

1. One approach to designing these objects is to transform their shape conformally into a circle and solve an integral equation, a technique known as Theodorsen's method. Another way of designing these objects is to apply the Zhukovsky transformation, which results in these objects that have a cusp at the trailing edge. In the theory of the "thin" types of these objects, these objects are modeled as vortex sheets that coincide with the camber line, which is constrained to be a streamline, and the strength at the trailing edge is set to zero to represent the Kutta condition. In order to fulfill its primary function, this object's shape must give rise to a circulation to satisfy the requirements of the Kutta-Zhukovsky theorem. The performance of these objects is typically characterized by plots of the drag and lift coefficients as a function of the angle of attack. For 10 points, identify these objects, examples of which include sails, wings, and propellers, a term properly referring to the shape of such an object in cross-section.

ANSWER: **airfoil** [prompt on "wing" or similar answers before mention]

2. The last chapter of this work is concerned with discovering the "optimal mix" of its title concepts, and concludes that no such mix can be found that would be stable over time. This work's first chapter draws on previous studies by Cyert and March to argue that "slack... is continuously being generated as a result of some sort of entropy characteristic of human... societies." In a chapter dedicated to the dynamics of two-party systems, this work notes that the Goldwater nomination falsified the Hotelling-Downs thesis, and its fifth chapter points to a "too-little noticed type of monopoly-tyranny: an oppression of the weak by the incompetent." The seventh chapter of this work puts forth a theory of its third title concept, which this work argues inhibits the application of the first title concept. This work argues that economists, such as Milton Friedman with his voucher plan, have overestimated the influence of its first title concept and underestimated that of the second, while political scientists have made the reverse error. The central thesis of this work is that responses to institutional failure come in the two title modes, which involve either leaving the institution or attempting an internal change of it. For 10 points, identify this most famous work of Albert Hirschmann.

ANSWER: **Exit, Voice, and Loyalty**

3. The organizers of this event appointed Lord Audley as their leader, and among the demands issues by the organizers of this event was a request to punish Archbishop Morton and Reginald Bray. During this rebellion, an army led by Thomas Flanmark and Michael Joseph, who was known as "An Gof," or "the smith," crossed the Deptford Bridge on the Ravensborough River and defeated a small force led by Lord Daubeney at the Battle of Guildford. The proximate cause of this rebellion was Parliament's conditional grant of 60,000 pounds to the king to prosecute the war against Perkin Warbeck and the Scots. Ending with the rebels' defeat at the Battle of Blackheath, for 10 points, identify this 1497 rebellion against Henry VII which took its name from the southwestern region of England in which it originated.

ANSWER: **Cornish** Rebellion or **Cornwall** Rebellion

4. This scientist argued that constructing binary oppositions was a deficient experimental paradigm within psychology in a 1973 paper titled "You can't play 20 questions with Nature and win." This man's most famous collaboration, conducted with a Nobel Prize winner in economics, resulted in a book which formalized the title activity as a heuristic search in a problem space defined by a task and was titled *Human Problem Solving*. Together with John Laird and Paul Rosenbloom, this scientist created the Soar cognitive architecture, which grew out of his past work on the General Problem Solver with J.C. Shaw and Herbert Simon. This scientist outlined a set of functional criteria for a human cognitive architecture and

argued for a framework which combines “a single system of mechanisms that operate together to produce the full range of human cognition,” in his 1990 magnum opus, *Unified Theories of Cognition*. For 10 points, identify this CMU-based computer scientist and pioneer in artificial intelligence.

ANSWER: Allen **Newell**

5. This author’s first work was a translation of Byron, Goethe, Heine, and other Romantic poets and was titled *Vestiges*. This man self-published a magazine called *The Pleiades*, in which he printed his novel *Vita Sexualis*, which was promptly censored. In one story by this author, the main character falls in love with the title woman while working abroad, but abandons her to return home after feeling guilty. That work was part of this author’s “German trilogy” of stories, and was titled “The Dancing Girl.” In this man’s most famous work, a woman who wishes to provide for her father becomes the mistress of the money-lender Suezo. That novel is told to the narrator by Okada, who has been hoping to catch the eye of Otama, the main character of this author’s most famous novel. For 10 points, identify this Meiji-era author of *The Wild Geese*.

ANSWER: Mori **Ogai**

6. This work concludes with the assertion that “Capitalism in decline finds that whatever of quality is still capable of producing becomes... a threat to its own existence,” in a section that outlines the interaction between one of its title concepts and dictatorships. One title concept of this work is lauded for “seeking to go beyond Alexandrianism,” and calls it “the imitation of imitating,” while another title concept is described as being applicable to “all that’s academic.” This work begins by noting that “the same civilization produces simultaneously... a poem by T.S. Eliot and a Tin Pan Alley song,” and includes a thought experiment in which a Russian peasant is seen to prefer the work of Repin because it “tells a story.” This work’s second title concept is condemned in this work for using the “debased... simulacra of genuine culture,” and for being “vicarious experience and faked sensations,” and is called a “rear guard” in opposition to the first title concept, which is exemplified by the work of such people as Joyce and Picasso. First published in the *Partisan Review*, for 10 points, identify this essay which champions abstract art, written by Clement Greenberg.

ANSWER: **Avant-Garde and Kitsch**

7. One novel by this author opens each chapter with a catalogue entry for a fictional painting of a scene from Ovid’s *Metamorphosis*. He drew on the life of Anthony Blunt to create the character Victor Maskell, who serves as a World War II spy and an advisor for Elizabeth II. This author wrote an open letter in 1981 asking for the Booker Prize to be awarded to him so he could use the cash to buy books for libraries. His novels *Athena* and *Ghosts* concern a character who is arrested for killing a servant girl while trying to recover some of his family’s paintings. That character, Freddy Montgomery, first appears in his novel *The Book of Evidence*. He was commissioned to write the 2014 Philip Marlow novel *The Black Eyed Blonde* because of his experience writing detective novels under the alias Benjamin Black. In his best known novel, the protagonist responds to the death of his wife Anna by returning to his childhood home and remembering the drowning of the twins Chloe and her mute twin brother Myles. For 10 points, name this Irish author who wrote about Max Morden in *The Sea*.

ANSWER: John **Banville**

8. In one account of this being’s death, he finds a bag on the ground that he attempts to lift, but because it contains the weight of the Earth, he sweats blood and dies. In another account, this being blows his strength into a companion after accidentally trapping himself in a stone coffin, but when that companion is unable to lift the lid, this being asks him to chain up his horse next to the coffin so that it might die next to its master. After asking a stranger named Mikula how he might learn his fate, this being rides to the

Northern Mountains where a blacksmith tells him that he is to marry a woman in the Kingdom by the Sea. After riding to that kingdom, this being finds a woman lying on a dunghill and stabs her, also leaving her some money, but later discovers that the beautiful merchant he married was actually that same maiden. In the most famous story about this being, he is struck three times by Ilya Muromets, whom he then picks up and traps in his pouch, but after his horse complains about carrying two nights, Muromets and this being become companions. For 10 points, identify this giant from Slavic folklore whose name means "the holy one from the mountains."

ANSWER: **Sviatogor**

9. This politician sparked a constitutional crisis when he attempted to prevent the appointment of Supreme Court justices and removed Justice Sajjad Ali Shah from the court. That crisis during this politician's second term was worsened with the resignation of President Farooq Leghari, and this politician's second term also saw his government conduct his nation's first nuclear test. A member of the military government of Muhammad Zia-ul-Haq, this man won his highest post in an election that took place after President Ghulam Ishaq Khan dismissed Benazir Bhutto's government. Overthrown in 1999 by Pervez Musharraf, more recently, this leader of his nation's Muslim League-N faction overcame the opposition of rival Imran Khan to win a third term as prime minister. For 10 points, identify this politician currently serving as the PM of Pakistan.

ANSWER: Nawaz **Sharif**

10. One depiction of this location features a lone lamppost just left of center of the painting whose vertical line aligns with the peak of the roof of this location. A view of this location and the smoke rising from it was depicted from an elevated perspective by Norbert Goeneutte, and a famous structure overlooking this location was depicted by Jean Beraud, as well as by an artist who showed a gray-suited man looking down on this location while a woman with a parasol and a man in a tophat walk by. One painting commonly referred to by the title of this location actually depicts a girl in a blue dress and a woman, modeled by Victorine Meurent, in front of this location, which is shrouded in smoke. Another depiction of this location depicts the Pont de l'Europe, which spans the yards outside of this building, and was part of a series of eleven canvases depicting this location, most of which depict the play of light in the steam that occupies this structure. For 10 points, identify this structure depicted by both Edouard Manet and Claude Monet, the latter in paintings like *Arrival of the Normandy Train*, the main train station of Paris.

ANSWER: **Gare St. Lazare** [accept **St. Lazare train station**, prompt on just "train station"]

11. In this work, it is argued that "a herdsman who is a self only in the sight of cows," and "a ruler who is a self in the sight of slaves," are both very low selves. An appendix to this work containing a "general observation about offense," explains a certain concept with the example of a peasant who is summoned before the Emperor with the invitation to marry the Emperor's daughter. This work uses as an example the man who said "Either Caesar or nothing," but because he did not become Caesar, "he now cannot endure to be himself," and asks whether the title concept is "an advantage or a drawback?" before deciding that dialectically it is both. This work characterizes the title phenomenon as a "disrelationship," and argues that the title concept cannot have a bodily form in the Christian understanding. This work's first chapter is dedicated to categorizing the forms of the title condition, which is also equated with sin in the second part. Taking its title from the story of Lazarus in the Gospel of John, for 10 points, identify this philosophical work which posits that the title condition is "despair," written by Soren Kierkegaard.

ANSWER: The **Sickness Unto Death**

12. This work's last movement begins with a repeated A-F dyad with a middle voice oscillating between B and C, and ends in an "obstinate" A major. A major is also suggested at the opening of the second

movement, with its repeated motive of E-G#-F#; after a direct modulation to B-flat minor, the soloist enters and the tonal centre soon moves to D-flat major. After a return of the opening motive, the movement ends with repeated D-flats in the solo part and a D-flat major chord with an added sixth in the strings. The first movement of this work begins with an E Aeolian melody in the double basses, which gradually expands from a two-part to an eight-part canon; after a section featuring the soloist, the same thing happens in reverse. The text of this work's second movement is a combination of an inscription on a prison wall and the Ave Maria in Polish. For 10 points, name this third symphony of Henryk Górecki.  
ANSWER: **Symphony of Sorrowful Songs** [accept Henryk **Górecki**'s **Third** Symphony early]

13.

14. Pursuant to the provisions of this treaty, about 500 prisoners were released from Tersane a few months after it was signed, and following the terms of this treaty, *kadis* were ordered to free privately owned slaves in one polity that signed this treaty. One party to this treaty was forced to cede to the other party the fortresses of Kerch and Yenikale, part of Kuban, the Kinburn fortress at the Dnieper-Bug estuary, and the port of Azov. As a consequence of this treaty, the Crimean Khanate became independent for about a decade before being annexed by one party to this treaty, and in addition to ceding territory, the party to this treaty that lost the war which this treaty ended was forced to acknowledge the right of the winning party to represent Orthodox Christians in Moldavia and Wallachia. For 10 points, identify this 1774 treaty signed in the namesake Bulgarian town that ended the first major Russo-Turkish war.

ANSWER: Treaty of **Kuchuk-Kainardji**

15. In this novel, Mr. Hardesty is killed when he discovers the main character's true identity. The main character of this novel momentarily escapes death after his nephew drives the truck containing himself and that character off a bridge, but is eventually killed by Officer Figlow when Figlow discovers that the main character has stolen his gun. Mrs. Palazzo is another character killed in this novel by Nick Slater, whom the main character frees from prison. The main character keeps his nephew Luke and Luke's mother Millie tied up in his basement, and his psychosis stems from the murder of his sons by his father-in-law, Mr. Paxton, whom the main character of this novel strangles. This novel's main character is first arrested in Batavia, New York, for writing the word "love" on the street, and that main character conducts the title conversations with Batavia's police chief Fred Clumly. For 10 points, identify this novel about Taggart Hodge who goes by the titular moniker, a novel by John Gardner.

ANSWER: The **Sunlight Dialogues**

16. In an essay published on The Immanent Frame website, this non-Jaspers thinker argued that Brahmins, Buddhist monks, and Hebrew prophets all represented a similar type of response to the legitimation crises of the axial age because they rejected political entanglements and criticized society from the outside as "renouncers." This thinker analyzed the place of *Liebesakosmismus* in an article that examined the place of "world-denying love" in Max Weber's sociology of religion. The axial age is central to this thinker's magnum opus, which draws on Merlin Donald's tripartite division of cultures into mimetic, mythic, and theoretical to chart the emergence of the title phenomenon as a counterpart to human evolution. This thinker developed his most famous concept from an essay into a book titled *Habits of the Heart*; that essay by this thinker begins by citing Kennedy's inaugural address to illustrate a concept from *The Social Contract*, which this thinker called "the subordination of the nation to ethical principles that transcend it." For 10 points, identify this American sociologist who wrote *Religion in Human Evolution* and introduced the concept of the American civil religion.

ANSWER: Robert Neelly **Bellah**

17.

18. The small type of these proteins contains a conserved alpha-crystallin domain. In *E. coli*, sigma 32 replaces sigma 70 in RNA polymerase to upregulate these proteins. The activity of an example of these proteins is regulated by a cofactor with a J domain. Again in *E. coli*, a misfolded protein is ensconced in an example of these proteins, GroEL, which is capped by GroES, another example of them. These proteins are mostly suffixed by their weight in kilodaltons, like the 70, 90, and 100 types. The best studied class of these proteins acts as molecular chaperones. For 10 points, identify these proteins that are part of the response to an increase in cell temperature.

ANSWER: **Hsps** [or **heat shock** proteins; or **heat stress** proteins; or molecular **chaperone** proteins or **chaperonins** until "chaperones" is read]

19. In one appearance, this character masquerades as the son of the great Lieutenant Schmidt in order to con a local official. The only personal detail revealed by this character is that his father was a Turkish subject, and he frequently refers to himself as the "great combinator." In one appearance, this character serves as the leader of a group which gets around in a car dubbed "The Antelope," and schemes to bilk millionaire Alexander Koreiko out of his money, while in another appearance, this character promises the people of the town of Vasyuki that he will organize an "interplanetary chess tournament" there. Although this character's creators had Kisa Vorobyatinov kill him in the first novel in which he appeared, and whose plot was concerned with the location of jewels supposedly stashed in the title objects, he was so popular that he was resurrected for that novel's sequel, *The Golden Calf*. For ten points, identify this picaresque character created by Ilf and Petrov, the main protagonist of *The Twelve Chairs*.

ANSWER: **Ostap** Suleiman Berta Maria **Bender**-bey [accept either name]

20. Thressa Stadtman is particularly known for studying the biochemistry of this element. This element's dioxide is used for the oxidation of alkenes to allylic alcohols and ketones to alpha-diketones. This element is found in the active site of an enzyme subfamily that catalyzes the removal of an iodine from T4 to form T3, which is active, or reverse T3 or T2, which are inactive; that enzyme subfamily is the iodothyronine deiodinases. Glutathione peroxidases and thioredoxin reductases contain this element at their active site. An amino acid with this element is coded for by the UGA codon, which is normally a stop codon. That amino acid is an analog of cysteine with this element in place of sulfur. For 10 points, identify this chalcogen that is just heavier than sulfur.

ANSWER: **selenium** [or **Se**]

1. This poem begins with Anne sitting in the garden that also holds the grave of her husband Harry and consists primarily of Anne's reminiscences, including the time Harry tried to choke her after she had a nightmare, thinking that the words she spoke in her sleep indicated a lover. For 10 points each:

[10] Identify this poem, which also gives its name to a collection containing it as well as the poems "Falling Asleep over the Aeneid," and "Her Dead Brother."

ANSWER: The **Mills of the Kavannaughs**

[10] *The Mills of the Kavannaughs* was written by this poet whose other collections include *Lord Weary's Castle*.

ANSWER: Robert **Lowell**

[10] *The Mills of the Kavannaughs* also contains a poem titled "The Fat Man in the Mirror," written in imitation of this Austrian poet and novelist of *The Forty Days of Musa Dagh*.

ANSWER: Franz **Werfel**

2. According to legend, this was done to St. Peter before his crucifixion, and therefore all monks performed this action upon taking their vows.

[10] Name this action that Jews cannot perform during the Counting of the Omer.

ANSWER: **shaving** or **cutting hair**

[10] According to Islamic hygienic law, or Sunan al-Fitra, this is the only part of the body that women are not required to shave every 40 days. For men, beards as well as this part of the body should not be shaved.

ANSWER: **eyebrows**

[10] This Hindu ceremony, which generally occurs at one year of age, is a child's ceremonial first haircut. A tuft of hair called the Sikha may remain.

ANSWER: **Mundan**

3. In the "Polemical Introduction" to this work, the author says that his approach is "based on Matthew Arnold's precept of letting the mind play freely around a subject." For 10 points each:

[10] Identify this work composed of four essays on the theory of modes, symbols, myths, and genres.

ANSWER: **Anatomy of Criticism**

[10] *Anatomy of Criticism* was written by this Canadian literary critic, whose first work was a study of William Blake titled *Fearful Symmetry*.

ANSWER: Herman Northrop **Frye**

[10] As an example of the fourth phase of romance, Frye gives the fifth book of this work, whose seventh canto retells the myth of Isis and Osiris, and is concerned with the "legend of Justice."

ANSWER: The **Faerie Queene**

4. Originally slated to be named *Guardians at the Gate*, this book's title was taken from a phrase its author had used in his article for Harper's, "The Very Expensive Education of McGeorge Bundy," rather than from a hymn, as Mary McCarthy claimed. For 10 points each:

[10] Identify this 1972 book, a history of American involvement in Vietnam.

ANSWER: The **Best and the Brightest**

[10] This American journalist, who had also written his 1965 book *The Making of a Quagmire* on the Vietnam War, authored *The Best and the Brightest*.

ANSWER: David **Halberstam**

[10] This book with which Halberstam followed *The Best and the Brightest* chronicles the political influence

of four media companies: CBS, *Time* magazine, the *Washington Post*, and the *Los Angeles Times*.

ANSWER: The **Powers That Be**

5. This sociologist's book, *The Truly Disadvantaged*, develops the "spatial mismatch" theory of the opportunity costs incurred by those who live far from where they work. For 10 points each:

[10] Identify this American sociologist who teaches at Harvard.

ANSWER: William Julius **Wilson**

[10] Wilson is best known for this 1996 work, which examines the "world of the new urban poor," and the devastating effects of chronic joblessness on the inner city ghetto.

ANSWER: **When Work Disappears**

[10] *When Work Disappears* rejects this theory, which holds that those who are poor are lacking the proper value system.

ANSWER: **culture of poverty** theory

6. A floating red sword points at Jesus, who sits on a golden ring in the center panel of one work by this artist. For 10 points each:

[10] This artist carved a *Shrine of St. Ursula* and made a *Passion Polyptych* and also showed an armored Archangel Michael weighing souls in the lower center of a triptych of *The Last Judgment*.

ANSWER: Hans **Memling** [or Hans **Memlinc**]

[10] Hans Memling worked in this region, which was one of the focal points of the Northern Renaissance. Rubens was another prominent painter from this region.

ANSWER: **Flanders** [antiprompt on "Antwerp" or "Bruges"; prompt on "Belgium" or "The Netherlands"]

[10] This late 15th and early 16th century Flemish artist pioneered the landscape with works like *The Baptism of Christ* and *Landscape with the Destruction of Sodom and Gomorrah*.

ANSWER: Joachim **Patinir** [or **Patenier**]

7. A roughly spherical halo of these objects is concentrated around the Galactic center in the Sagittarius-Scorpius-Ophiucus region. For 10 points each:

[10] Identify these aggregates of gravitationally bound stars; Omega Centauri is a canonical example.

ANSWER: **globular clusters**

[10] The "second parameter problem" in globular cluster studies is finding a parameter besides metallicity that influences the color of stars which are at this stage in their life cycle. Stars in this part of the HR diagram have departed from the red giant branch following a helium flash.

ANSWER: **horizontal branch**

[10] This astronomer used the brightness of globular clusters to calculate the distance to the Galactic center, and notably engaged in a debate with Heber Curtis over whether other galaxies were actually inside the Milky Way, or separate from it.

ANSWER: Harlow **Shapley**

8. Answer the following about Norman Foster, for 10 points each.

[10] Norman Foster used a triangular framing pattern in the design of a green New York skyscraper named for this scoundrel. His personal mansion, usually called his "Castle", is located in California.

ANSWER: William Randolph **Hearst**

[10] Foster designed this curved, domed London skyscraper at 30 St. Mary Axe.

ANSWER: The **Gherkin** [or the **Swiss Re** Building]

[10] Foster's architectural firm also designed this gigantic pyramid-cum-opera house for the capital of Kazakhstan.

ANSWER: the **Palace of Peace and Reconciliation**

9. In 1971, this leader modified his country's constitution to make it an explicitly socialist state, and in 1979, he introduced a version of Janos Kadar's "New Economic Mechanism" which allowed a degree of liberalization. For 10 points each:

[10] Identify this man who for 35 years led Communist Bulgaria.

ANSWER: Todor **Zhivkov**

[10] Zhivkov rose to power partly by outmaneuvering and then ousting this man, who preceded him as party leader and was known as "little Stalin" for his methods of industrializing Bulgaria.

ANSWER: Vulko **Chervenkov**

[10] Chervenkov's fall was partly caused by the fact that he depended on the patronage of this Russian leader, who briefly held the post of premier of the USSR following Stalin's death. After attempting a coup against Khrushchev in 1957, he was exiled to manage a Kazakh power plant, a fate worse than death.

ANSWER: Georgy Maximilianovich **Malenkov**

10. Dihydrolipoyl transacetylase and dihydrolipoyl dehydrogenase are two enzymes used in this complex. For 10 points each:

[10] Identify this complex that performs the oxidation decarboxylation reaction linking glycolysis and the citric acid cycle.

ANSWER: **pyruvate dehydrogenase** complex [or **PDC**; or **PDH** complex; do not accept "pyruvate decarboxylase"]

[10] The E1 enzyme in the pyruvate dehydrogenase complex requires this cofactor, which is required for decarboxylations of alpha-keto acids.

ANSWER: **TPP** [or **thiamine pyrophosphate**]

[10] TPP is a cofactor for transketolase in this pathway. Its first phase reduces two NADP<sup>+</sup> to NADPH by converting glucose-6-phosphate to ribulose-5-phosphate.

ANSWER: **pentose phosphate** pathway [or **phosphogluconate** pathway or **hexose monophosphate shunt**]

11. This woman's most notable action is using her magic rake to gather up the pieces of her son after that son is killed hunting the Swan of Tuonela. For 10 points each:

[10] Identify this woman who brings her son back to life after he is killed by the herder Soppa Hat.

ANSWER: **Lemminkäinen's mother**

[10] Lemminkäinen was hunting the Swan of Tuonela in order to win the hand of the daughter of this woman, the mistress of North Farm.

ANSWER: **Louhi**

[10] Prior to going hunting for the Swan, Lemminkäinen had won a race on skis with this creature.

ANSWER: **Hiisi** elk

12.

13. This period began when the Kenseikai, Seiyukai, and Kakushin Club formed a coalition that won a decisive victory in the House of Representatives against the government of Kiyoura Keigo. For 10 points each:

[10] Identify this period of Japanese political history which lasted from 1924 to 1933, and featured six different governments run by the namesake coalitions.

ANSWER: period of party **cabinets** or [accept **party** governments]

[10] The formation of party cabinets was hindered by this document, which equated the sovereign authority of the state with that of the emperor, and also made the emperor "sacred and inviolable,"



which mean he could not assume direct political responsibility. It came into force in 1888.

ANSWER: **Meiji** Constitution

[10] This first prime minister of Japan was largely responsible for the writing of the Meiji Constitution, into which he inserted the concept of *kokutai*, or national unity. He also served as the resident-general of Korea during part of the Japanese occupation.

ANSWER: **Ito** Hirobumi

14. This type of reaction appears as an upside-down eutectic on phase diagrams. For 10 points each:

[10] Identify this type of reaction in which a liquid and a solid phase together form a new solid phase upon cooling, or vice versa upon heating. It is displayed by the platinum-rhenium phase diagram.

ANSWER: **peritectic** reaction [or word forms; or **incongruent** reaction]

[10] The phase diagram for this system displays a peritectic point at 1493 Celsius in the austenite phase.

ANSWER: **iron-carbon** [or **steel**; or **iron-iron carbide**; or **Fe-Fe<sub>3</sub>C**]

[10] Name either of the two transformation diagrams used to determine the processing steps to obtain a given type of steel from another. One is used for transformations at constant temperature while the other is used for transformations at continuously decreasing temperatures.

ANSWER: **time-temperature** transformation diagrams [or **continuous cooling** transformation diagrams; or **TTT** diagrams; or **CCT** diagrams]

15.

16. One way of measuring this relation for phonons is through neutron scattering experiments. For 10 points each:

[10] Identify this relation for a propagating wave, which give the frequency as a function of the wave vector.

ANSWER: **dispersion** relation

[10] For such neutron scattering experiments, the change in neutron momentum is the negative of the change in the total value of this quantity, which is given by  $\hbar$  times the phonon wave vector.

ANSWER: **crystal momentum**

[10] In neutron scattering, the interaction of a neutron with this many phonons produces a sharp peak in the spectrum; when the neutron interacts with two phonons, the result is a continuous spectrum.

ANSWER: **one**

17. The Pericand family are among those who are fleeing Paris in the face of the Nazi advance in this novel's first section, "A Storm in June." For 10 points each:

[10] Identify this novel, rescued in notebook form by the Elizabeth Gille, the novelist's daughter.

ANSWER: **Suite Francaise**

[10] This author, who was deported to Auschwitz and killed there in 1942 wrote *Suite Francaise*. Despite being Jewish, she frequently published in magazines with anti-Semitic tendencies and wrote a pretty anti-Semitic novel herself, about the titular hook-nosed banker, *David Golder*.

ANSWER: Irene **Nemirovsky**

[10] Nemirovsky had planned for *Suite Francaise* to encompass five books; this Sartre quartet, of which only three books, were completed, covers roughly the same time period and subject and comprises the books *The Age of Reason*, *The Reprieve*, and *Troubled Sleep*.

ANSWER: The **Roads to Freedom** or Les **chemins de la liberte**

18. Answer the following about chamber works involving the clarinet, for 10 points each.

[10] This Mozart trio for clarinet, viola, and piano consists of three movements in E-flat major, the last of

which is a seven-part rondo.

ANSWER: **Kegelstatt** Trio, K. 498

[10] Another work for clarinet, viola, and piano is the *Eight Pieces* by this composer of *Kol Nidre*. The eight movements include a "Romanian Melody" and a "Night Song".

ANSWER: Max **Bruch**

[10] This composer's four-movement *Märchenerzählungen* is also scored for clarinet, viola, and piano. He also wrote a set of three *Fantasiestücke* for clarinet and piano.

ANSWER: Robert **Schumann**

19. This author fictionalized himself as Alexandre Mordekhai Benillouche in his autobiographical novel, *Pillar of Salt*. For 10 points each:

[10] Identify this Tunisian Jewish author whose novel *The Scorpion* concerns Marcel's attempts to make sense of the documents left behind by his vanished brother Emile.

ANSWER: Albert **Memmi**

[10] Memmi is best known for this non-fictional work, which argues that the actions of the title figure are a "historical misfortune" and that those actions divorce both of the title types of people from their true selves.

ANSWER: The **Colonizer and the Colonized** or **Portrait du colonise precede du Portrait du Colonisateur**

[10] This other poet and novelist has also written extensively on post-colonial literature, coining the term *antillanite* to refer to a uniquely Caribbean identity. This author from Martinique wrote the books *The Ripening* and *The Overseer's Hut*.

ANSWER: Edouard **Glissant**

20. This phrase was originally formulated by Sergey Uvarov, the minister of education, who presented it in a report on the university system. For 10 points each:

[10] Identify this propaganda slogan, which Uvarov argued constituted the things that students should be taught to protect them from the corrupting influence of the west.

ANSWER: **Orthodoxy, autocracy, and nationality** [accept in any order; Russian: **Parvoslaviye, Samoderzhaniye, Narodnost**]

[10] "Orthodoxy, autocracy, and nationality," became the official ideology of this Russian Tsar, who succeeded Alexander I after suppressing the Decembrist revolt, and was known as the "gendarme of Europe."

ANSWER: **Nicholas I** or **Nikolai Pavlovich**

[10] Repressing people is hard work, which Nicholas delegated to this secret police, a division of the Imperial Chancery which was headed by Count Alexander Bekendorf.

ANSWER: **Third Section** of the Imperial Chancery