

**2014 BELLum Omnium Contra Omnes****Packet 1: Tossups**

1. The change in a quantity describing this phenomenon is directly proportional to the square of an applied electric field in the Kerr effect. In anisotropic crystals, polarization of light into ordinary and extraordinary rays causes the double form of this process, also known as birefringence. One law describing this process sets the ratio of the sines of the angle of incidence and namesake angle equal to the ratio of two phase velocities. Dividing the speed of light in a vacuum by the speed of light in a substance yields its namesake index, which appears in Snell's Law. For 10 points, name this bending of light as it travels through a surface that separates two media.

ANSWER: **refraction**

2. In this film, one character describes the antagonist by saying, "One time she punched me in the face. It was awesome." In one scene in this movie, the principal tells a gym teacher to "step away from the underage girls" before Ms. Norbury forces the girls to make public apologies one by one, during which Damian shouts, "She doesn't even go here!" In this film, Damian and Janis plot the downfall of a group that includes Karen Smith, Gretchen Wieners, and the author of the Burn Book, Regina George. For 10 points, name this movie that follows Cady Heron's involvement with an elite high school clique called the Plastics, a 2004 film starring Lindsay Lohan.

ANSWER: **Mean Girls**

3. The Kalmar Union drove a group of people with this profession, the Victual Brothers, out of Gotland, and the Æi Invasion was a failed attack on a group of people of this profession on Tsushima Island. The death of Bartholomew Roberts marked the end of the "Golden Age" of this profession. The United States Marines invaded Barbary in response to the actions of people of this profession. Another person of this type sailed the *Queen Anne's Revenge*, and in the modern era, these people are particularly active off the coast of Somalia. For 10 points, give this term for extralegal sea raiders, examples of whom include William Kidd and Blackbeard.

ANSWER: **pirates** [accept **sea raiders** before mention; accept **mercenaries** until "Æi Invasion"; accept **privateers** until "Æi Invasion," prompt afterwards; accept other obvious equivalents]

4. Children are initiated into this religion by receiving the *sudreh* undershirt and *kusti* thread. Followers of this religion believe the *urvan* is united with the *fravashi* prior to birth, then reunited four days after death. Two four-eyed dogs guard this religion's Chinvat Bridge, where souls are judged after death. Due to its belief in the sacredness of the elements, this religion exposes corpses on the Towers of Silence. Followers must choose between *druj* and *asha*, and scripture in this religion includes the Vendidad and Gathas, both contained within the Avesta. For 10 points, name this dualistic Persian faith centered around the cosmic struggle between Angra Mainyu and Ahura Mazda.

ANSWER: **Zoroastrianism** [or **Mazdaism**; or **Magianism**]

5. Two potted plants lie under green blinds at the left of this painting, which depicts a church steeple rising above trees in the distant background. A white house in the center of this painting features an arched window with a patterned black curtain. A red barn is visible behind the left shoulder of one of this painting's subjects. That man wears glasses and overalls, and the woman standing next to him in this painting wears a colonial print apron. Dr. Byron McKeeby and Nan, the artist's dentist and sister, served as models for this work. For 10 points, name this painting depicting a farmer holding a pitchfork and his daughter, a work of Grant Wood.

ANSWER: **American Gothic**

6. Clairaut's theorem states that one form of this operation is commutative, and taking the dot product of a unit vector and a function's gradient yields the directional type of this operation. This operation can be applied on a quotient to evaluate limits with indeterminate forms in L'Hôpital's rule. On any interval, there is at least one point where this operation is equal to the average slope of a function over that interval, according to the mean-value theorem. Performing this operation on a composition of functions requires the chain rule. For 10 points, name this operation from calculus that finds a function's instantaneous rate of change, the inverse of integration.

ANSWER: **differentiation** [accept word forms; or taking the **derivative**; accept partial **differentiation** or taking a partial **derivative** until "quotient"]

7. Four collections of Clavier-Übung by this composer were published during his lifetime, the second of which included his *Italian Concerto* and *French Overture*. This composer included his own name as the motif of his unfinished *Contrapunctus XIV* (“fourteen”), which concludes his last work. This composer also composed a work in which every third piece is a canon, and each piece is based on a sarabande “aria.” Charles Gounod composed the vocal line of his *Ave Maria* above a melody written by this composer, taken from a collection of alternating preludes and fugues in every key. For 10 points, name this German composer of *The Art of the Fugue* and *The Well-Tempered Klavier*.

ANSWER: Johann Sebastian Bach [prompt on partial answer; do not accept “Johann Christoph Bach” or “Johann Ambrosius Bach” or any other name ending or not ending with “Bach”]

8. This element sometimes exists in a gamma phase allotrope known as austenite. The pigment Prussian blue ideally contains seven ions of this element complexed with eighteen cyanide ions. The mineral magnetite is an oxide of this element, and impure forms of this element undergo the Bessemer process to form an alloy of this metal and carbon. The mineral siderite is this element’s carbonate, and a main source of this metal for its large-scale production comes from hematite. In humans, atoms of this element complex with the proteins myoglobin and hemoglobin. For 10 points, name this element, a metal that forms steel with carbon and whose other oxide is rust.

ANSWER: iron [or Fe; accept ferrum]

9. One goddess of these locations was banished and later killed by her sister for causing a fire, although her spirit escaped and she was deified. In Shinto mythology, eight of these features formed at the end of creation and the beginning of death, when Izanagi dismembered Kagu-tsuchi. In Hawaiian mythology, these locations are governed by Pele. In Greek mythology, Zeus throws one of these geographic features on Typhon to trap him, and Hephaestus’ forges are located under them. For 10 points, name these geographic features, examples of which include Mauna Kea, Mount Fuji and Mount Etna, that sometimes erupt magma.

ANSWER: volcanoes [prompt on “mountains”]

10. Eugène Viollet-le-Duc suggested a design for this structure that would support it with sand-filled compartments. This structure was originally intended to be a lighthouse on the Suez Canal, and the idea for it was proposed by Édouard de Laboulaye. Broken chains lie on this structure’s pedestal, over which the subject’s right foot is raised. The face of this statue was displayed at the 1878 Paris World’s Fair, and the torch was displayed at the Centennial Exposition. It was the first sight of immigrants entering the United States from the Atlantic. For 10 points, name this structure designed by Frédéric Bartholdi, the “New Colossus” in New York Harbor.

ANSWER: Statue of Liberty [or Liberty Enlightening the World; or *La Liberté éclairant le monde*]

11. A Schatzki ring is the narrowing of the lower part of this organ. Bleeding occurs in tears in the lower epithelium of this organ in Mallory-Weiss syndrome. Redifferentiation of cells in the lower end of this organ is caused by Barrett’s disease. GERD occurs when this organ is exposed to increasingly acidic conditions. The cardiac sphincter separates this organ from the stomach, and failure of that sphincter to close properly may lead to the reflux of acid into this organ. This organ’s muscles move in a wavelike motion called peristalsis to transport boluses down to the stomach. For 10 points, name this tube-like organ that transfers food from the mouth to the stomach.

ANSWER: esophagus [or gullet]

12. This work asserts that civil law is superior to religious law because one cannot know whether God’s vision as received by someone else is true. According to this work, there are only three types of government, and all other forms are just alternate names for those three: aristocracy, democracy and monarchy. The last section of this work explains that misinterpretation of Scripture causes the “Kingdom of Darkness.” This work describes the state of nature as a war of all against all and describes life as “nasty, brutish and short.” For 10 points, name this philosophical work defending the absolute monarchy written during the English Civil War by Thomas Hobbes.

ANSWER: Leviathan, or *The Matter, Forme and Power of a Common Wealth Ecclesiasticall and Civil*

13. In this country, Lord Robens and the National Coal Board were criticized for their inadequate response to the collapse of mining debris in the Aberfan disaster. At the beginning of the Industrial Revolution, the Royal Navy primarily used coal from the southern region of this country. Owain Glyndŵr (“OH-wen glin-DUR”) led a revolt in this country, which was the native country of the House of Tudor and David Lloyd George. This country’s medieval Kingdom of Gwynedd was defeated by Edward I, whose son was the first heir to the English throne to be called “Prince of” this region. For 10 points, name this country with capital at Cardiff, which forms Great Britain with England and Scotland.

ANSWER: **Wales** [or **Cymru**; prompt on “Great **Britain**”; prompt on the “**United Kingdom** of Great Britain and Northern Ireland”]

14. In one of this author’s plays, a young girl commits suicide in an attic where the title creature lives. In another of his plays, Oswald is driven insane by the syphilis he inherited from his father and falls in love with his half-sister Regina. In addition to describing the Ekdal and Alving families in *The Wild Duck* and *Ghosts*, this author wrote of a town shunning Doctor Stockmann after he discovers tainted water in their baths. In another play by this author, Krogstad blackmails another character about a borrowed loan, leading Nora to abandon Torvald Helmer. For 10 points, name this Norwegian playwright of *An Enemy of the People* and *A Doll’s House*.

ANSWER: Henrik Johan **Ibsen**

15. This man threatened to invade Greece after the death of a League of Nations officer surveying the Albanian border during the Corfu Affair. This man’s political party came to power as a result of the Acerbo Law, and he was deposed on 25 Luglio through a vote of no confidence proposed by Dino Grandi. After Otto Skorzeny helped this man escape imprisonment at Gran Sasso, this man became the head-of-state of the Republic of Salò. On behalf of his man, Gian Galeazzo Ciano signed the Pact of Steel. This man seized power after he led his Blackshirts during his March on Rome. For 10 points, name this fascist dictator of Italy nicknamed *Il Duce*.

ANSWER: Benito Amilcare Andrea **Mussolini**

16. One character in this novel is renamed Isaac after converting to Christianity and is sent to a teachers’ college in Umuru. In this novel, Ekwefi follows Chielo after Chielo tells her that Agbala wants to see her daughter, Ezinma. The protagonist’s gun explodes during Ezeuda’s funeral, and he is exiled to Mbanta. After a feast of the locust swarm, the protagonist kills his adopted son, Ikemefuna. This novel ends with Obierika asking the District Commissioner to cut down the protagonist’s body after he had hanged himself after killing a messenger sent to break up a town meeting. For 10 points, name this novel by Chinua Achebe following Okonkwo and his village during British colonization.

ANSWER: ***Things Fall Apart***

17. This event was timed to coincide with Harry Hawk’s words, “you sockdologizing old mantrap.” After this event, Lewis Powell was caught hiding in the house of Mary Surratt. The perpetrator of this event hid in Zekiah Swamp before he went to the house of Richard Garrett, where he was later shot by Boston Corbett. This event interrupted a production of *Our American Cousin*, and its perpetrator may have said either “*sic semper tyrannis*” or “The South is avenged.” For 10 points, name this event five days after the end of the American Civil War, during which John Wilkes Booth shot the sixteenth president of the United States in Ford’s Theater.

ANSWER: **assassination of Abraham Lincoln** [accept obvious equivalents]

18. Rudyard Kipling wrote a sequel to this poem about the title group’s visit to the author asking him to write another poem in their honor. This poem uses a phrase paralleling a verse in Psalm 23. In this poem, “All the world wondered” as “Cossack and Russian / Reeled from the saber stroke,” leading the author to ask, “When can their glory fade?” According to this poem, it was “theirs not to make reply, / theirs not to reason why, / theirs but to do and die.” The title event of this poem took place during the Battle of Balaclava. For 10 points, name this 1854 poem by Alfred, Lord Tennyson, about “the six hundred” cavalrymen riding “into the Valley of Death.”

ANSWER: “The **Charge of the Light Brigade**”

19. Lysander Spooner argued that this right was the only security against the injustices of slavery. George Tucker criticized the English Bill of Rights for restricting this right to wealthy Protestants to prevent “the destruction of game.” The Supreme Court incorporated this right against the states in *McDonald v. Chicago*, and this right was previously incorporated against federal enclaves in the 2008 case *DC v. Heller*. The amendment protecting this right in the United States asserts the necessity of “a well regulated militia.” For 10 points, name this right protected by the Second Amendment of the United States Constitution, often exercised in self-defense.

ANSWER: **right to keep and bear arms** [accept **Second Amendment rights** or obvious equivalents before “Second Amendment”; accept other obvious equivalents; prompt on “right to **self-defense**” until mentioned]

20. This man described the events leading up to Julius Caesar’s assassination in his epistolary novel *The Ides of March*. This author created a character who settles down in Newport, Rhode Island, after going there to buy a car in the novel *Theophilus North*. In another work, Brother Juniper witnesses the deaths of five people as the title structure collapses in Peru. Another play by this author of *The Bridge of San Luis Rey* follows the maid Sabina and the Antrobus family, and in a different play, this writer depicted George Gibbs and Emily Webb in Grover’s Corners. For 10 points, name this American writer who created plays such as *The Skin of Our Teeth* and *Our Town*.

ANSWER: Thornton **Wilder**

TB. In a drunken accident, this man killed Cleitus the Black, who had previously saved this man at the Battle of the Granicus. At the Battle of the Hydaspes, this man held enemy troops in place using a military formation developed by his father and executed the hammer-and-anvil technique using his “companion cavalry.” This man was advised by Parmenion, and he left his home region under the regency of Antipater during his conquests. This man captured and executed Bessus after the Battle of Gaugamela for assassinating Darius III. After his death in Babylon, his empire was divided among the Diadochi. For 10 points, name this Macedonian ruler who conquered the Persian Empire.

ANSWER: **Alexander the Great** [or **Alexander III** of Macedon; or *Alexándros ho Mégas*]

**Packet 1: Bonuses**

1. Name some of the Canterbury Tales, for 10 points each.

[10] Arcita and Palamon compete for Emily's hand in marriage in this first tale, with Arcita winning the tournament but Palamon winning her hand in marriage because of Arcita's death soon afterwards.

ANSWER: **Knight's Tale**

[10] In this tale John and Aleyne take revenge on a deceptive miller and end up in bed with his wife and daughter, respectively. This tale is a response to the Miller's Tale, which makes fun of this storyteller's occupation.

ANSWER: **Reeve's Tale**

[10] In this tale, a knight must find "the thing that women most desire." He receives the answer from an old woman whom he must later marry, after which she becomes a young and faithful wife.

ANSWER: **Wife of Bath's Tale**

2. The poisonous blood of this creature later killed Geryon, Nessus and Chiron. For 10 points each:

[10] Name this multi-headed creature killed by Heracles for his second Labor. Its breath was toxic, and when each head was cut off, two more grew back in its place until Heracles had his nephew Iolaus burn the stumps.

ANSWER: Lernaean **Hydra** [or *Lernaia Hydra*]

[10] Two Labors were added to Heracles' original ten because Heracles cleaned the stables of this king with the help of the rivers Alpheus and Peneus, rather than by himself.

ANSWER: **Augeas**

[10] During his last Labor, Heracles brought back this other hero, who had been trapped in a chair in the underworld for accompanying Pirithous to woo Persephone.

ANSWER: **Theseus**

3. Romeo and Juliet were not the only star-crossed lovers. For 10 points each:

[10] These two Babylonian lovers can only talk to each other through a crack in the wall. They appear in Ovid's *Metamorphoses*, and Bottom hilariously butchers a play version of their story in *A Midsummer Night's Dream*.

ANSWER: **Pyramus** and **Thisbe** [accept names in either order]

[10] These lovers in Arthurian legend fall in love as the man is bringing back the woman for his uncle King Mark, who later kills him after discovering their affair. Their story was adapted into an opera by Wagner.

ANSWER: **Tristan** and **Iseult** [or *Tristan und Isolde*; or **Drustanus** or **Tristram** instead of Tristan; accept names in either order]

[10] Arthurian legend also features an affair between Queen Guinevere and this Knight of the Round Table. King Arthur reluctantly banishes this man for the affair, and he becomes a monk after Arthur's death.

ANSWER: **Lancelot du Lac**

4. Name these Apostles of Jesus, for 10 points each.

[10] This Apostle was crucified upside-down in Nero's Circus after seeing a vision of Jesus telling him to return to Rome. He is considered by Catholics to be the first Pope, and is buried underneath the altar of his namesake Basilica.

ANSWER: Simon **Peter** [prompt on "**Kephas**"]

[10] This Apostle is the only one not to have been martyred, but was exiled to the island of Patmos, where he had mystic visions and recorded them in the Book of Revelation.

ANSWER: **John** the Apostle [or **John** of Patmos; or **John** the Evangelist]

[10] This Apostle was martyred in India, where he is said to have founded the Syro-Malabar Church. His name means "twin" and he was also known as Didymus.

ANSWER: **Thomas** the Apostle [or Doubting **Thomas**]

5. The introductory poem to this novel was part of a volume of twenty-one ballades of history written by Yang Shen. For 10 points each:

[10] Name this novel with characters such as Liu Bei, Cao Cao (“tsao TSAO”) and Sun Quan (“CHUEN”), set during the end of the Han Dynasty and the period right after.

ANSWER: ***Romance of the Three Kingdoms*** [or ***Sanguo yanyi***; do not accept “Records of the Three Kingdoms” or “Sanguozhi”]

[10] *Romance of the Three Kingdoms* was written during the Ming Dynasty of this country, which also produced *Journey to the West* and *Dream of the Red Chamber*.

ANSWER: **China** [or **Zhongguo**; do not accept “People’s Republic of China” or “Zhonghua Renmin Gongheguo” or “Republic of China” or “Zhonghua Minguo”]

[10] The characters of this other Ming Dynasty novel rebel against the Song government and, after being granted amnesty, are sent to put down the Fang La rebellion in the south, during which most of them die in battle.

ANSWER: ***Water Margin*** [or *Zhongyi Shuihu Zhuan*; accept any of ***Outlaws of the Marsh***, ***All Men are Brothers***, ***Tale of the Marshes***, ***Men of the Marshes***, ***The Marshes of Mount Liang***]

6. This twelve-panel work in St. Bavo’s Cathedral was commissioned by the Vijdt family. For 10 points each:

[10] Name this triptych featuring an image of Christ crowned with a Papal Tiara and the Lamb of God being blessed with incense.

ANSWER: **Ghent Altarpiece** [or ***Adoration of the Mystic Lamb***; or ***Het Lam Gods***; or **Lamb of God**]

[10] This painter of the Ghent Altarpiece worked on it with his lesser known brother, Hubert, and was employed by Philip the Good, Duke of Burgundy. He also painted a portrait of a man, likely himself, wearing a large red turban.

ANSWER: Jan **van Eyck** [or Johannes **de Eyck**]

[10] In this van Eyck painting, a round mirror in the background reflects the artist himself. In the foreground, a woman in a green dress and a man in a large black hat hold hands while a small dog stands near their feet.

ANSWER: ***The Arnolfini Wedding*** [or ***The Arnolfini Wedding Portrait***; or ***The Arnolfini Double Portrait***; or ***The Arnolfini Marriage***; or ***Portrait of Giovanni Arnolfini and his Wife***; accept other answers indicating Giovanni **Arnolfini** and wife; prompt on answers that only mention “Giovanni **Arnolfini**”]

7. Various episodes described in this work include throwing “potato salad at CCNY lecturers on Dadaism.” For 10 points each:

[10] Name this Beat Generation poem, written with long lines to reflect the rhythm of his friends’ voices. It invokes the Ammonite god Moloch in the second section.

ANSWER: “**Howl**”

[10] This Beat Generation poet of “Howl” wrote of an encounter with Walt Whitman and Garcia Lorca in “A Supermarket in California” and dedicated the eulogy “Kaddish” to his mother, Naomi.

ANSWER: Irwin Allen **Ginsberg**

[10] Ginsberg described the world and various objects and concepts with this adjective in a later footnote to “Howl.” The first line of the “Footnote to Howl” is this word repeated fifteen times.

ANSWER: “**holy**”

8. This president refused to sign the Texas Seed Bill, which would have given money to farmers in drought-stricken areas. For 10 points each:

[10] Name this Gilded Age president, who also levied a two-percent tax on income over four thousand dollars as part of the Wilson-Gorman Tariff.

ANSWER: Stephen Grover **Cleveland**

[10] This Ohio Republican won the election of 1888 and served between Cleveland’s two nonconsecutive terms. The Wounded Knee massacre occurred under this president, who passed the Sherman Antitrust Act.

ANSWER: **Benjamin Harrison** [prompt on “**Harrison**”]

[10] During Harrison’s presidency, the 51st United States Congress was the first to spend this much money in the federal budget. Under J.P. Morgan, United States Steel became the first corporation valued at this much money.

ANSWER: a **billion dollars** [accept **Billion Dollar** Congress]

9. This quantity is the time derivative of angular momentum. For 10 points each:

[10] Name this rotational analogue of force, which is calculated by taking the cross product of the lever-arm distance and applied force.

ANSWER: **torque** [prompt on “**moment** of force”; prompt on “**tau**”]

[10] This is the periodic change in the position of the rotational axis of an object. It may come in torque-induced and torque-free varieties.

ANSWER: **precession**

[10] This device contains a rotor surrounded by one or more gimbals. When the inner rotor is spun, conservation of angular momentum causes it to maintain its orientation regardless of how the surrounding frame moves.

ANSWER: **gyroscopes**

10. This man claimed legitimacy to rule a Third Rome through his marriage to the niece of Constantine XI Palaiologos. For 10 points each:

[10] Name this Russian ruler who “gathered all of Rus” by annexing other states such as the Novgorod Republic and the Grand Duchy of Tver. He also turned back the Tatars at the great stand on the Ugra River.

ANSWER: **Ivan III** Vasilyevich [or **Ivan the Great**; prompt on “Ivan”]

[10] Ivan III was the leader of this Russian polity that emerged after the dissolution of Kievan Rus’ by the Mongol conquest. Its namesake city remained the capital of the Tsardom of Russia established during the reign of Ivan’s grandson.

ANSWER: Grand Duchy of **Moscow** [or **Muscovy**; or Grand Principality of **Moscow**; or *Velikoye Knyazhestvo **Maskovskoye***]

[10] Ivan III’s Rurik dynasty lost power in Russia during the Time of Troubles, after which it was succeeded by this royal house that remained in power in Russia until they were overthrown in the 1917 February Revolution.

ANSWER: House of **Romanov** [accept House of Holstein-Gottorp-**Romanov**]

11. For 10 points each, name these Renaissance sculptors.

[10] This sculptor crafted the sarcophagi of Lorenzo and Giuliano de Medici. He also sculpted the statue of Moses for the tomb of Pope Julius II and the *Pieta* in St. Peter’s Basilica in Rome.

ANSWER: **Michelangelo** di Lodovico **Buonarroti** Simoni [accept either underlined name]

[10] This Renaissance artist cast a bronze statue of St. John the Baptist for the Orsanmichele and crafted the Golden Doors of Paradise in the Baptistry, both in Florence. He was also famous for his rivalry with Brunelleschi.

ANSWER: Lorenzo **Ghiberti** [or Lorenzo **di Bartolo**]

[10] This Renaissance artist created the equestrian statue of Bartolomeo Colleoni in Venice. He crafted a statue St. Thomas for the Orsanmichele and taught Leonardo da Vinci, who painted an angel for this artist’s *Baptism of Christ*.

ANSWER: Andrea del **Verrocchio** [or Andrea di Michele di Francesco **de’ Cioni**]

12. The structure that names this battle spans the Tiber, in which the loser of this battle drowned. For 10 points each:

[10] Name this battle before which the victor received a vision of the Chi Rho and the words “In this sign, [you shall] conquer.” The victor of this battle defeated Maxentius to become sole ruler of the western half of the Roman Empire.

ANSWER: Battle of the **Milvian Bridge**

[10] This victor at Milvian Bridge later issued the Edict of Milan with Licinius, ending the persecution of Christians in the Roman Empire.

ANSWER: **Constantine I** [or **Constantine the Great**; or Flavius Valerius Aurelius **Constantinus** Augustus **I**; or **Saint Constantine**]

[10] The Battle of the Milvian Bridge ended a period when the Roman Empire was governed by this many people, a system implemented by Diocletian.

ANSWER: **four**

13. A series of experiments studying this concept found that it decreases with decreased immediacy to the authority. For 10 points each:

[10] Name this concept studied in those experiments inspired by the trial of Nazi war criminal Adolf Eichmann. In those experiments, “teachers” were told to give shocks of increasing intensity to “learners” who failed to learn word pairs.

ANSWER: **obedience** to authority figures

[10] In this other experiment, the formulator of the experiment on obedience to authority tracked letters as they traveled through the social network from the Midwest to a certain person in Sharon, Massachusetts.

ANSWER: **small-world** experiment [prompt on “six **degrees of separation**”]

[10] The small-world experiment and the experiment on obedience to authority were conducted by this American social psychologist.

ANSWER: Stanley **Milgram**

14. The first of these conflicts was sparked when Lin Zexu (“zeh-SHU”) burned British supplies of the namesake commodity in Canton. For 10 points each:

[10] Name these mid-nineteenth century conflicts fought over European smuggling of illegal goods into China, especially the namesake drug, of which Afghanistan is now the largest producer.

ANSWER: **Opium Wars** [or **Anglo-Chinese Wars**, or **Yapian Zhanzhen**, or **Yingzhong Zhanzhen**]

[10] The treaty ending the First Opium War was signed in this city. It was later the capital of the Kuomintang regime before and after the Second Sino-Japanese War.

ANSWER: **Nanjing** [or **Nanking**]

[10] The Opium Wars occurred during the reigns of this Chinese dynasty’s Daoguang and Xianfeng Emperors. This Manchu dynasty ended with the abdication of Puyi in the Xinhai Revolution.

ANSWER: **Qing** Dynasty [or Empire of the Great **Qing**; or **Qing Chao**; or *Da Qing guo*; or *Da Qing diguo*; or *Zhonghua Da Qing guo*; or *Daicing gurun*]

15. This protein, also referred to as ptyalin (“TIE-uh-lin”), catalyses the hydrolysis of alpha(1,4) glycosidic linkages. For 10 points each:

[10] Name this protein found in saliva that breaks down starch and glycogen to yield glucose and maltose. Its optimal pH range is between 5.6 and 6.9, and it is inactivated by the stomach’s acidic conditions.

ANSWER: salivary **amylase** [or alpha-**amylase**]

[10] This organ is innervated by the lingual and facial nerves and contains the hyoglossus and styloglossus muscles. It is also known for its taste buds.

ANSWER: **tongue**

[10] This particular salivary gland wraps around the ramus of the mandible and secretes saliva through the stensen duct. These glands become painfully swollen in cases of mumps.

ANSWER: **parotid** glands

16. Name the following rivers that flow through European capital cities, for 10 points each.

[10] This river flows through Paris, dividing it into the Left Bank and the Right Bank. In the middle of this river lies the Île de la Cité, on which the Cathedral of Notre Dame is located.

ANSWER: **Seine** River [or *La Seine*]

[10] This longest River on the Iberian Peninsula flows through Aranjuez, Toledo, and Lisbon before emptying into the Atlantic Ocean.

ANSWER: **Tagus** River [or *Rio Tejo*; or *Río Tajo*]

[10] Beginning near the Czech border in the Lusatian highlands, this river ends at a confluence with the Havel. Many people drowned when trying to use this river to escape East Berlin into West Berlin.

ANSWER: **Spre**e River [or *Sprjewja*; or *Spréva*]

17. These substances often consist of a weak acid and its conjugate base. For 10 points each:

[10] Name this class of substances that resists changes in pH. Norman Good created criteria for these substances, an example of which is the bicarbonate system in human blood.

ANSWER: **buffers** [or **buffer** solutions]

[10] This equation is derived from the definition of the acid dissociation constant. It defines the pH of a system as the pKa plus the logarithm of the concentration of the conjugate base over that of the conjugate acid.

ANSWER: **Henderson-Hasselbalch** equation

[10] During a titration, this marks the point at which the titrant is stoichiometrically equal to the acid or base being titrated. If an acid is polyprotic, a titration curve may have more than one of these.

ANSWER: acid-base **equivalence** point [prompt on "**stoichiometric** point"]

18. DISCLAIMER: The writers of this question do not endorse the theories presented in this novel. For 10 points each:

[10] Name this novel, written by Dan Brown, details the journey of a Harvard Professor of religious symbology and a French police cryptologist in solving the murder of the curator of the Louvre.

ANSWER: *The **Da Vinci Code***

[10] This religious figure was supposedly pregnant with Jesus' child at the crucifixion. She then fled to Marseilles and give birth to a daughter, Sarah, the ancestor of the Merovingian kings of France.

ANSWER: **Mary Magdalene** [or **Mary of Magdala**; prompt on "**Mary**"]

[10] Jacques Saunière, the murdered curator, was head of this secret order. In the 1950s, Pierre Plantard constructed a detailed history of this order, claiming that its previous Grand Masters included Leonardo da Vinci and Isaac Newton.

ANSWER: **Priory of Sion** [or ***Prieuré de Sion***]

19. This piece opens with solo flute playing B–G sharp–F sharp–E–F sharp–G sharp, a motif immediately quoted by the oboe. For 10 points each:

[10] Name this first of four movements in the suite it appears, meant to depict the rising sun of a Moroccan desert.

ANSWER: "**Morning Mood**" [or "***Morgenstemning***"]

[10] "Morning Mood" begins this suite, incidental music for a play by Henrik Ibsen. Its title character escapes the Hall of the Mountain King in a movement that opens with the low strings playing pizzicato.

ANSWER: ***Peer Gynt*** Suite No. 1

[10] This Norwegian composer of *Peer Gynt* transcribed his *Holberg Suite* for string orchestra. "Arietta," "To Spring," and "Wedding Day at Trolldhaugen" are among his sixty-six *Lyrical Pieces*.

ANSWER: Edvard Hagerup **Grieg**

20. Name some types of clouds, for 10 points each.

[10] This type of cloud formation is characterized by thin, wispy strands of ice crystals. They are generally the highest clouds in the atmosphere.

ANSWER: **cirrus** clouds

[10] This type of dense cloud is formed from water vapor carried by upward air currents. These clouds grow vertically instead of horizontally and are associated with thunderstorms and atmospheric instability.

ANSWER: **cumulonimbus** clouds

[10] Because of its high concentration of precipitation particles, this type of cloud's saturated air is heavier than the surrounding air and sinks back towards the earth, creating characteristic pouch-like sacs as its air cools.

ANSWER: **mammatus** clouds [or **mammato-cumulus** clouds]