

2014 BELLum Omnium Contra Omnes**Packet 2: Tossups**

1. The first movement of this man's fifth symphony concludes with the celesta playing chromatic scales. That symphony, subtitled "An Artist's Creative Response to Just Criticism," was composed after an opera by this composer was criticized in a *Pravda* article. This composer of *Lady Macbeth of the Mtsensk District* set five Yevgeny Yevtushenko poems in a work commemorating the massacre of Ukrainian Jews. Another of this composer's symphonies mourns the deaths of Soviet citizens during a German offensive and includes the "Invasion" theme. For 10 points, name this Soviet composer of the *Babi Yar* and *Leningrad* symphonies.

ANSWER: Dmitri Dmitriyevich **Shostakovich**

2. This man took the throne name *Usermaatre Setepenre*, meaning "the mighty truth, the chosen." This man moved his capital near the site of Avaris and completed the hypostyle of the Temple of Karnak, construction of which had begun under this man's father, Seti I. This man constructed statues of two of his wives at knee-height to a colossal statue of himself beside a small funerary temple dedicated to his favorite wife, Nefertari. He also signed a treaty with Hattusili III after defeating the Hittites at the Battle of Kadesh. For 10 points, name this Egyptian pharaoh who launched military campaigns into the Levant and built the temple of Abu Simbel.

ANSWER: **Rameses II** [accept **Ramses the Great**; accept **Ozymandias**]

3. One class in this phylum traps food in mucus and uses cilia to move it down an ambulacral groove to the mouth. That class is named Crinoidea. In members of this phylum, sclerocytes secrete calcium carbonate to form the ossicles that make up their outer covering. In order to move, members of this phylum use ampullae that squeeze water into tube feet connected to a water vascular system. This phylum, characterized by radial symmetry, contains the classes Holothuroidea and Asteroidea. For 10 points, name this phylum of animals whose name is Greek for "spiny skin" and which includes animals such as sand dollars, sea urchins, and starfish.

ANSWER: **echinodermata** [or **echinoderms**]

4. This artist collaborated with Steve Duda on the project BSOD. His collaboration with Kaskade resulted in the tracks "Move with Me" and "I Remember." His album $4 \times 4 = 12$ ("four times four equals twelve") included the tracks "Some Chords" and "Animal Rights." One song produced by this artist has the chorus "Here, the world that the children made," is based on a short story by Ray Bradbury, "The Veldt," and was released in the album *Album Title Goes Here*. Gerard Way sang one track by this artist, "Professional Grievers," and he used the vocals of Sofia Toufa in "Sofi Needs a Ladder." For 10 points, name this house producer who most famously produced "Strobe" and "Raise Your Weapon."

ANSWER: **deadmau5** (pronounced "dead mouse") [or Joel Thomas **Zimmerman**]

5. One character in this work claims to have rescued the protagonist from a massive beast, after which the Three Ladies padlock his mouth shut for lying. In another scene, that birdcatcher is forced to swear not to speak to women, but sings about his desire for a wife and pledges himself to an elderly woman, who then becomes young. Those two characters sing the duet "Pa... pa... pa..." after Papageno tries to hang himself. Pamina is given a dagger to kill Sarastro by her mother, the Queen of the Night in the aria *Der Hölle Rache*. For 10 points, name this work in which Prince Tamino receives the title instrument, the last opera by Mozart.

ANSWER: *The **Magic Flute*** [or *Die **Zauberflöte***]

6. "In silence in dreams' projections," this poet is faithful and "[does] not give out" as a flame burns "deep in [his] breast" while "with impassive hand" he dresses wounds. This poet tells "a shy and hidden" "gray-brown bird" "in the swamp in secluded recesses" to "sing on, warble your reedy song" while he sings "a reminiscence" of his childhood "Out of the mocking-bird's throat," and "Out of the cradle endlessly rocking." This poet "shall mourn with the ever-returning spring," when the "lilac blooming perennial and drooping star in the west" makes him think "of him I love." For 10 points, name this poet of "When Lilacs Last in the Dooryard Bloom'd" and *Leaves of Grass*.

ANSWER: Walter "Walt" **Whitman**

7. Two ammonia groups and two atoms of this element act as ligands to platinum in the cancer drug cisplatin. Each monomer of neoprene contains one atom of this element. An atom of this element exists on each end of mustard gas, and this element's gas is called bertholite. Aqua regia consists of nitric acid and an acid of this element, and two atoms of this element appear in an atom of phosgene. An oxide of this element is sometimes used in bleach. This halogen has the highest electron affinity of any element. For 10 points, name this halogen with atomic number 17 that is often added to swimming pools and that bonds with sodium to form table salt.

ANSWER: **chlorine** [or **Cl**; or **Cl₂**; prompt on "**chloride**" or "**Cl**"]

8. The Saratov Bridge runs across this river to Engels. The largest tributary of this river is the Kama River and joins this river at Samara Reservoir. The Sheksna River connects this river to Lake Onega and to the Baltic Sea through the Rybinsk Reservoir. The Oka River flows into this river at Nizhny Novgorod. The Ivankovo Reservoir connects this river to the Moskva River through the Moscow Canal. Before flowing into its namesake delta, one part of this river splits into the Akhtuba River near the city formerly known as Stalingrad. For 10 points, name this river that starts in the Valdai Hills and flows through western Russia into the Caspian Sea, the longest river in Europe.

ANSWER: **Volga** River [or **Volga-Matushka**; or **Itil**; or **Atil**; or **Rav**; or **Jul**]

9. James Tissot painted this event from the perspective of the central figure, and Masaccio painted God the Father standing behind a depiction of this event in his *Holy Trinity*. Two angels holding chalices surround the central figure in the "Mond" version of this event painted by Raphael. A version of this event in Yellow includes a field of wheat with bright red trees and was painted by Paul Gauguin. Salvador Dalí painted this event with the central figure on a hypercube, and Marc Chagall's depictions of it include ones named "Golgotha" and one labeled "White." For 10 points, name this scene in art that depicts the method by which Jesus died.

ANSWER: **crucifixion** of Jesus Christ [accept obvious equivalents like **dying on the cross**; prompt on "**execution**"; prompt on "**Passion** of Christ"]

10. Mr. Otis encounters one of these characters in Canterville Palace in an Oscar Wilde play. Flora speaks to a character of this type named Miss Jessel in *The Turn of the Screw*. While reading, Brutus meets another character of this type, who claims that they will meet again at Philippi. In another work, a character of this type appears in full battle armor and had poison poured into his ear. In a separate work, a character of this type reveals himself with chains "wound about him like a tail" and is named Jacob Marley. For 10 points, identify this spectral type of literary character, examples of which visit Ebenezer Scrooge as *these* of Christmas Past, Present, and Future.

ANSWER: **ghosts**

11. The first martyr of this religion was forced to sit on a burning iron sheet for five days before being thrown into a river. The *Bara Maha* is read during one of this religion's holiday Sangrand, and adherents of this religion are baptized after drinking holy water during Amrit Sanchar. Adherents of this religion sing Shabad Kirtan at places of worship that bear the Ik Onkar known as *gurdwaras*, and a wooden comb and a dagger are among this religion's Five K's. The "Mul Mantra" and *Japji Sahib* appear in this religion's central text, the *Adi Granth*. For 10 points, name this religion founded by Guru Nanak, many of whose adherents live in the Punjab region of India.

ANSWER: **Sikhism** [or **Sikhi**]

12. Some craters on one moon of this planet were named after places and characters from *Gulliver's Travels*. This planet's orbit is the second-most eccentric of the planets in our Solar System. The south pole of this planet contains Swiss cheese features, and the north is dominated by the Borealis basin. Cirrus clouds form around this planet because of the sublimation of carbon dioxide from its ice caps, causing winds that also pick up dust and water vapor. This planet's color results from the high iron oxide content on its surface, and it is currently being explored by the *Opportunity* and *Curiosity* rovers. For 10 points, name this fourth planet of the solar system.

ANSWER: **Mars**

13. In his first election, this man defeated William Crawford for his party's nomination and defeated Rufus King to take a higher office. This president annexed Florida and sent Andrew Jackson to quell an uprising in that region during the First Seminole War. During his presidency, slavery was outlawed above the thirty-sixth parallel in the Missouri Compromise. This man issued a statement asserting the "free and independent condition" of "the American continents," warning Europeans against involvement in the Western Hemisphere in that namesake doctrine. For 10 points, name this fifth President of the United States, who held office during the Era of Good Feelings.

ANSWER: James **Monroe**

14. Before this character's death, he goes to a police station and writes "A Few Observations for the Good of the Service." He gives another character two pistols with which to give a signal later. He recognizes another character by noting the way he walks, but later requests to be dismissed after accusing that character, Monsieur Madeleine, of being an escaped convict. This man is tied to a pole after being identified as a police spy by Gavroche. At the beginning of the novel in which he appears, he is a jail guard at the Bagne of Toulon. For 10 points, name this police inspector who throws himself into the Seine after pursuing Jean Valjean in Victor Hugo's *Les Misérables*.

ANSWER: Inspector **Javert**

15. Susumu Tonegawa activated neurons altered by channelrhodopsin to construct a false form of this phenomenon associated with fear. The Atkinson-Shiffrin model proposes three components of this phenomenon. George Miller described the capacity for one type of this phenomenon as "The Magical Number Seven, Plus or Minus Two." The journalist "S" exhibited the eidetic form of this concept in a study by Alexander Luria. The anterograde form of one condition is the inability to encode new types of this phenomenon, often because of trauma to the hippocampus. For 10 points, name this mental capacity impaired by amnesia which has sensory, short-term, and long-term varieties.

ANSWER: **memory**

16. This adjective describes a phenomenon that causes galaxies to move towards the Hydra-Centaurus Supercluster. Axions may be a "cold" substance described with this adjective, while neutrinos may be the "hot" form of that substance. This word also describes a period before the first neutral matter was formed. An agent described by this word is proposed as the cause of the accelerating expansion of the universe, and a substance described by this word is thought to be made up of weakly interacting massive particles. For 10 points, name this adjective that describes matter and energy undetectable by electromagnetic radiation and thought to compose most of the universe.

ANSWER: **dark** [accept any of **dark** matter, **dark** energy, **Dark** Ages, **dark** flow]

17. All decrees of this event were ratified in the bull *Benedictus Deus*. Charles Borromeo wrote the catechism of this meeting and supposedly convinced the Pope not to ban polyphony after hearing Palestrina's *Missa Papae Marcelli*. The standardized Latin Mass later compiled by Pius V is sometimes named after this meeting. This council produced the first revision of Paul IV's *List of Prohibited Books*, and it set the number of sacraments at seven, reaffirmed the validity of indulgences and rejected the doctrine of *sola fide*. For 10 points, name this Ecumenical Council begun by Paul III and held in Northern Italy, the Catholic Church's answer to the Protestant Reformation.

ANSWER: Council of **Trent** [or *Concilium Tridentinum*; or **Nineteenth** Ecumenical **Council**]

18. One character in this novel believes that he has the "troubles" of Charles I in his head. The title character's aunt sends him to a boarding school in Canterbury after he ran away from his job at a wine-bottling company. The title character was brought up by Peggotty after initially being sent to boarding school at Salem House after biting his stepfather, Mr. Murdstone. This novel begins with a remark from the title character that the "following pages" will show who is the hero of his life. For 10 points, name this novel following the title character's life and marriage to Agnes Wickfield, a semi-autobiographical work by Charles Dickens.

ANSWER: *The Personal History, Adventures, Experience and Observation of **David Copperfield** the Younger of Blunderstone Rookery (Which He Never Meant to Publish on Any Account)*

19. This figure turned into a snake and slithered through a mountain to drink a potion created from the wisest being Kvasir, after which this figure transformed into an eagle to escape the potion's guardian Gunnlod. In another myth, this figure disguised himself as the sorcerer Grímnir and traveled to the court of Geirröd, where he predicted that the king would fall on his sword. This deity will be swallowed alive by the wolf Fenrir during Ragnarök. Huginn and Muninn fly around Midgard daily and whisper secrets to this rider of the eight-legged Sleipnir. For 10 points, name this one-eyed ruler of the Aesir and Asgard, the Norse god of battle and wisdom.

ANSWER: **Odin** [or **Wōden**; or **Wōtan**; or **Wōdan**]

20. The Aztecs received a form of this material known as *āmatl* as tribute. William Barrow studied decay in this material and developed a method of alkalizing this material to preserve it. In modern times, this material is produced by the Fourdrinier machine. The Abbasids first used water mills in the production of this material after learning the secrets of its production from prisoners captured at the Battle of Talas. The production of this material was said to have been developed by Cai Lun (“tsai LWUN”) during the Han Dynasty, and the Song Dynasty first used it for money. For 10 points, name this material made from wood pulp, often used as a writing surface.

ANSWER: **paper**

TB. One of this author’s poems ends by noting that “the ship is more than the crew.” The painter Dick goes blind in this author’s *The Light that Failed*. In another work by this author, the narrator tells the title water-bearer, “You’re a better man than I am.” A poem by this author advises the listener to “meet with Triumph and Disaster / And treat those imposters just the same” before exclaiming “you’ll be a Man, my son!” This author of “Gunga Din” and “If—” wrote a collection of stories featuring a boy who is raised by a pack of wolves and is hunted by Shere Khan. For 10 points, name this British author who wrote about Mowgli in *The Jungle Book*.

ANSWER: Joseph Rudyard **Kipling**

Packet 2: Bonuses

1. This pope reportedly said to his cousin and eventual successor, “God has given us the papacy; let us enjoy it.” For 10 points each.

[10] Name this Medici pope, who succeeded Julius II as pope and excommunicated Martin Luther with the papal bull *Exsurge Domine*.

ANSWER: **Leo X** [accept **Giovanni di Lorenzo** de Medici; prompt on “**Leo**” or “**Giovanni**”]

[10] The Medici family hailed from this Italian city, where the Medici financed such construction projects as the Uffizi Gallery, the Church of San Lorenzo and the dome of the Cathedral, designed by Brunelleschi.

ANSWER: Comune of **Florence** [or *Comune di Firenze*; or **Fiorenza**; or **Florentia**]

[10] Catherine de Medici supposedly instigated this event after the marriage of her daughter to the future Henry IV of France. It may have began with the attempted murder of Gaspard de Coligny, the leader of the targets of this event.

ANSWER: **Saint Bartholomew’s Day Massacre** [or *Massacre de la Saint-Barthélemy*]

2. This man composed the music for the coronation of King George II, including one anthem used at every British coronation since, *Zadok the Priest*. For 10 points each:

[10] Name this German-born English composer who wrote *Music for the Royal Fireworks* and his oratorio *Messiah*.

ANSWER: George Frideric **Handel** [or Georg Friedrich **Händel**]

[10] Handel wrote three suites of this name, intended to be performed on the River Thames for George I.

ANSWER: **Water Music**

[10] The aria “*Ombra mai fu*” begins the first act of this Handel opera, in which the fiancée of the title Persian king, son of Darius, attempts to wed the King despite his love for another woman.

ANSWER: **Serse** [accept **Xerxes**]

3. In this work, the author justifies despotism over barbarians to prepare them for democratic rule. For 10 points each:

[10] Name this 1859 essay in which the author argues for freedom of speech and other forms of the title concept and argues that the only reason the title concept should be limited is to prevent harm to others.

ANSWER: **On Liberty**

[10] *On Liberty* was written by this British philosopher who also wrote *Utilitarianism*.

ANSWER: **John Stuart Mill** [or **John Stuart Mill**; or John **Stuart Mill**; prompt on partial answer; do not accept “James Mill”]

[10] In another work, John Stuart Mill presented the title “System of” this subject, which includes his five methods, including the methods of agreement and concomitant variations. It is frequently taught in its propositional form.

ANSWER: **logic**

4. Name these figures and institutions from the Progressive Era during the 1900s and 1910s, for 10 points each.

[10] This Wisconsin Senator fought for the passage of the Seamen’s Act, which regulated working hours and wages for sailors. Under the Progressive Party, he was the third-party candidate in the presidential election of 1924.

ANSWER: Robert Marion “Fighting Bob” **La Follette**, Sr.

[10] This President created the Departments of Commerce and Labor and broke up J.P. Morgan’s Northern Securities Company. He was influenced by Upton Sinclair’s *The Jungle* to pass the Pure Food and Drug Act.

ANSWER: **Theodore Roosevelt**, Jr. [prompt on “**Roosevelt**”]

[10] This corrupt institution was called “The Millionaires’ Club” before the Seventeenth Amendment in 1913 mandated direct election of its members, two of which come from each state.

ANSWER: United States **Senate** [do not prompt on or accept “United States **Congress**” or “United States **House of Representatives**”]

5. The third of these states that the square of the orbital period is proportional to the cube of the orbit's semi-major axis. For 10 points each:

[10] Name these laws formulated by a German astronomer to describe the movement of bodies in the solar system, the first of which states that the orbits are ellipses with the Sun at one focus.

ANSWER: Johannes **Kepler**'s laws of **planetary motion** [accept either underlined part]

[10] Kepler's laws of planetary motion supported this model of the universe, in which the earth revolved around the sun, which was the center of the universe.

ANSWER: Copernican **heliocentrism** [accept word forms]

[10] This Danish astronomer combined the Copernican and Ptolemaic models of the universe to form a model in which the earth is the center of the universe, but the planets move around the sun.

ANSWER: **Tycho Brahe** [accept either underlined name; or Tyge Ottesen **Brahe**]

6. The Republic of the Marshall Islands and the Commonwealth of the Northern Mariana Islands were part of this organization's Trust Territory of the Pacific Islands. For 10 points:

[10] Name this supranational organization, whose Trusteeship Council arranged for countries to oversee the decolonization of such dependent territories. It is the successor to the League of Nations.

ANSWER: **United Nations**

[10] Italy was given control over this territory in East Africa in 1949, having colonized it before World War II. It joined with the British-held territory of the same name to the north and is now an anarchic country on the Horn of Africa.

ANSWER: Trust Territory of **Somaliland** [or Trust Territory of **Somalia**; or *Amministrazione Fiduciaria della Somalia*; or Italian **Somaliland**; or Italian **Somalia**; or **Somalia italiana**; or *Dhulka Talyaaniga ee Soomaliya*; or *Al-Sumal Al-Italiy*; do not accept "British Somaliland" or "*Dhulka Biritishka ee Soomaaliya*" or "*Al-Sumal Al-Britaniy*"]

[10] South Africa objected to the UN Trust Territory status of this modern country, then known as South-West Africa. It gained independence from South Africa in 1990, after a twenty-year guerilla war.

ANSWER: Republic of **Namibia** [or *Republiek van Namibië*; or *Republik Namibia*]

7. The kilometre-zero of France lies in the plaza in front of this structure. For 10 points each:

[10] Name this cathedral in Paris, began in 1160 by Bishop Maurice de Sully. It is notable for its gargoyles and its western rose window.

ANSWER: Cathedral of **Our Lady of Paris** [or *Cathédrale de Notre Dame de Paris*]

[10] Notre-Dame was constructed in what would be known as this architectural style, which is characterized by its use of stained glass and flying buttresses.

ANSWER: **Gothic** architecture

[10] This other gothic cathedral is characterized by its use of stained glass as a tympanum over the *Porta Maior*. It was also the coronation site of the kings of France.

ANSWER: Cathedral of Our Lady of **Rheims** [or *Cathédrale de Notre Dame de Reims*]

8. This figure's birth occurred after his parents Vasudeva and Devaki were imprisoned. For 10 points each:

[10] Name this charioteer of Arjuna and blue-skinned avatar of Vishnu. He gave advice to Arjuna before the Battle of Kurukshetra in the *Bhagavad Gita*, and the *Mahabharata* culminates in his death.

ANSWER: **Krishna**

[10] Arjuna was a member of this family, led by Yudhisthira during the Battle of Kurukshetra. This family fought against the Kauravas over the throne of Hastinapura.

ANSWER: **Pandavas** [or **Pandawas**]

[10] This woman is the wife of the five Pandavas. In one scene of the *Mahabharata*, Dushasana tries to disrobe her, but Krishna causes her sari to become continually longer so that he could not disrobe her completely.

ANSWER: **Draupadi**

9. A pink ribbon falls from the sky after the title character of this work screams his wife's name. For 10 points each:
 [10] Name this short story in which the title character leaves his wife Faith and ventures into the forest at night. After witnessing a witches' sabbath, the title character loses his faith in his Christian community.

ANSWER: "**Young Goodman Brown**"

[10] "Young Goodman Brown" was included in *Mosses from an Old Manse*, a short story collection by this author. Other works by this author include *Twice-Told Tales* and *The House of the Seven Gables*.

ANSWER: Nathaniel **Hawthorne** [or Nathaniel **Hathorne**]

[10] In this novel by Nathaniel Hawthorne, Hester Prynne has the title entity sewn onto her clothing after her adultery with Arthur Dimmesdale is discovered by Roger Chillingworth.

ANSWER: *The **Scarlet Letter***

10. Tensions between China and other Asian nations have risen recently over disputed territory in the Pacific Ocean. For 10 points each:

[10] Name these islands that, though administered by Japan since 1895, have been claimed by China and Taiwan. In 2012, Japan purchased three of these islands from their private owner, sparking protests in China.

ANSWER: **Senkaku** Islands [or **Diaoyu** Islands; or **Pinnacle** Islands; or **Diaoyutai** Islands]

[10] The Senkaku Islands lie in this sea that is ringed to the east by the Japanese-held Ryukyu Islands and China to the west. In November of 2013, China controversially created its Air Defense Identification Zone over most of it.

ANSWER: **East China** Sea [or **Eastern China** Sea; or *Zhongguo **Dong Hai***]

[10] China has also had spats over the Spratly and Paracel Island groups with this communist Southeast Asian nation. Its capital is Hanoi.

ANSWER: Socialist Republic of **Vietnam** [or *Cộng hòa Xã hội chủ nghĩa **Việt Nam***]

11. These vehicles appear as yellow blocks in *Broadway Boogie Woogie*. For 10 points each:

[10] Name these vehicles that transport people for fares.

ANSWER: **taxi** cabs [or **taxis**; accept obvious equivalents]

[10] This Dutch artist of *Broadway Boogie Woogie* created the *Composition in Red, Blue, and Yellow* and the tilted "lozenge" paintings. He was a member of De Stijl, an art movement whose members exclusively used the primary colors.

ANSWER: Piet **Mondrian**

[10] Another proponent of the De Stijl movement was Gerrit Rietveld, who designed a red and blue model of this furniture item. The Tulip one by Eero Saarinen became famous after its appearance on the *Enterprise* in *Star Trek*.

ANSWER: **chairs** [or Tulip **chair**]

12. In this war, the British conquered over half of the landmass of modern day France twice, only for it to be reconquered both times. For 10 points each:

[10] Name this conflict, divided into the Edwardian Era, the Caroline War and the Lancastrian Era. Joan of Arc and Edward the Black Prince fought in this war.

ANSWER: **Hundred Years' War** [or *guerre de Cent Ans*]

[10] The English won victories at the Battles of Crécy and Agincourt through the use of this long-range weapon, which was able to defeat large numbers of French knights.

ANSWER: English **longbow** [or Welsh **longbow**; prompt on "**bow**"]

[10] This French king, the first of the House of Valois, was wounded in action at Crécy. His accession to the throne of France had begun the Hundred Years' War.

ANSWER: **Philip VI** Valois [or ***Philippe VI***; or **Philip the Fortunate**; or ***Philippe le Fortuné***; prompt on "**Philip**"]

13. The wife of the title character may represent the author of this work. For 10 points each:

[10] Name this novel by Murasaki Shikibu, which details the adventures of the title "shining" prince, the illegitimate son of a Japanese emperor, who has an affair with the Empress Lady Fujitsubo among other adventures.

ANSWER: *The **Tale of Genji*** [or ***Genji Monogatari***]

[10] *The Tale of Genji* was written during this period of Japanese history, in which katakana and hiragana were developed and *The Pillow Book* was written by Sei Shonagon.

ANSWER: **Heian** period [or ***Heian jidai***]

[10] Genji apparently dies in a chapter with no text, whose title indicates that he has "vanished into" these entities.

ANSWER: **clouds** [accept "Vanished into the **Clouds**" or "***Kumogakure***"]

14. This tissue has skeletal, smooth, and cardiac varieties. For 10 points each:

[10] Name this contractile tissue whose basic unit is the sarcomere.

ANSWER: **muscle** tissue [or **muscular** tissue; accept obvious equivalents]

[10] Along with myosin, this protein is involved in muscle contraction. It forms the thin filament in myofibrils, and it has globular “G” and filamentous “F” forms.

ANSWER: **actin**

[10] This neurotransmitter is released at neuromuscular junctions to trigger skeletal muscle contraction. Its receptors have muscarinic and nicotinic varieties.

ANSWER: **acetylcholine** [or **ACh**; or **2-acetoxy-N,N,N-trimethylethanaminium**]

15. Name the following Jewish holidays, for 10 points each.

[10] This eight-day holiday begins on the twenty-fifth day of Kislev and includes the lighting of the shamash on the nine-branched Menorah. It commemorates the reclaiming of the Temple in Jerusalem during the Maccabean Revolt.

ANSWER: **Hanukkah** [or **Chanukah**; or **Festival of Lights**; or **Feast of Dedication**]

[10] This holiday is celebrated on the fourteenth day of Adar and commemorates an event in which Esther and Mordecai foiled Haman’s plot to kill the Jews.

ANSWER: **Purim** [or **Feast of Lots**]

[10] This seven-day holiday starts five days after Yom Kippur and concludes with the Hoshana Rabbah. Jews celebrate the huts inhabited by the Israelites during the Exodus by spending time in wooden booths.

ANSWER: **Sukkot** [or **Sukkos**; or **Feast of Tabernacles**]

16. The narrator of one poem laments that “the best laid schemes o’ [this animal] an’ Men... lea’e us nought but grief an’ pain.” For 10 points each:

[10] Name this animal, a “tim’rous beastie” whose “wee-bit housie” endures “bleak December’s winds” in a poem addressed “To [this animal].” That poem provided the title for a John Steinbeck novella.

ANSWER: **mouse** [or **mice**]

[10] This Scottish poet of “To a Mouse” compared his love for his “bonnie lass” to “A Red, Red Rose.” He also authored a ballad that is traditionally sung during New Year’s Eve, “Auld Lang Syne.”

ANSWER: Robert **Burns** [or Robbie **Burns**; or Rabbie **Burns**]

[10] This Robert Burns poem follows the title drunk farmer’s journey home on his horse Meg through the Ayrshire countryside and describes his vision of a witches’ and warlocks’ dance in Alloway Kirk.

ANSWER: “**Tam o’Shanter**”

17. A zero-sum one of these occurs when the gains of one competitor are negated by the losses of others. For 10 points each:

[10] Name these hypothetical situations created by a namesake study of decision making. In these constructs, exemplified by the prisoner’s dilemma, rational beings cooperate and compete with each other.

ANSWER: **games**

[10] In game theory, a dominant strategy for a player is one which is this type of response to all of his opponent’s strategies.

ANSWER: it is the **best** response to all the opponent’s strategies [accept any answer indicating that the dominant strategy has an optimal payoff for the player no matter which strategy his opponent chooses; do not accept an answer that is less specific]

[10] This equilibrium can be used to predict the outcome of a non-cooperative game. In this state, no player can benefit by changing his own strategy, assuming the other player’s strategy remains unchanged.

ANSWER: **Nash** equilibrium

18. These objects were introduced in the paper “How Long Is the Coast of Britain?” to explain why coastlines have non-integer Hausdorff dimension. For 10 points each:

[10] Name these geometric constructs that are both infinitely detailed and self-similar, an example of which is the Koch snowflake.

ANSWER: **fractals**

[10] This fractal, developed by the inventor of fractal geometry, is defined by the complex quadratic “ f -of- z equals z -squared plus c .” It plots values of c on the complex plane for which the iterates’ moduli are bounded.

ANSWER: **Mandelbrot set**

[10] This Polish mathematician names a fractal that removes an equilateral triangle from a larger triangle with each iteration. This man’s carpet is a two-dimensional analogue of the Cantor set.

ANSWER: Wacław Franciszek **Sierpiński**

19. *Brekekekèx-koàx-koáx!* That sound, made by the title creatures, greatly annoys Dionysus in this play while he is crossing Lake Acheron. For 10 points each:

[10] Name this play in which Dionysus descends to the underworld to bring Euripides back from the dead but instead brings back Aeschylus after Aeschylus gives him more practical advice on how to save Athens.

ANSWER: *The **Frogs*** [or ***Bátrachoi***]

[10] The title creatures of this other play are convinced to build Cloud Cuckoo Land, a perfect city in the clouds. At the end of the play, Pisthetaerus becomes king of the city, having usurped the power of the gods.

ANSWER: *The **Birds*** [or ***Ornithes***]

[10] *The Frogs* and *The Birds* were written by this ancient Greek comic playwright, who also wrote *The Clouds* and *The Wasps*.

ANSWER: **Aristophanes**

20. This man defined acids as substances that increase the concentration of hydrogen ions in solution. For 10 points each:

[10] Name this Swedish chemist and recipient of the 1903 Nobel Prize for Chemistry. His namesake equation relates the activation energy and temperature of a reaction to its rate constant.

ANSWER: Svante August **Arrhenius**

[10] This constant, symbolized A , is multiplied by e raised to the negative $E_{\text{sub-a}}$ over RT in the Arrhenius equation. This constant represents the frequency of collisions between reactant molecules.

ANSWER: **pre-exponential factor** [or **prefactor**; prompt on “collision **frequency factor**”]

[10] Arrhenius formulated a namesake greenhouse law, which states that a geometric increase in this acid results in an arithmetic increase in air temperature. This acid forms when carbon dioxide dissolves in water.

ANSWER: **carbonic** acid [or **H₂CO₃**]