Tossups

1. **One character in this novel attempts to collect a thousand-dollar reward from the New Hampshire relatives of a slain woman by accusing his former bootlegging partner of the murder. This novel's protagonist shacks up with waitress Bobbie Allen after beating his foster father, Mr. McEachern, with a chair. This novel ends with Byron Bunch and Lena Grove searching for Joe Brown, whose real name is (*)** Lucas Burch. Another character in this novel, who was given up for adoption on the holiday that was made his last name, slits Joanna Burden's throat in Jefferson, Mississippi. For 10 points, name this William Faulkner novel in which Joe Christmas appears.
ANSWER: _**Light in August**_

2. **One lecture by this man chastises science for only studying what is instead of what is _not_. That lecture also examines the feeling of dread and "deepest boredom" that humans encounter when they contemplate the nothing. Another work by this philosopher claims its goal is to "destroy the history of ontology". That book by this man distinguishes between the states of "present-at-hand" and "ready-to-hand". This author of "What is Metaphysics?" describes a character who consists of existence, (*)** thrownness, and fallenness in a book that contemplates the meaning of _Angst_. That book by this man equates the two title concepts for the "being for whom being is the question", the _Dasein_. For 10 points, name this German philosopher, a student of Edmund Husserl who wrote _Being and Time_.
ANSWER: Martin **Heidegger**

3. **A _Rolling Stone_ interview revealed that this song's primary inspiration was the Left Banke's song "Walk Away Renee". In its third verse, the singer explains that when he's "tired and thinking cold", he hides in his music and forgets the day, while its second verse describes how people's "faces fade as the years go by". This song opens with the line "I looked out this (*)** morning and the sun was gone". This song was the first single from an album that also produced the singles "Peace of Mind" and "Foreplay/Long Time". According to its chorus, the singer begins dreaming until "I see my Marianne walkin' away" after experiencing the title condition "when I hear that old song they used to play". For 10 points, name this debut single by Boston.
ANSWER: "**More Than a Feeling**"

4. **This compound is transmitted in the tubero-infundibular pathway from the hypothalamus to the pituitary gland. This compound is produced by cells in the ventral tegmental area and this compound downregulates latrotropic cells. Prolactin acts as an antagonist to this hormone after sexual gratification. Triple Reuptake Inhibitors like (*)** cocaine inhibit reuptake of norepinephrine, serotonin and this compound, which is produced by the melanin-containing cells of the substantia nigra. This neurotransmitter is a direct precursor to norepinephrine and epinephrine. This compound is deficient in patients with Parkinson's disease. For 10 points, name this neurotransmitter implicated in reward-based learning, whose precursor is L-Dopa.
ANSWER: **dopamine**

5. **This man was effectively adopted as a son by Sisygambis, the mother of one of his defeated enemies. While being burned alive, Calanus mysteriously told this him "We shall meet in Babylon," and this man indeed died in Babylon. His life was chronicled by Callisthenes and he was devastated after the death of Hephaestion, his second in command. This leader built a causeway to allow the siege of the island city of (*)** Tyre. This man's troops refused to cross the Beas River some time after defeating King Porus at the bloody Battle of the Hydaspes River. His heirs were known as the Diadochi. This victor at Issus and Gaugamela died after an aborted invasion of India. For 10 points, name this Macedonian who conquered the Persians before dying at age thirty two.
ANSWER: **Alexander the Great** [accept **Alexander III**]

6. **This man willed one of his paintings to the National Gallery on the condition that it be hung next to Claude Lorraine's *Embarkation with the Queen of Sheba*; that painting depicts the tomb of Sychaeus on the right while an armored Aeneas faces away from the title character. This man names a prize given to such artists as Chris Ofili that is annually protested by the Stuckists. Another painting by this artist of *Dido Building Carthage* is dominated by a black (*)** cloud curling around the sun and depicts the Salassians fighting a rearguard action while the title figure's elephants move into the distance. Another of his paintings depicts a small boat to the left of the Maidenhead Bridge, on which a rabbit is outpacing a black train. For 10 points, identify this British landscapist who painted *Snow Storm: Hannibal and his Army Crossing the Alps* and *Rain, Steam, and Speed*.
ANSWER: Joseph Mallord William **Turner**

7. **In systems which exhibit this phenomenon, one quantity is given by 2 pi times this phenomenon's namesake frequency times the energy stored divided by power lost. That quantity is the Q factor. Microwaves are used to excite electrons in an external magnetic field from lower- to higher-energy spin states in a form of spectroscopy called electron spin *this*. In an LC circuit, a quantity named for this phenomenon is given by 1 over the square root of inductance times capacitance. Ganymede, Europa and Io participate in a 1:2:4 form of the (*)** orbital version of this phenomenon. A form of this phenomenon induced by vortex shedding is often erroneously implicated in the collapse of the Tacoma Narrows Bridge. For 10 points, name this phenomenon in which the amplitude of an oscillating system is maximized at its namesake frequency.
ANSWER: **resonance**

8. **An exponential function measuring this concept incorporates risk aversion and underlies entropic risk measures. Daniel Bernoulli's investigations of the St. Petersburg paradox gave rise to a hypothesis about a form of this concept that was later explained by the axioms of completeness, transitivity, independence, and continuity in a theory named for von Neumann and Morgenstern. Kahneman and Tversky's prospect theory is an alternative to the (*)** "expected" hypothesis of this concept. It is held constant along an indifference curve. For 10 points, name this economics concept that measures preference for goods and services, which diminishes marginally.
ANSWER: marginal **utility** [or expected **utility**]

9. **This state was where Marshall Twitchell was slain in the Coushatta massacre. A governor from this state ran his political machine from a mental hospital and was nicknamed "Uncle Earl." Another politician from here opposed Judge Benjamin Pavy and was killed by Pavy's son-in-law, Dr. Carl Weiss. The case which established the "separate but equal" principle**, (*) *Plessy v. Ferguson*, originated from this state. One of its governors created the 1934 "Share Our Wealth" program and proclaimed "Every Man a King." A mayor from this state, Ray Nagin, was criticized for referring to his city as a "Chocolate City." For 10 points, name this state once governed by Huey Long which was especially devastated when Hurricane Katrina hit New Orleans.
ANSWER: **Louisiana**

10. **The first of these works, which was meant to accompany its composer's *Midnight Procession*, is based on a story found in the work of Nikolai Lenau. The fourth of these works, which was left incomplete, was not published until 1955. The second of these works symbolizes the title character with a B-F tritone. The composer's *Bagatelle without Tonality* was marked as a member of this group of compositions, which are four in number and accompanied by a similarly titled (*)** polka. The first of these pieces is titled "The Dance at the Village Inn" and contains diabolically syncopated violin passages. For 10 points, name this series of dances titled after the Faustian devil and composed by Franz Liszt.
ANSWER: _Mephisto Waltz_es

11. **This character takes an apartment at the Ivolgin alongside a secretary named Ganya, who is promised $75,000 rubles by Totsky if he marries a woman who later throws $100,000 in a fireplace. During an impassioned speech about religion and aristocracy, this character breaks an expensive Chinese vase. This character, who begins the novel in which he appears riding the train from a Swiss (*)** sanatorium, calls on the Epanchins. This man, who loves Aglaya, has a friend named Rogozhin who kills Natasya Filipovna. For 10 points, name this epileptic title character of a Fyodor Dostoevsky novel, whose real name is Prince Myshkin.
ANSWER: The **Idiot** [accept Prince Lev Nikolayovich **Myshkin** before "Myshkin"]

12. **The Thabal Chongba dance is performed during this holiday. The Ganga-mela occurs during this holiday, which occurs during the month of Falgun. In some places, offerings of delicious Puran Poli are made to Agni during this holiday. Effigies of Hiranya-kashipu's (*)** sister are burned during this holiday, and celebrations related to this holiday can take place on Rangapanchami, which occurs five days after this holiday. This holiday celebrates the triumph of Prahlada over his father, who had demanded that everyone pray to him instead of the gods, and it typically occurs in March on the solar calendar. For 10 points, celebrants throw colored powders at one another during what Hindu spring festival?
ANSWER: **Holi** [or **Phagwah**; or **Festival of Colors**; or **Doḷajatra**; or **Basantotsav**]

13. **These compounds are the reactants of the reaction whose mechanism was determined by Yves Chauvin. A reaction of these compounds that proceeds via a metallocyclobutane is catalyzed by a compound named for Grubbs. Alcohols can be made by the alcoxymercuration-demercuration of these compounds, and the reduction of these compounds is governed by (*)** Markovnikov's rules. When these compounds are generated in Hoffman eliminations, the loss of the beta hydrogen occurs at the least substituted carbon, which is contradictory to Zaitsev's rule. The rearrangement of these molecules is called their "metathesis," and they are sometimes called olefins. For 10 points, name these compounds that have carbon-carbon double bonds.
ANSWER: **alkene**s [accept **olefin**s until mentioned]

14. **One of these figures fathered Alcmaeon's wife Callirhoe and, according to Ovid, transformed five forgetful nymphs into the Echinades islands. Another of these figures fathered the Pheraean Orsilochus and fell in love with Arethousa. Another of them fathered Glaucia and the Cretan king Teucer and thrice attacked Achilles during the Trojan War. Their chief was a suitor for the hand of Deianeira who turned into a bull and had his horn twisted off by Heracles. One of these figures was the first immortal to assist Zeus during the Titanomachy and is the (*)** deification of an entity on which gods swore unbreakable oaths. Their number includes the aforementioned Alpheus, Scamander, and Achelous, as well as Cocytus and Acheron. For 10 points, name these figures from Greek myth who represented certain geological features, the most famous of which is Styx.
ANSWER: **river** deities/gods/goddesses [or **Potamoi**]

15. **A character in one of this man's novels is saddened when his unpublished manuscript *Thirty Years of Misrule* is used as wadding paper. Captain Mitchell and Dr. Monygham are imprisoned in another scene in that novel, in which Giorgio Viola accidentally shoots the protagonist, who partners with Martin Decoud. A Russian "harlequin" is encountered by the protagonist of another of his novels, who narrates that novel from on board the (*)** *Nellie*. One of this man's novels centers on Giovanni Fidanza's adventures at Charles Gould's silver mine in Costaguana. His most famous novel contains a character who writes a report footnoted "Exterminate all the brutes!" and dies after whispering "The horror! The horror!" For 10 points, name this Polish-born author of *Nostromo* who wrote of Marlow's trip down the Congo in search of Kurtz in *Heart of Darkness*.
ANSWER: Joseph **Conrad** [or Józef Teodor Konrad **Korzeniowski**]

16. **Films by one director from this country include one in which a hotel owner named Paul carries on a wholly anonymous affair and a biopic of Emperor Puyi. Another film made by a director from this country follows the life of David "Noodles" Aaronson. Near the ending of one film from this country, the protagonist walks with exaggerated steps towards his execution to try to (*)** fool his young son. *Last Tango in Paris* and *The Last Emperor* were directed by a man from this country, as was *Once Upon a Time in America*. A Jewish man is taken to a concentration camp with his son in *Life is Beautiful*, a movie directed by this country's native son Roberto Benigni. For 10 points, name this European country, the filming location of many spaghetti westerns.
ANSWER: **Italy** [accept the **Italian** Republic or Repubblica **Italiana**]

17. **During this man's coronation, anti-Semitic riots resulted in the death of Jewish scholar Jacob of Orleans. The father of a mysterious son named Philip of Cognac, this ruler may have had a homosexual relationship with the son of Louis VII. Despite the bad omen of a "rain of blood," he ordered the construction of the castle Chateau Gaillard. This man said to Emperor Henry IV "I am born in a rank which recognizes no superior but God" after being accused of murdering Conrad of Montferrat. The husband of (*)** Berengaria of Navarre, this man was captured by Leopold V of Austria, allowing his brother John to revolt in his absence. During the Third Crusade, he signed a treaty with Saladin allowing Christian access to Jerusalem. For 10 points, name this English king known as the "Lionheart."
ANSWER: **Richard I** [accept **Richard the Lionheart**ed until mentioned or **Richard Coeur de Lion** until "Lionheart"]

18. **In one work, this man posed the question "Why cannot we write the entire 24 volumes of the Encyclopedia Britannica on the head of a pin?" That work by this scientist is titled "There's Plenty of Room at the Bottom" and discusses the possibility of manipulating individual electrons, which gave rise to the field of nanotechnology. Two of this scientist's works are subtitled for the "Adventures of a Curious Character." This scientist's (*)** undergraduate lectures form the basis for a three volume set of books, and he wrote an autobiography whose name begins with the words "Surely, You're Joking." For 10 points, the behavior of subatomic particles is shown on what Caltech physicist's namesake diagrams?
ANSWER: Richard **Feynman**

19. **In one poem by this man, a shepherd escapes being bitten by a snake when he suddenly wakes from a nap near a fountain and kills the title creature. This author of "The Gnat" wrote a work which opens with a lament over one character's loss of a farm and later features a duel in song between Damon and Alphesiboeus, as well as a prediction of the birth of a child heralded as a "great increase of Jove" who Eusebius of Caesarea linked to (*)** Jesus Christ. That work, like a four-book didactic poem about agriculture, was written for his patron Maecenas. He extolled the virtue of *pietas* in his major work, which begins with the line "I sing of arms and the man" and features a *katabasis* facilitated by the Cumaean Sibyl, which allows its main character to speak to his father Anchises. For 10 points, name this author of the *Eclogues* and the *Georgics*, the Roman poet of the *Aeneid*.
ANSWER: **Virgil** [or Publius **Vergil**ius Maro]

20. **It's not in the Soviet Union, but a film about this city was subtitled *Symphony of a Great City.* A planned "Great -Hall" for this city's "World Capital" plan referenced Rome by having a dome featuring an eagle grasping a globe. During one event in this city, Avery Brundage benched Sam Stoller and Marty Glickman, perhaps to prevent embarrassment. The never completed *Volkshalle* in this city was planned by (*)** Albert Speer. It was where Rosa Luxemburg was killed during the failed left-wing Spartacist movement. This city is the setting of a two-part 1938 film made shortly after *Triumph of the Will* by Leni Riefenstahl. For 10 points, name this city where Jesse Owens won four gold medals at the 1936 Summer Olympics, which was intended to promote the Nazi regime.
ANSWER: **Berlin**

21. **This man's forces killed captives in the Massacre of Verden while fighting warriors led by Widukind. His son conquered a fortress called the Ring of the Avars in his defeat over the Avar Khaganate. This ruler married Desiderata, daughter of the king of the Lombards, and he invited such scholars as Peter of Pisa and (*)** Alcuin of York to join his court. Some of this man's chief followers were killed at Roncevaux Pass by the Basques. He was succeeded by his son Louis the Pious and his territories were ultimately divided in the Treaty of Verdun. On Christmas Day in 800, this man was crowned emperor by Pope Leo III. For 10 points, name this eldest son of Pepin the Short, the founder of the Carolingian Dynasty.
ANSWER: **Charlemagne** [or **Charles the Great** or **Charles I**]

Bonuses

1. Name some interesting things about religion in the US, for 10 points each.
[10] This western city contains the Crystal Cathedral complex, which includes a giant "prayer spire" that was designed by Philip Johnson. The church recently declared bankruptcy and sold their Catholic Diocese of Orange in this city.
ANSWER: **Los Angeles**
[10] There are apparently 30,000 people in the US who adhere to this nature-worshipping, neopagan belief system, which incorporates Celtic myths and "ancient" solstice and equinox festivals like Samhain and Beltane.
ANSWER: Neo-**Druid**ism [or Reformed **Druid**s of North America]
[10] This wacky new age religion bills itself as the "religion of light and sound of God" and relies on chants like "HU" to allow the soul to travel to different planes of existence. Their current mahanta, or leader, is Sri Harold Klemp.
ANSWER: **Eckankar**

2. Identify some novels with two things in common, for 10 points each.
[10] Parvati the Witch, Shiva of the Knees, and the telepathic protagonist Saleem Sinai are among the title characters, all of whom were born during the first hour of India's independence, of this Salman Rushdie novel.
ANSWER: ***Midnight's Children***
[10] The relationship between Ammu and the *dalit* Velutha is driven apart and the twins Estha and Rahel suffer through pretty terrible childhoods in this only novel by Arundhati Roy.
ANSWER: *The **God of Small Things***
[10] The narrative of this Kiran Desai novel is split between Biju, an illegal immigrant in New York, and Sai, a girl living in the Himalayan town of Kalimpong with her Anglophile grandfather Jemubhai.
ANSWER: *The **Inheritance of Loss***

3. In celebration of lunch, here is a bonus on American cannibalism. For 10 points each:
[10] This infamous group of pioneers set out in 1846 for California, but got trapped in the Sierra Nevada. They ended up having to resort to cannibalism to stay alive.
ANSWER: **Donner** Party
[10] Human flesh may have been eaten by desperate residents of this settlement during its infamous "Starving Time" period. Things got better though, when John Rolfe commercialized a valuable cash crop.
ANSWER: **Jamestown** [prompt on the Colony of **Virginia**]
[10] This prospector was accused of killing and eating his companions after becoming snowbound in the Rocky Mountains in 1874. Sentenced to 40 years in prison for manslaughter, he briefly became the namesake of the Department of Agriculture's cafeteria in 1977 as part of a scheme to embarrass the government.
ANSWER: Alfred "Alferd" **Packer**

4. These particles were theorized to act individually, each according to a preordained plan. For 10 points each:
[10] Name these irreducible, elementary particles that were theorized by the author of *New Essays on Human Understanding* to make up everything in the universe.
ANSWER: **monad**s
[10] The champion of monads was this optimistic philosopher who co-invented calculus and contended that God created the "best of all possible worlds" for us to live in.
ANSWER: Gottfried **Leibniz** [or Gottfried Wilhelm von **Leibniz**]
[10] One of Leibniz's seven maxims is this principle, which argues that everything that is true must have a justification for why it is true. This principle is often considered one of the four classical laws of thought.
ANSWER: principle of **sufficient reason**

5. Wikipedia amusingly claims that this equation is used to predict the blossoms of Cherry trees in Japan, and it is used to describe the temperature dependence of the rate constant. For 10 points each:
[10] Name this equation which relates the rate constant to the negative ratio of activation energy to RT.
ANSWER: **Arrhenius** equation
[10] The pre-exponential factor in the Arrhenius equation has the units of 1 over what property?
ANSWER: **second**s [or **time**; accept any unit of time like **minute**s because I guess that works]
[10] Arrhenius' greenhouse law describes the dependence of radiative forcing on the concentrations of this compound. This compound can be used to remove caffeine from coffee.
ANSWER: **carbon dioxide** [or **CO2**]

6. In this poem's fourth section, its speaker notes "I have perceiv'd that to be with those I like is enough," echoing the claim in the first stanza that "The armies of those I love engirth me, and I engirth them". For 10 points each:
[10] Identify this poem from *Leaves of Grass*, the last stanza of which lists features of the title subject, including "man-balls, man-root, strong set of thighs" and "The lung-sponges, the stomach-sac, the bowels sweet and clean".
ANSWER: "**I Sing the Body Electric**"
[10] "I Sing the Body Electric", like the rest of *Leaves of Grass*, was written by this impressively-bearded early American poet.
ANSWER: Walt **Whitman** [or Walter **Whitman**]
[10] One poem from *Leaves of Grass* describes "starting from fish-shape" this place, a Native American term for Long Island. Whitman exhorts "sea-winds" to "blow up" along its coast in "Out of the Cradle Endlessly Rocking".
ANSWER: **Paumanok**

7. The numerical fourth of these symphonies was actually the first to be written and performed and earned its nickname when the crowd at the premiere allegedly dodged a falling chandelier. For 10 points each:
[10] Name this set of twelve symphonies that include the *Miracle* and the *Surprise*.
ANSWER: **London** symphonies [or **Salomon** symphonies]
[10] This prolific Austrian composer of at least 106 symphonies wrote the *London* symphonies.
ANSWER: Franz Joseph **Haydn**
[10] In addition to being the "father" of the symphony, Haydn is also credit as the "father" of this other musical genre. Haydn's contributions in this genre include his Opus 20, the "Sun" ones.
ANSWER: **string quartet**s [prompt on partial answer]

8. This man's namesake machines have a read/write head that moves along an infinite tape, editing the cells in order to compute things. For 10 points each:
[10] Name this British computer scientist who, along with Alonzo Church, is the namesake of the thesis that every computable function can be computed by one of his namesake machines.
ANSWER: Alan **Turing**
[10] The P vs NP problem is about whether adding this property to a Turing machine changes which problems it can solve in polynomial time. This is what the N in NP stands for.
ANSWER: **nondeterministic**
[10] Savitch's theorem proves that these two complexity classes are equal. They are the equivalents of P and NP but are defined in terms of complexity of a different resource instead of time. Name either.
ANSWER: **PSpace** or **NPspace** [or **polynomial space** or **nondeterministic polynomial space**]

9. This player's talent is accidentally transferred to a Taylor Gray-portrayed kid named Brian in the appropriately-titled 2012 film *Thunderstruck*. For 10 points each:
[10] Identify this 2008 Rookie of the Year, a small forward and perimeter player who currently stars alongside Serge Ibaka and Russell Westbrook for Oklahoma City.
ANSWER: Kevin Wayne **Durant**
[10] Kevin Durant was drafted second overall in the 2007 draft, one spot behind this Ohio State center, noted for appearing several decades older than he is. The Trail Blazers released him in 2012 after several injury-plagued years.
ANSWER: Greg **Oden** [or Gregory Wayne **Oden**, Jr.]
[10] The Lakers' first-round pick in 2007 was this Georgia Tech point guard, who was traded to the Grizzlies in the Pau Gasol deal and later sent to the Wizards, who released him when he and Gilbert Arenas drew guns on each other in a bizarre Christmas Eve 2009 incident.
ANSWER: Javaris Cortez **Crittenton**

10. Identify some things about Ragnarok that you won't be around to experience, since you'll have died during the Fimbulwinter, for 10 points each.
[10] In the *Vafthrudnismal*, Vafthrudnir reveals that unlike you, these two humans will survive Fimbulwinter and the rest of Ragnarok by hiding out in Hoddmimis Holt.
ANSWER: **Lif** and **Lifthrasir** [accept in either order; prompt on partial answer; both answers required for the points]
[10] Your frozen corpse will be unable to witness Surt, the ruler of Muspellheim, defeating this unarmed god in battle. Earlier, this deity defeated Beli with an antler after giving his magic sword to his servant Skirnir.
ANSWER: **Frey**r [or **Yng**vi]
[10] This one-eyed "All-Father", the chief of the Aesir, is swallowed whole and alive early on in the fighting by the wolf Fenrir. Later, his son Vidarr avenges his death, though you won't care, since you'll be dead.
ANSWER: **Odin** [or **Woden**, or **Wotan**az]

11. The Theatre de la Huchette has staged this play as the first part of a double bill with its author's *The Lesson* continuously since 1957. For 10 points each:
[10] Identify this play, inspired by its author's use of the Assimil English-learning technique, in which the maid Mary, the Fire Chief, the Smiths, and the Martins spend an unusual evening shouting non-sequiturs at each other.
ANSWER: The **Bald Soprano** [or La **Cantatrice Chauve**]
[10] *The Bald Soprano* was written by this Romanian-French absurdist playwright, whose other works include *The Future is in Eggs* and *Rhinoceros*.
ANSWER: Eugene **Ionesco** [or Eugen **Ionescu**]
[10] This author of *The Age of Television* and *The Genius of the German Theater* classified Ionesco as part of the "Theater of the Absurd" in his massively influential 1961 book of the same name.
ANSWER: Martin Julius **Esslin** [or Julius **Pereszlényi**; or **Pereszlényi** Gyula Márton]

12. This man's namesake law during La Reforma declared all citizens equal before the law. For 10 points each:
[10] Name this Zapotec politician who served five terms as president of Mexico. He briefly set up a government in exile after Emperor Maximilian I took power in the country.
ANSWER: Benito **Juarez** [or Benito Pablo **Juarez** Garcia]
[10] As a young man, Juarez went into exile because he was opposed to this man's control of Mexico. This man, who used a prosthetic leg, is best known for leading Mexican troops in the bloody siege of the Alamo in 1836.
ANSWER: Antonio Lopez de **Santa Anna** [or Antonio de Padua Maria Severino Lopez de **Santa Anna** y Perez de Lebron]
[10] This 1854 document endorsed by Juarez was a plan for the removal of Santa Anna. This plan also called for a convention to draft a constitution for Mexico.
ANSWER: Plan of **Ayutla**

13. In this technique, microbes are washed with Iodine, which acts as a mordant, after first being washed with crystal violet. For 10 points each:

[10] Name this technique which differentiates microbes based on the thickness of the peptidoglycan cell wall. Microbes that do not retain crystal violet stain pink and are said to be "negative" for this stain.
ANSWER: **Gram** staining
[10] Organisms with high concentrations of mycolic acids in their membranes are studied using the Acid Fast stain, which is used to study this genus of bacteria. The causative agents of tuberculosis and leprosy belong to this genus.
ANSWER: *__Mycobacterium__* [or **mycobacteria**]
[10] Malachite green can be used to determine whether a bacterial species is capable of forming these structures. These structures are formed in low-nutrient environments and are produced by *Clostridium* species.
ANSWER: **spore**s [or **endospore**s]

14. This figure was described in the writings of Jean de Mailly and Martin of Opava. For 10 points each:
[10] Give the *female* name of the legendary female pope who supposedly reigned during the Middle Ages by disguising herself as a man. In most of the stories, this figure is exposed when she gives birth and dies shortly after.
ANSWER: Pope **Joan** [accept **Agnes**, as some sources suggest this, prompt on any answer involving **John**, which is not a female name]
[10] Martin of Opava claimed Joan reigned between Leo IV and the third pope with this name. Until recently, Joseph Ratzinger served as the sixteenth pope with this name.
ANSWER: **Benedict**
[10] This man called the female pope "Agnes" in making an argument at his trial that the church does not need a pope. After he was burned at the stake for heresy, his followers fought a series of namesake wars against Emperor Sigismund.
ANSWER: Jan/John **Hus** [accept **Hussites**]

15. Identify the following about the delightful painting *Boy Bitten by a Lizard*, for 10 points each.
[10] It was painted by this artist of *The Fortune Teller* and *The Cardsharps*, who fled Rome after killing Ranuccio Tomassoni.
ANSWER: Michelangelo **Merisi** da **Caravaggio** [accept either underlined portion]
[10] Mario Minniti, a likely candidate for the painting's model, was also one of the models Caravaggio used for this painting in the Contarelli Chapel. It depicts the moment in which a certain tax collector was inspired to follow Christ.
ANSWER: The *__Calling of St. Matthew__*
[10] Roberto Longhi suggested that it was inspired by this earlier artist's *Boy Bitten by a Crab*, which she sent to Michelangelo. This woman also painted a portrait of Bernardo Campi painting a portrait of her.
ANSWER: Sofonisba **Anguissola** [alternately, **Anguisciola**]

16. bell hooks wrote about this discipline as "the practice of freedom" in a book titled after doing it "to transgress." For 10 points each:
[10] Name this discipline, which Jules Ferry and Horace Mann argued should be free and public.
ANSWER: **education** [accept equivalents like **teach**ing or **pedagogy** or **school**ing]
[10] This proponent of scientific pedagogy, a female Italian physician, created a namesake education strategy that depends on children making their own independent choices.
ANSWER: Maria Tecla Artemesia **Montessori**
[10] This founder of the critical pedagogy movement is a Brazilian theorist who discussed the educational relationship between the colonizer and the colonized in his *Pedagogy of the Oppressed*.
ANSWER: Paulo Reglus Neves **Freire**

17. Gaston Modot played the "Man" in this film, which also featured the Dada artist Max Ernst. For 10 points each:
[10] Name this film whose female protagonist sucks on a statue's toes to satisfy her sexual desires. Its ending juxtaposes scenes from *120 Days of Sodom* with images of Jesus' crucifixion.
ANSWER: *L'**Age d'Or*** [or *The **Age of Gold***]
[10] *L'Age d'Or* was a collaboration between Luis Buñuel and this surrealist artist, who painted melting clocks in *The Persistence of Memory*.
ANSWER: Salvador **Dalí**
[10] Another surrealist was this photographer, who created *Le Violon d'Igres* by painting f-holes onto a nude photograph of Kiki, and then re-photographing the modified print. His real name was Emmanuel Radnitzky.
ANSWER: **Man Ray**

18. This character is disgusted by the abstract paintings of Duncan Forbes and is separated from his aggressive wife, Bertha Coutts. For 10 points each:
[10] Identify this character who works as a gamekeeper at Wragby and spends most of a certain novel having an affair with Constance Chatterley.
ANSWER: **Oliver** **Mellors** [accept either underlined portion; prompt on "*Lady Chatterley's Lover*"]
[10] This English author of *Aaron's Rod* and *Sons and Lovers* wrote *Lady Chatterley's Lover*, the title character of which is Oliver Mellors.
ANSWER: David Herbert **Lawrence**
[10] Lawrence's novel *Women in Love* was a sequel to this 1915 novel about three generations of the Brangwen family. In its final section, Ursula becomes romantically interested in both her teacher Miss Inger and the Polish boy Anton Skrebensky.
ANSWER: *The **Rainbow***

19. One member of this party was Prime Minister Alec Douglas-Home, whose tenure was judged to be "brief and uneventful" by Wikipedia. For 10 points each:
[10] Name this party led in the early 1970's by Edward Heath, which was more famously led by Margaret Thatcher, who took the United Kingdom into the Falklands War. It was traditionally the rival of the Labour Party.
ANSWER: **Conservative** and Unionist Party [or **Tory** Party]
[10] This Conservative PM from 1957 to 1963 signed the Partial Test Ban Treaty, but had his government rocked by the Profumo affair, in which his Secretary of State for War had an affair with the mistress of an alleged Soviet spy.
ANSWER: (Maurice) Harold **Macmillan**, 1st Earl of Stockton [or **Supermac**]
[10] Conservative politician Enoch Powell gave this April 1968 speech in which he said the U.K. was "literally mad" to allow mass immigration from Commonwealth countries. Powell referred to this speech as "the Birmingham" speech, but its more common title alludes to the *Aeneid*.
ANSWER: the "**Rivers of Blood**" speech

20. Name the following things from the mechanics of rotation, for 10 points each.
[10] This quantity is the rotational analogue of force, and in the analogue of Newton's second law of motion, this quantity is equal to the product of the moment of inertia and angular acceleration.
ANSWER: **torque**
[10] This theorem expresses the relationship of the moments of inertia between two axes with the namesake property. According to the theorem, the difference between these two quantities is m times the square of the distance between the two axes.
ANSWER: **parallel axis** theorem [or Huygens-**Steiner** theorem]
[10] The description of rotations using Euler angles can run into this problem in which a degree of freedom is lost when two axes of rotation coincide.
ANSWER: **gimbal** **lock**

21. The membrane receptors of bacterial two-component signal transduction systems have a cytoplasmic domain that phosphorylates this amino acid. For 10 points each:

[10] Name this amino acid that is present in catalytic triads along with serine and aspartate residues. The bending of this amino acid causes the stabilization of oxyhemoglobin.

ANSWER: **histidine** [or **H**, or **His**]

[10] A formylated version of this amino acid is the first amino acid added during bacterial translation. It is coded for by the start codon AUG.

ANSWER: **methionine** [or **Met** or **M**]

[10] In the methionine side chain, a methyl group is bonded to an atom of this element. Because cysteine residues contain it, two of them can form a "bridge" named for this element.

ANSWER: **sulfur** [or **S**]