OOT 2020: [The Search for a Middle Clue]
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THE ANSWER TO THE LAST TOSS-UP SHOULD HAVE BEEN: phase transitions

Packet 2

Toss-ups:

1. A work by Cavalli-Sforza and Feldman argues that a type of this process can be used to explain changes in the Italian birth rate. A 2005 book by Richardson and Boyd is partly named for the cultural form of this process. A work titled *Unto Others* attempts to explain altruistic behaviour as a result of this process. That work is critiqued in *Burying the Vehicle*, which emphasizes the importance of 'replicators' in this process. In *The Selfish Gene*, Richard Dawkins argues that this process takes place at the level of the gene. For 10 points, name this biological process, the change in heritable characteristics over time.
ANSWER: **evolution** [accept natural **selection**] <GDC>

2. Susan Sontag described how the form of a film by this director 'resists being reduced to a 'story''. In another film by this director, a game of Russian roulette ends anticlimactically when it is revealed that the revolver is filled with soot. This director of *Smiles of a Summer Night* directed another film in which the protagonist is told he is 'guilty of guilt'. That film concerns a road trip in which Isak suffers a series of nightmares about impending death on his way to pick up an honorary degree. Another film by this director takes place during the Black Death and features a game of chess between a knight and a personification of the Devil. For 10 points, name this Swedish director of *Wild Strawberries* and *The Seventh Seal*.
ANSWER: Ingmar **Bergman** <SR>

3. In these structures, the genes S.H.R. and S.C.R. interact in the development of the radial axis. The Tanada effect refers to the adhesion of these structures to glass due to electric charge generated by boron. In the best characterised model system with this structure, lateral branching of this structure is initiated in the pericycle. The switch between high- and low-affinity nitrate uptake by this structure is triggered by phosphorylation of threonine 101 of the 'trans.ceptor' N.T.R.1.1. In this structure, the gene C.P.C. promotes, and G.L.2 inhibits, hair growth. In alder, *Frankia* forms nodules that fix nitrogen on these structures. Cytokinins are used to signal between this structure and the shoot. For 10 points, name these plant organs, used to anchor the plant and absorb water.
ANSWER: **root**s [prompt on rhizoids and rhizomes; accept *Arabidopsis thaliana* **root**s or *A. thaliana* **root**s] <LC>

4. One of this player's greatest rivals saved six match points before finally losing to this player in a match that is, in terms of games, the longest Wimbledon Ladies' Singles final of all time. This player partnered with Ken Fletcher to become the only woman to win every Mixed Doubles Grand Slam in a single year, and they are the only player to have won two separate Grand Slam boxed sets in their career, in that they won each doubles and singles Grand Slam multiple times. Martina Navratilova and John McEnroe argued that Evonne Goolagong should become the namesake of a stadium named for this tennis player as a result of their

homophobic views. For 10 points, name this Australian tennis player, the winner of the most grand slam singles titles in history.
ANSWER: Margaret **Court** <GDC>

5. The narrator of a poem by this author says 'give me/the daily/struggle/because/these things are my song' in a poem that begins with the claim that the narrator laughs and smiles at 'the old poets'. This author of the poem 'The Invisible Man' wrote a poem whose narrator claims that 'beauty is twice/beauty/and what is good is doubly good'. A poem by this author ends with the command to 'fasten your bodies to me like magnets' and begins with a description of a 'city of laddered stones'. A poem by this author evokes the night at their house on Isla Negra, and a collection by them consists of 'odes' to everyday objects like a pair of socks. For 10 points, name this author of *Elemental Odes* and *Canto General*, a Chilean poet.
ANSWER: Pablo **Neruda** <GDC>

6. A recent study suggests that this compound can be reacted with carbon dioxide in the presence of nanostructured cobalt particles to form naphthalene. Iron molybdate is effective in catalysing the partial oxidation of this compound. This compound can be carbonylated to produce acetic acid using an iridium catalyst in the Cativa process. This compound can be produced via hydrogenation of carbon monoxide, although previously it was produced via destructive distillation of wood, which gave rise to its alternative name 'wood alcohol'. Oxidation of this compound produces formaldehyde. For 10 points, name this simplest alcohol.
ANSWER: **methanol** [accept **carbinol**, **hydroxymethane**, **methyl alcohol**; accept **wood alcohol** before mention; do NOT accept or prompt on 'alcohol' alone; do NOT accept or prompt on 'methanal' - if unsure, ask them to spell it.] <AH>

7. One ruler of this empire commissioned the Letter of Tansar as a propaganda piece about the empire that preceded it. The founder of this empire came to prominence after the rebellion of their father Papak, and their successor was served by the intolerant high priest Kartir. An inscription left by that ruler of this empire tells of the capture of an imperial rival at Edessa and their deportation to Pars. The main feature remaining from this empire's capital is the Taq Kasra brickwork vault. This empire was established through a rebellion against Artabanus IV, and it kept the capital at Ctesiphon after the fall of the Parthians. For 10 points, name this Zoroastrian Persian empire founded by Ardashir and ruled by Shapur the Great.
ANSWER: **Sasanian** Empire [accept **Sassanid**; accept **Neo-Persian** Empire; prompt on Persian Empire] <OSC>

8. An art manifesto produced during a university occupation in this country asks 'can we escape the "name"?' and was titled 'Why are we artists?'. Yellow dots on a black background form a pumpkin in a work by an artist from this country, who became popular again after a period of mental health issues when they displayed works like six chairs covered in white polka dots at the 1993 Venice Biennale [bee-en-AHL-ay]. One artist from this country designed an album cover that depicts a character called 'dropout bear' blasting into space and adorns *Graduation* by Kanye West. Many modern artists from this country were influenced by its Nihonga style. For 10 points, name this country, home to artists like Yayoi Kusama and Takashi Murakami.
ANSWER: **Japan** <GDC>

9. A bamboo fort built by Titumir in the nineteenth century later became a symbol of resistance in this region. A reorganisation named for this region that took place in 1905 provoked protests that involved tying

rakhi threads. Aban Thakur was part of an early-twentieth-century 'renaissance' named for this province. The brother of Subhas Chandra Bose, Sarat, proposed the creation of a socialist state named for this region in 1947, which led Clement Attlee to believe that it may become a separate country during Partition. A famine in this region was exacerbated by Winston Churchill's wartime 'denial policy' of confiscating rice supplies. For 10 points, name this region of India, which names a modern Indian state that contains Calcutta.
ANSWER: **Bengal** [accept West **Bengal**] <GDC>

10. In one work by this author, the meatpacking tycoon Pierpont Mauler becomes disaffected with capitalism after meeting a member of the 'Black Straw Hats'. Another work by this author was at one point attributed to 'Mr Nobody', and contains a warehouse fire which is blamed on the innocent man Fish. This author of *Saint Joan of the Stockyards* wrote a play in which Chicago gangsters expand their corrupt cauliflower empire into Cicero, Illinois. That play allegorises the rise of the Nazis and is titled *The Resistible Rise of Arturo Ui*. This author also created Anna Fierling, who sells mouldy bread to soldiers during the Thirty Years' War. For 10 points, name this leading practitioner of epic theatre, the German playwright of *Mother Courage and her Children*.
ANSWER: Bertolt **Brecht** <AH>

11. This mathematician's namesake submanifolds are the maximal isotropic submanifolds, and the restriction of the symplectic form to them is vanishing. Approximations of irrational numbers by rational numbers will be bounded by this mathematician's namesake numbers. One theorem due to this mathematician states that the order of any subgroup of a group G must divide the order of G. Subject to a constraint, local extrema can be found using this mathematicians namesake multipliers. For 10 points, which mathematician names special points in the three body problem such as L1 and L2 where centrifugal force balances gravity?
ANSWER: Joseph-Louis **Lagrange** [accept Giuseppe Luigi/Ludovico **Lagrangia**; accept **Lagrange** submanifold; accept **Lagrange**'s theorem; accept **Lagrange** numbers; accept **Lagrange** multiplier; accept **Langrange** points] <DD>

12. In a novel by this author, a king summons a group of roof-walking night demons called Omoluzu to defend him. That novel by this author begins 'The child is dead. There is nothing left to know.' and is narrated by Tracker. This author wrote a novel with five sections all named after musical tracks, such as 'Original Rocker' and 'Shadow Dancin''. The most famous novel by this author of *Black Leopard, Red Wolf* is set in the build-up to the Smile Jamaica Concert and explores the attempts to assassinate a man referred to as 'the Singer', Bob Marley. For 10 points, name this author of *A Brief History of Seven Killings*.
ANSWER: Marlon **James** <AH>

13. In the aftermath of this event, its most prominent figure was captured under an ash tree after being seen 'filling his pocket with peas'. In the run-up to this event, the goldsmith Thomas Hayward Dare was fined £5,000 for 'seditious' words, and one group hired the Dutch ship *Helderenburg*. A landing at Lyme Regis began this event, which also involved a coronation at Taunton. John Churchill commanded the infantry at the pivotal Battle of Sedgemoor during this event, after which many other participants were executed or transported on the order of Judge George Jeffreys in the Bloody Assizes. For 10 points, name this West Country rebellion by an illegitimate son of Charles II against his uncle James II.
ANSWER: Duke of **Monmouth**'s Rebellion [accept **Pitchfork** Rebellion; accept **West Country** Rebellion before mention] <CJ>

14. A paper by Tim Besley and Alan Case finds that these restrictions affect economic policies under Democratic governors. Ray Thornton sued an organisation named for these things in 1995, leading to a Supreme Court case in which John Paul Stevens wrote, 'the right to choose representatives belongs not to the States, but to the people'. Bruce Peabody wrote an article arguing that the 'constitutional ineligibility' clause in the 12th Amendment does not close a loophole regarding an example of these restrictions in the 22nd Amendment. That example of these restrictions was enacted after the election of 1944, which saw Franklin D Roosevelt take office for the fourth time. For 10 points, name these legal restrictions on incumbents seeking re-election.
ANSWER: **term limits** <GDC>

15. One opera by this composer ends with the three main characters, along with the doctor and the Baroness, singing the quintet 'To Leave, To Break'. This composer personally accompanied the premiere of their *Hermit Songs* and wrote two settings of the poem 'Sure On This Shining Night'. Another work by this composer breaks into an *allegro agitato* after an opening section in which the solo soprano sings 'It has become that time of evening when people sit on their porches'. That work by this composer of *Vanessa* sets text by James Agee, while another of their pieces was arranged into a setting of the *Agnus Dei* and played to mark the deaths of two U.S. presidents. For 10 points, name this composer of *Knoxville: Summer of 1915* and *Adagio for Strings*.
ANSWER: Samuel **Barber** <CJ>

16. This phenomenon is described as a 'global herbivore' in a 2005 paper by Bond and Keeley. The Aleppo pine releases its seeds in response to this phenomenon, and a feedback process involving this phenomenon is thought to have driven the expansion of C.4 grasses. Flaking bark in *Eucalyptus* species encourages this phenomenon, while sclerophyllous leaves permit growth after this phenomenon. The crown form of this phenomenon moves through the canopy and is more destructive than its low-intensity surface form in regions adapted to this phenomenon. One method of agriculture involves 'slashing' vegetation before applying this phenomenon. For 10 points, name this phenomenon that has devastated forests in California and Australia.
ANSWER: **fire**s or wild**fire**s or forest **fire**s [accept **burning** or **combustion** or other word forms] <LC>

17. Tiedemann Giese [GEE-zuh] was an early supporter of this thinker, who would later will his writings to Giese. Bartolomeo Spina of Pisa meant to condemn this thinker, but fell ill and died prior to doing so. Martin Luther described this thinker as 'a fool who went against Holy Writ'. Hans Blumenberg argued that it is a misconception that Giordano Bruno was a martyr for this thinker's system of thought. Georg Joachim Rheticus convinced this thinker to publish a work that was dedicated to Pope Paul III. That work by this thinker critiqued Ptolemaic epicycles in *On the Revolutions of the Heavenly Spheres*. For 10 points, name this thinker, a Polish astronomer who set out a heliocentric model of the solar system.
ANSWER: Nicolaus **Copernicus** <GDC>

18. One ruler of this kingdom sent an embassy to Abaqa Khan of the Ilkhanate and compiled the 'Book of the Consulate of the Sea' as well as the autobiographical 'Book of Deeds'. That king of this kingdom also signed the Treaty of Capdepera after defeating Abu Yahya in one campaign. After a ruler of this kingdom known as 'the Great' pressed the claim of his wife Constance II to one throne, Martin IV declared a crusade against this kingdom as part of the War of the Sicilian Vespers. During that war, this kingdom fought against its former territory of Majorca. A later princess of this kingdom was first married to Arthur, Prince of Wales. For 10 points, name this kingdom whose ruler Ferdinand II married Isabella of Castile.

ANSWER: **Aragón** <CJ>

19. The Holstein-Primakoff and Schwinger transformations both convert a system of spins into a system of these entities. A Bogoliubov [bog-ol-YOU-bov] transformation preserves the symplectic structure on these entities' Hilbert space by mixing certain operators using hyperbolic trigonometric functions. Spontaneously broken symmetries are accompanied by the Goldstone variety of these particles. Wave functions of N particles of this type can be computed using permanents to enforce the equality of the wave function under particle exchange. At low temperatures gases of these particles form a condensate named for their namesake and Einstein. For 10 points, name these integer spin particles, one fundamental example of which is the 'Higgs' particle.
ANSWER: **boson**s [prompt on quasiparticles by asking 'with what statistics?']<JR>

20. A house in this novel is described as having 'A reckless air, rather triumphant' as if remembering past banquets. One character visits Doctor Baker shortly before her death in this novel, creating evidence which enables blackmail by Jack Favell. This novel's protagonist marries a much older man two weeks after meeting him in Monte Carlo. This novel's protagonist is tricked into wearing the same dress that a different figure wore in a portrait, and it ends with an estate being burned down by the manipulative housekeeper Mrs Danvers. Set at Manderley, for 10 points, name this novel titled for the psychopathic previous wife of Maxim de Winter, a work by Daphne du Maurier.
ANSWER: *Rebecca* <AH>

Bonuses:

1. A character in this story accidentally wakes up her lover and scorches him with a candle. For 10 points each:
[10] Name this story, in which the youngest daughter of the king and queen is so beautiful that she is worshipped in place of Venus. A team of ants later help the daughter to sort through a huge hill of mixed grains, one of the impossible tasks she is set.

ANSWER: the tale of **Cupid and Psyche**

[10] The tale of Cupid and Psyche is related in the *Metamorphoses* of this non-Ovid author, in which the protagonist Lucius hears an old woman tell the tale while he is in the form of an ass.

ANSWER: Lucius **Apuleius** Madaurensis

[10] Later in the tale, Venus gives Psyche four tasks, the final of which is to obtain from this deity 'a little of your beauty, enough for one brief day'. This deity was previously abducted from her mother Ceres by Pluto.

ANSWER: **Proserpina** [be generous and accept **Persephone**] <OSC>

2. This city hosted the Winter Youth Olympics in 2012. For 10 points each:

[10] Name this city, where John Curry won a gold medal at a Winter Olympic Games. Zaha Hadid designed a tower for another Olympics in this city.

ANSWER: **Innsbruck**

[10] Innsbruck is the third stage of the Four Hills Tournament in this sport. Competitors in this sport take off from a 'table' and land in the Telemark position.

ANSWER: **ski** **jumping** [accept **ski** **flying**; prompt on partial]

[10] This ski town holds a stage of the Four Hills Tournament every New Year's Day. Marius Lindvik won in Innsbruck and this stage of the Four Hills Tournament in 2020.

ANSWER: **Garmisch**-Partenkirchen [GAR-mish PAR-ten-keer-ken] [accept **Gudiberg**] <DD>

3. This artist depicted a nude woman feeding a green parrot in one work, and in another depicted German soldiers using naked Belgians as a human barricade. For 10 points each:

[10] Name this artist, who in one work depicted a trolley car heading for Vesey Street under laundry lines put up by tenement residents.

ANSWER: George **Bellows**

[10] George Bellows is most famous for depicting people engaged in this activity, such as his work *Stag at Sharkeys*. Bellows depicted Jack Dempsey and Luis Angel Firpo engaging in this fighting sport.

ANSWER: **boxing**

[10] While most of the famous paintings of the Ashcan school depict New York, the movement had its origins in this other US city. Some of the members of the Ashcan school met while studying under Thomas Anshutz in this east coast city.

ANSWER: **Philadelphia** <GDC>

4. Recent discoveries at the village of Foremark support 20th-century excavations around Repton that provide material evidence of this force's encampment in the winter of 873. For 10 points each:

[10] Name this expedition, whose leaders the *Anglo-Saxon Chronicle* names as Hingwar and Hubba. That pair may actually be Ivar the Boneless and Ubba, as recorded in Old Norse sources about the sons of the legendary Ragnar Lothbrok.

ANSWER: **Great Heathen Army**

[10] Following their encampment at Repton, the Army advanced on this Anglo-Saxon kingdom, where, according to the Chronicle, its king Burgred fled in exile to Rome, and was replaced by a puppet, 'Ceolwulf, an unwise king's thane'.

ANSWER: **Mercia**

[10] After the conquest of Mercia, the Army is reported to have split into two, with the southern portion led by this man. Despite his early successes against Alfred the Great, this man was defeated at the Battle of

Edington and converted to Christianity after negotiating peace with the Treaty of Wedmore.
ANSWER: **Guthrum** <OSC>

5. In North American and Australian English, alveolar stops in this environment are subject to flapping, which changes their pronunciation. For 10 points each:
[10] Name or describe this environment. The 's' consonant in Old Latin uniformly changed to 'r' in Classical Latin when the original 's' was in this environment.
ANSWER: **intervocalic** [or being **between vowels**; do not accept or prompt on 'after a vowel' or 'before a vowel']
[10] In intervocalic position, the Spanish 'd' consonant is weakened to become a consonant of this type. Grimm's Law means that voiceless stops in Germanic languages became voiceless versions of these consonants, which include 's'.
ANSWER: **fricative**s [accept **spirant**s]
[10] Though a large number of regular Indo-European sound changes affect consonants, ablaut affects this other category of phonemes, contrasted with consonants.
ANSWER: **vowel**s <AH/ELM>

6. This metal was first produced in pure ductile metallic form by the Hunter Process. For 10 points each:
[10] Name this transition metal with atomic number 22. Its low density and high strength makes its alloys extremely useful in aerospace engineering.
ANSWER: **titanium** [accept **Ti**]
[10] The Kroll process enables processing of this most commercially significant titanium ore. This mineral also contains iron, and can be purified to form rutile using the Becher process.
ANSWER: **ilmenite** [or **manaccanite**; accept **FeTiO$_3$**; prompt on iron titanium oxide; do NOT accept or prompt any less complete answers]
[10] Transition metals with octahedral complexes may undergo this effect, which removes a degeneracy via distortion. This doubly-eponymous effect has a namesake theorem which states that stability and degeneracy are not both possible unless a molecule is linear.
ANSWER: **Jahn-Teller** Effect <AH>

7. In 2007, Chicago collector John Maloof discovered thousands of photographs by this artist in a suitcase, which went viral when they were published on the website Flickr. For 10 points each:
[10] Name this American photographer, whose 150,000 photos were primarily taken when they were working as a nanny. A documentary titled for 'Finding' this photographer was nominated for an Academy Award in 2013.
ANSWER: Vivian **Maier**
[10] Maier is best known for photographic self-portraits, as is this other photographer who posed in different stereotypical feminine roles in their *Untitled Film Stills*.
ANSWER: Cindy **Sherman**
[10] Sherman's most recent work has been uploaded to this photo-based social media platform. In her self-portraits for this platform, Sherman uses the app Facetune to alter her appearance as part of a project for *W* magazine.
ANSWER: **Instagram** <SR>

8. Gilbert Harmann's 'no false lemmas' formulation is an attempt to respond to the central claims of this philosopher's most famous paper. For 10 points each:
[10] Name this philosopher. Robert Nozick's 'truth tracking' theory is an attempt to respond to this philosopher's 1963 paper on the definition of one philosophical concept.
ANSWER: Edmund **Gettier**
[10] Edmund Gettier worked in this area of philosophy, which is the study of the nature and definition of knowledge.
ANSWER: **epistemology**
[10] This philosopher presented a 'virtue based approach' to the problem of knowledge to avoid the 'inevitability' of Gettier-type problems arising in definitions of knowledge.
ANSWER: Linda **Zagzebski** <GDC>

9. A 2017 paper in *Nature* found that this phenomenon had affected an 800-kilometer stretch of the Great Barrier Reef. For 10 points each:
[10] Name this phenomenon, mostly caused by rising water temperatures and ocean acidification, in which coral polyps are forced to release their algae, leaving behind a calcium carbonate skeleton that turns a distinctive white color.
ANSWER: coral **bleaching**
[10] This country has received international praise for its efforts to combat coral bleaching of the Mesoamerican Barrier Reef, the world's second-largest, in an effort to protect its tourism industry that relies on ocean attractions like the Blue Hole.
ANSWER: **Belize**
[10] Another threat to Caribbean reefs is this invasive species, a venomous fish known for its long red, white, and black fins. Conservation institutions in Honduras' Bay Islands have launched initiatives encouraging local divers to hunt and eat these fish in order to keep their population down.
ANSWER: **lionfish** <CJ>

10. ICE ['ice'] elements parasitise this form of gene transfer, as they encode their own enzymes necessary for this process. For 10 points each:
[10] Name this method of horizontal gene transfer. In one form of this method, a donor of the H.f.r strain forms an F pilus between it and the recipient, for plasmid transfer.
ANSWER: bacterial **conjugation**
[10] An inter-kingdom form of conjugation initiated by this genus of bacteria has been used for genetic transformation of plants. This bacterium transfers the Ti ['tie'] plasmid, inducing opine production in plant cells.
ANSWER: ***Agrobacterium*** *tumefaciens* [accept ***Agrobacterium*** ***tumefaciens***; accept ***Rhizobium*** *radiobacter* / *R*hizobium **radiobacter**; do NOT accept '*Agrobacterium rhizogenes*' or '*Rhizobium rhizogenes*' or 'rhizobia']
[10] A 2014 paper by Li *et al* found that the neo.chrome photoreceptor found in this group originated via horizontal gene transfer from hornworts. These vascular plants produce fronds and often produce spores from sori; UK species of them include bracken.
ANSWER: **fern**s [accept **Monilophyt**a or **Polypodiopsid**a or **Polypodiophyt**a] <LC>

11. In a novel by this author, the title character escapes from his abusive master Erasmus Wilde and embarks on a scientific journey. For 10 points each:

[10] Name this author of *Washington Black*, who was previously acclaimed for their 2011 novel *Half-Blood Blues*.
ANSWER: Esi **Edugyan**
[10] After escaping with Washington, Christopher Wilde abandons him in this country. Edugyan is from this country, as is another author of a trilogy of novels including *The Manticore*.
ANSWER: **Canada**
[10] Edugyan has cited this author's works as a major influence on her novels, and praised the 'exquisitely torqued prose' of this author's novel *Beloved*.
ANSWER: Toni **Morrison** <AH>

12. One member of this group was known as the 'thief of Tushino' and was killed by the Tatar Peter Urusov after most of their supporters defected upon the approach of Sigismund III. For 10 points each:
[10] Give the collective name of these three figures, the first of whom married the Polish princess Marina Mniszech [muh-NEE-zhech] and was killed after jumping out the window of a Moscow bathhouse.
ANSWER: **False Dmitry**s [accept **impostors pretending to be Dmitry** Ivanovich or reasonable equivalents]
[10] This regent of Russia probably assassinated the real Dmitry and later became tsar. The first False Dmitry deposed this man's son Feodor II and held his daughter Xenia prisoner as a concubine.
ANSWER: Boris **Godunov**
[10] In order to defeat the second False Dmitry and relieve the Polish siege of Smolensk, Russia allied with this country, which sent a force under the command of Jacob de la Gardie. De la Gardie later served as one of the regents for this country's queen Christina.
ANSWER: **Sweden** <CJ>

13. Inductors generate a back E.M.F. when this value changes, and the value of this quantity is constant at all points in a series circuit. For 10 points each:
[10] Name this quantity measured in amperes and measured by ammeters. For a metal wire, this quantity is proportional to the drift velocity of the electrons.
ANSWER: electric **current**
[10] According to this theorem, any linear circuit can be written as an impedance in parallel with an ideal current source equal to the short circuit current.
ANSWER: **Norton**'s theorem [prompt on the <u>superposition</u> theorem]
[10] Aside from using Norton and Thevenin's theorems to simplify circuit analysis, one can always write down simultaneous equations corresponding to these statements. These two statements say that the current entering a node equals the current leaving a node, and the sum of the voltages around any loop is zero.
ANSWER: **Kirchoff**'s laws <JR>

14. This composer used the rare time signature of 1/1 [one one] in the *prestissimo* Scherzo of their *Symphony No. 2*, which features near-continuous staccato quarter notes except in its Trio section. For 10 points each:
[10] Name this composer. The first movement of that symphony opens with a theme consisting of long whole note B, eighth notes B, B, C, E, D-sharp, B, a quarter-note D-natural, and whole note B.
ANSWER: Alexander Porfiryevich **Borodin**
[10] This piano sonata mostly lacks time signatures, but does have a single bar of 4½/4 [four-and-a-half four] in its third movement. This piano sonata is also notable for including parts for viola and flute, and directing that a block of wood be used in its second movement.

ANSWER: Charles **Ives**'s *Piano Sonata No. 2, Concord, Mass., 1840–60* / '**Concord** Sonata' [prompt on partial answers]
[10] This ballet by Stravinsky is noted for its rhythmic complexity, with its final 'Sacrificial Dance' featuring time signatures including 3/16 [three sixteen], 4/16, and 5/16.
ANSWER: *The **Rite of Spring*** <AP>

15. Some of the most vicious combat in this campaign was seen during the engagement known as the Battle of the Tennis Court. For 10 points each:
[10] Name this theatre of the Second World War where Operation U-Go was halted in two fierce battles in 1944 when infiltration tactics and encirclement were rendered ineffective by air supply to the defenders, while many of the attacking force's 50,000-plus casualties were caused by malnutrition and malaria.
ANSWER: **Burma** Campaign
[10] The Allied victories at the Battles of Kohima and Imphal were the turning point in the Burma Campaign, whose final stages in May 1945 included Operation Dracula, an amphibious assault to retake this colonial capital of Burma.
ANSWER: **Rangoon** [accept **Yangon**]
[10] This leader, later Governor-General of Australia, commanded Commonwealth forces in Burma. Described as 'the finest general World War Two produced', this man was noted for the loyalty he inspired in his men, with the image of 'a rather scruffy private with a general's tabs'.
ANSWER: Field Marshal William 'Bill' **Slim** <OSC>

16. In the poem 'Dunt' from this poet's collection *Falling Awake*, they describe 'a Roman water nymph made of bone' as a 'very speechless very broken old woman' as it tries to draw a long-dried-up river. For 10 points each:
[10] Name this poet. Episodes from a sewage treatment plant and some poachers form part of this poet's T.S Eliot-Prize-winning *Dart*.
ANSWER: Alice **Oswald**
[10] 'Tithonus', which concludes *Falling Awake*, is this kind of poem. Other examples of this kind of poem include 'Childe Roland to the Dark Tower Came', 'St Simeon Stylites', and 'Andrea del Sarto'.
ANSWER: **dramatic monologue** [prompt on monologue]
[10] This poet also wrote a dramatic monologue entitled 'Tithonus', and about 'Nature, red in tooth and claw' in *In Memoriam A.H.H.*
ANSWER: Alfred, Lord **Tennyson** <AP>

17. For 10 points each, name the following Inca rulers:
[10] This last Sapa Inca filled one room with gold and two with silver in an attempt to ransom themselves from Francisco Pizarro after being captured at Cajamarca [ca-ha-MAR-ca]. They were nevertheless executed.
ANSWER: **Atahualpa**
[10] This father of Atahualpa married the queen of the Quito Confederacy and was served by generals like Quizquiz. He probably died of smallpox while on campaign and left most of the empire to Huáscar.
ANSWER: **Huayna** Capac
[10] Nearly forty years after Atahualpa's death, the Spanish declared war on this final ruler of the Neo-Inca state, hunting down and killing them in 1572. The leader of an eighteenth-century rebellion by indigenous people considered this man their ancestor and called themselves the second ruler of this name.
ANSWER: **Túpac Amaru** I [prompt on partial answers] <CJ>

18. An early manifestation of this fault was the result of an AOL server software kludge that was designed to handle a database request that should 'never' time out. For 10 points each:
[10] Name this fault. Unix and Unix-like operating systems will eventually face an integer overload problem as a result of this fault caused by the fact that the time_t integer is stored in 32 bits in many of those systems.
ANSWER: **Y2038** [or **Year 2038** problem or **Unix Y2K** ; do NOT accept just 'Y2K']
[10] Programs using this language generally employ a time_t variable. This programming language was developed by Bell Labs to make utilities running on Unix, and an extension of it is called '[this language] ++'.
ANSWER **C**
[10] A partial cause of the Y2038 problem is that the variable time_t has this property, which means that when it reaches its maximum value then gets incremented, it wraps around to its lowest possible negative value. A numeric variable has this property if it can represent both positive and negative numbers.
ANSWER: **signed** <GDC>

19. Prem Bodasingh refuses to give up her seat on the bus in one scene in this novel. For 10 points each:
[10] Name this fictional reworking of Alan Paton's years as an activist, including real characters such as Helen Joseph. The title of this novel refers to the reaction of foreign visitors observing South African politics.
ANSWER: *Ah, But Your Land is Beautiful*
[10] Julie Summers' car breaks down in this other author's novel *The Pickup*. This writer's other novels include *The Conservationist*.
ANSWER: Nadine **Gordimer**
[10] Another novel by Gordimer ends with Maureen Smales running towards an unmarked one of these vehicles that 'may contain saviors or murderers'. This vehicle arrives at the village where the liberal white Smales family has fled from race war in Johannesburg.
ANSWER: **helicopter**s <AH>

20. The Ginans are devotional poems important to the largest subset of this religious group, known as the Nizaris, and this community also gave rise to the Druze faith. For 10 points each:
[10] Name this group that originally split from the rest of its sect due to its devotion to the lineage of the son of the sixth imam.
ANSWER: **Isma'ili**s [accept **Ismai'ilism**]
[10] The Isma'ilis, along with other groups like the Twelvers, belong to this major branch of Islam that considers Ali to be the true successor of Muhammad. Worldwide, it has fewer followers than the Sunni.
ANSWER: **Shia** [accept **Shi'ism**]
[10] Unlike the majority of Muslims, Isma'ilis hold that there are this many pillars of Islam. The *shahada* is not included in this number, as Isma'ili theology considers it to be the foundation upon which the rest lie.
ANSWER: **seven** <CJ>