverses are continuous.

ANSWER: **homeomorphic** [or word forms, such as **homeomorphism**; do not accept "homomorphic" or "homomorphism"]

[10] Homeomorphisms preserve topological invariants. One such invariant that can be defined over a doughnut is this sort of function, which intuitively measures distance.

ANSWER: **metric** function [or word forms, such as **metrizable**] <Jose>

10. Three cartoonishly-rendered examples of these animals accompany the Holy Family in a 1496 woodcut. For 10 points each:

[10] Name this animal, the subject of an extremely-detailed watercolor often grouped with its artist's similarly-realistic *Great Piece of Turf*.

ANSWER: Young Hare [or jackrabbit; or Lepus; do not accept "rabbit"]

[10] This pre-eminent early 16th-century German artist painted *Young Hare* and made such engravings as *Knight, Death, and the Devil* and *Melencolia I*.

ANSWER: Albrecht Dürer

[10] Dürer's *Young Hare* was a preliminary study for his 1504 engraving of these two people, whom he depicted using Vitruvian proportions. Dürer later painted these two people in the first full-scale nude in German art.

ANSWER: Adam and Eve <Gupta>

11. Jim Norris watched these phenomena for hours on end as part of what Norris called "the most boring experiment ever". For 10 points each:

[10] Name these mysterious phenomena that seem to glide at Racetrack Playa, sometimes attaining speeds of around 15 feet per second during mysterious times throughout the year.

ANSWER: sailing stones [or rolling stones; or sliding stones; or moving stones; or rock in place of "stones"]

[10] Sailing stones are partly caused by the appearance of this substance in Death Valley. This solid substance causes frost wedging, a form of weathering.

ANSWER: ice

[10] For the stones to sail, this material must be present in the rocks. Argillaceous (ar-juh-LAY-shiss) minerals are characterized by high amounts of this soft material.

ANSWER: clay <Jose>

12. This mountain's Coalman Glacier was named for a man who climbed it nearly six hundred times. For 10 points each:

[10] Name this volcano in the Cascades that is the highest point in Oregon.

ANSWER: Mount Hood [or Wy'east]

[10] Mount Hood was named by this man's expedition, which mapped much of the coast of the Pacific Northwest. A large Canadian island to the northwest of Washington is named in honor of this man.

ANSWER: George Vancouver

[10] A mountaineering club with this name was founded on the summit of Mount Hood. That club lends their name to several glaciers in the Cascades, as well as the volcano whose caldera now holds Crater Lake.

ANSWER: Mazama <Golimlim>

13. They are arranged roughly in order of decreasing length rather than thematically or chronologically. For 10 points each:

[10] Give this term for each of the 114 chapter-like subdivisions of the Qur'an.

ANSWER: **surahs** [or **surat**; or **suwar**]

[10] Each surah, except the ninth, begins with this phrase, meaning "in the name of God, the Most Gracious, the Most Merciful". The ninth surah, At-Tawba, is thought to be lacking this phrase because it is an unintentional separation from the eighth.

ANSWER: **basmla** [or **bismillah**]

[10] In similar fashion, many Theravada Buddhist documents dating as far back as the Pali canon begin with this verse. It translates to "I pay homage to the Blessed One, the Worthy One, the Fully Enlightened One".

ANSWER: **namotassa** [or **namo**] <Marvin>

14. This character expelled his son from his mansion because he tried to read this man's secret will. For 10 points each:

[10] Name this character from a controversial novel whose descendants end up living in a filthy alley near his mansion. His family members symbolize various figures from Christianity, Judaism, and Islam.

ANSWER: **Gebelawi**

[10] The novel *Children of Gebelawi*, also known as *Children of the Alley*, was written by this man, who was stabbed in 1994 by Islamic extremists who took offense at the book. This author also wrote such books as *Palace of Desire* and *Sugar Street*.

ANSWER: Naguib **Mahfouz**

[10] Both *Palace of Desire* and *Sugar Street* are part of a trilogy of novels by Mahfouz named after this Egyptian city where all three books are set.

ANSWER: **Cairo** <Cheyne>

15. This man led Spanish troops to force Portugal to cease trade with Britain as part of a Franco-Spanish alliance in the brief War of the Oranges. For 10 points each:

[10] Name this "Prince of the Peace", a powerful prime minister under Charles IV.

ANSWER: Manuel de **Godoy**

[10] In an 1807 treaty with this name, Portugal was partitioned between France and Spain, with Godoy receiving the entire Algarves. A later 1814 treaty signed in this place after the Battle of Leipzig sent Napoleon into exile in Elba.

ANSWER: **Fontainebleau** [or Treaty of **Fontainebleau**]

[10] Godoy received his title "Prince of the Peace" after signing the Treaty of Basel with France, which ended a war by this name that opposed the French Revolution. This mountain range dividing Spain and France also names a 1659 treaty that ended the Franco-Spanish War.

ANSWER: **Pyrenees** [or War of the **Pyrenees**; or Treaty of the **Pyrenees**] <Lou>

16. This character is female but has a male name taken from a Russian novel. For 10 points each:

[10] Name this dog from a 1984 novel who befriends the pig Mefisto. As it dies of cancer in the book's final chapter, it appears to smile at its owners.

ANSWER: **Karenin**

[10] Karenin is owned by Tereza, the photographer wife of this womanizing surgeon. He eventually moves away from Prague to the countryside to be with his wife.

ANSWER: **Tomáš**

[10] Tomáš, Tereza, and Karenin are all characters in this Czech author's *The Unbearable Lightness of Being*.

ANSWER: Milan **Kundera** <Cheyne>

17. This teacher of Francis of Mayrone developed an extremely convoluted argument for the existence of God based on a first efficient cause. For 10 points each:

[10] Name this medieval scholastic philosopher, who compiled his lectures at Oxford into his *Ordinatio* and was known as Doctor Subtilis.

ANSWER: John Duns **Scotus**

[10] Scotus developed this Latin-derived term popular in medieval philosophy that describes the subtle qualitative properties that give something an identity, or "thisness".

ANSWER: **haecceity** (heck-SEE-uh-tee) [or word forms]

[10] The Scotists were largely opposed by a school of theologians named for this philosopher, who argued that "entities must not be multiplied beyond necessity" in his namesake "razor".

ANSWER: William of **Ockham** <Manners>

18. STORM artificially enhances this parameter by using photoswitchable fluorophores, and other "super" namesake microscopy techniques for increasing it include PALM and STED. For 10 points each:

[10] Name this optical value typically confined by the diffraction limit, which corresponds to the minimum distance at which two objects are distinguishable.

ANSWER: **resolution**

[10] The refractive index of this medium is higher than that of water and air and so increases resolution at high magnifications. It is usually dabbed on the coverslip so that it immerses the objective upon focusing.

ANSWER: **oil**

[10] This other microscopy technique uses small phase differences between offset brightfield images to produce an apparently 3D image. It enhances the contrast in transparent, unstained samples and was developed by Nomarski.

ANSWER: **differential interference contrast** [or **DIC**] <Smart>

19. Edward Gibbon called this man "the hero of the age". For 10 points each:

[10] What man received a cognomen meaning "the hammer" after winning the Battle of Tours?

ANSWER: **Charles Martel** [prompt on partial answers]

[10] Charles Martel's son was this Mayor of the Palace, who deposed Childeric III and declared himself King of the Franks. He was succeeded by his son Charlemagne.

ANSWER: **Pepin the Short** [or **Pepin the Younger**; prompt on **Pepin**]

[10] After the Umayyads were defeated by the Franks, they would, under this ruler, eventually establish an emirate in Cordoba that would survive until 1031 and be distinct from the main Caliphate of Damascus. The first ruler of the later Caliphate of Cordoba also had this name.

ANSWER: **Abd al-Rahman I** [or **Abd ar-Rahman I**; or **Abdul Rahman I**; or **Abdar Rahman I**; or **Abderraman I**] <Cheyne>

20. Strongly influenced by Mahler, this composer's three-movement *Symphony No. 4* sandwiches a scherzo between two outer movements, each nearly a half hour in length. For 10 points each:

[10] Name this composer of the *Festive Overture* and instrumental suites arranged from his scores to the films *Hamlet* and *The Gadfly*.

ANSWER: Dmitri **Shostakovich** [or Dmitri Dmitriyevich **Shostakovich**]

[10] This D minor Shostakovich symphony ends with a shrill coda in which strings, woodwinds, and piano hammer away at a single note. It was written in a very conservative style to regain favor with Stalin after a 1936 denunciation.

ANSWER: *Symphony No. 5*

[10] Shostakovich heavily used a self-referencing "D E-flat C B" motif throughout his eighth piece for this ensemble comprising two violins, a viola, and a cello.

ANSWER: **string quartet** [prompt on **quartet**] <Kim>

21. According to this theorem, magnetic flux is conserved in fluids with infinite electrical conductivity. For 10 points each:

[10] Name this theorem which states that the magnetic field lines of fluids with infinite conductivity move with the fluid.

ANSWER: **Alfvén's** (all-VANE's) theorem [or **frozen-in** theorem]

[10] Alfvén's theorem is an important result in magnetohydrodynamics, a field of study especially concerned with this state of matter.

ANSWER: **plasma**

[10] An important condition in numerical MHD is that the divergence of the magnetic field is zero, which implies that none of these theoretical particles exist.

ANSWER: **magnetic monopoles** <Sundberg>