1. Read the following passage carefully and answer Question No 1:

Satellite images over the last decade have revealed an unsettling choreography at Earth’s poles: sea ice that once advanced and retreated with seasonal discipline now fractures earlier, consolidates later, and sometimes departs altogether from expected lines on the map. In several summers, algal blooms have tinted peripheral ice a faint green, an aesthetic curiosity with grim subtext—warmer, nutrient-rich meltwater pooling atop thinning floes can foster photosynthetic growth even as the ice beneath loses structural integrity. Researchers stationed on drifting platforms report that the timing of melt ponds has shifted forward by weeks in some sectors, altering albedo and amplifying heat absorption when the sun is highest. Meanwhile, the cryosphere’s news is not confined to sea ice: outlet glaciers on Greenland have accelerated, calved more frequently, and delivered unprecedented pulses of freshwater into the North Atlantic, complicating regional ocean circulation. Reports of iceberg calving “the size of megacities” capture attention, but the subtler story—persistent mass loss measured in gigatons per year—carries the greater warning. Coastal planners far from the poles read these signals as near-term threats: higher baseline seas, compound flooding during storms, and salinization of groundwater that sustains agriculture. If warming continues on its current trajectory, the paradox may sharpen: a greener surface to some ice fields may be the preface to their disappearance.

The author’s primary intention is to  
(A) celebrate the aesthetic change in polar landscapes  
(B) argue that algal blooms are the main cause of sea-level rise  
(C) alert readers to systemic polar changes with cascading global risks  
(D) compare North Atlantic circulation directly to coastal farming methods

2. Read the following passage carefully and answer Question No 4:

A coastal commission considered projections for the next fifty years and confronted an uncomfortable arithmetic: even modest annual sea-level increments compound into frequent nuisance floods that rewrite building codes and redraw insurance maps. The commission’s maps included uncertainty bands—optimistic, median, and high-end scenarios—but public hearings fixated on the narrowest ribbon, as if wishful precision could be legislated. Testimony from climate scientists explained that thermal expansion of oceans and land-ice contributions are not interchangeable risks; sea ice melt alters albedo and weather, whereas ice-sheet loss moves the needle on sea level. A business consortium pressed for “balanced messaging,” seeking to avoid what it called “panic economics,” yet emergency managers noted that the cost of underestimating risk lands not on quarterly reports but on neighborhoods. The meeting ended with a resolution to update flood design standards every five years; the sea, indifferent to resolutions, kept its own calendar.

The commission’s main challenge as depicted is  
(A) technical inability to create maps  
(B) public preference for optimistic scenarios despite uncertainty  
(C) lack of testimony from scientists  
(D) overfunding of emergency management programs

3. Read the following passage carefully and answer Question No 7:

In the southern ocean’s cold grammar, ice shelves punctuate the coastline like commas that slow the flow of inland glaciers. When those commas fracture, the sentence of ice accelerates to its period at the sea. Recent monitoring has shown that warm circumpolar deep water can intrude beneath shelves, thinning them from below in ways invisible to a casual observer. A spectacular calving event—often compared to the footprint of a metropolis—may seize headlines, but the years of basal thinning that precede it are more diagnostically important. Scientists warn that some shelves buttress drainage basins holding enough grounded ice to reshape sea-level contours for centuries. Yet communication falters when technical language—grounding lines, marine ice-sheet instability, hydrofracture—meets civic discourse. The essential translation is this: remove the shelf, quicken the glacier; quicken the glacier, raise the sea.

The primary function of ice shelves, as presented, is to  
(A) decorate the coastlines without mechanical effect  
(B) buttress inland glaciers and slow ice discharge  
(C) cool surface waters to enhance fisheries  
(D) create habitats for algal blooms only

4. Read the following passage carefully and answer Question No. 10:

During an Arctic summer campaign, a field team documented how melt ponds formed earlier and persisted longer on multi-year ice, reorganizing surface topography into a network of lenses that funneled sunlight into the upper ocean. Instruments recorded a measurable decrease in local albedo just when solar input peaked, a timing that compounded melt. At the same time, the team measured a shift in the phenology of ice-associated algae, whose growth spurts coincided with the extended pond season. While the bloom’s green sheen was photogenic, microscopy and pigment analysis revealed it as a symptom of ecological re-timing, not recovery. The team’s reports warned that late-season refreezing over residual ponds produced thinner, saltier ice with different mechanical properties, predisposing it to earlier breakup the following year. What looked like a benign oscillation through the casual lens was, through the scientific one, a ratchet.

The earlier and longer presence of melt ponds primarily leads to  
(A) higher albedo and reduced melt  
(B) lower albedo and enhanced solar absorption  
(C) thicker multi-year ice formation  
(D) immediate stabilization of ice mechanics

5. Read the following passage carefully and answer Question No 13:

In policy debates, a recurring confusion conflates sea ice and land ice, leading to the claim that “melting ice doesn’t raise the ocean, like a glass of water.” Scientists clarify that sea ice behaves like the floating cubes, but land-based ice sheets are the reservoir whose runoff fills the glass. The distinction matters for coastal governance: investments in seawalls, zoning, and retreat hinge on whether projections incorporate dynamic ice-sheet responses. While near-term variability can produce plateaus or spurts in observed sea-ice extent, the long memory of land ice means decisions taken now reverberate through centuries of shoreline. Policymakers seeking certainty are told they must choose under uncertainty; the physics will not wait for unanimous votes.

The passage’s central clarification is that  
(A) sea ice and land ice contribute equally to sea-level rise  
(B) sea ice melt drives most long-term sea-level change  
(C) land ice melt, not floating sea ice, raises sea level  
(D) only ocean thermal expansion matters for coasts

6. Read the following passage carefully and answer Question No. 16:

A shipping consortium touted a banner season along newly navigable Arctic routes, citing fuel savings and shortened delivery times. Economists applauded marginal gains, but ecologists warned that the calculus omitted externalities: black carbon deposition from increased traffic darkens ice surfaces, accelerating melt; noise disrupts marine mammals whose migratory cues are already perturbed; and spill response capacity in remote, ice-inflected waters is limited. Indigenous communities, experienced navigators of seasonal rhythms, testified that the window of “safe” travel had become paradoxically more treacherous—thinner ice combined with unpredictable weather made traditional knowledge necessary yet insufficient. The ledger, when expanded beyond freight rates, did not balance.

The consortium’s focus on fuel savings neglects  
(A) economic benefits to ports  
(B) the external costs of environmental and social impacts  
(C) improvements in spill response capacity  
(D) redundancy in global shipping lanes

7. Read the following passage carefully and answer Question No 19:

City engineers modeling compound flooding noted that a storm arriving atop a high tide now rides a higher baseline sea than a generation ago. The amplification is non-linear: a few additional centimeters of background sea level convert rare threshold exceedances into routine street floods. Drainage systems designed to discharge by gravity back up when outfalls meet elevated seas, and what once was a one-in-fifty-year nuisance becomes a monthly choreography of detours. Critics argued that raising roads would suffice, but hydrologists countered that without parallel investments in pumps, valves, green absorption, and, in some neighborhoods, managed retreat, raised pavements would merely displace water into lower-lying homes. The city’s map of future habitability began to look less like a boundary and more like a gradient.

The passage emphasizes that small increases in sea level  
(A) have negligible effects on urban flooding  
(B) can trigger disproportionate increases in flood frequency  
(C) are fully mitigated by raising roads alone  
(D) only affect tidal timing, not drainage

8. Read the following passage carefully and answer Question No. 22:

A parliamentary committee reviewed testimony on permafrost thaw, a subject often overshadowed by sea-level headlines. Scientists explained that thaw unlocks previously frozen organic matter, releasing greenhouse gases that act as a feedback, amplifying warming. Infrastructure built on once-stable ground—pipelines, roads, housing—buckles as ice-rich soils subside unevenly. While these processes do not directly raise the sea, they reshape northern economies and add carbon to the global ledger. One member asked whether a cool winter could “reset” the terrain; the witness replied that permafrost has a thermal memory measured in decades, not seasons. The committee’s report recommended emissions cuts and region-specific adaptation, acknowledging that mitigation and adaptation are not substitutes but complements.

The feedback described in the passage refers to  
(A) sea-level rise causing permafrost thaw  
(B) thaw releasing greenhouse gases that increase warming  
(C) cooling winters reversing long-term trends  
(D) infrastructure stabilizing soils

9. Read the following passage carefully and answer Question No. 25:

In public discourse, numbers about sea-level rise can appear deceptively precise—centimeters attached to decades, millimeters to years—yet the largest uncertainties hinge on the dynamic response of ice sheets to warming. Some models constrain rapid change; others allow threshold behaviors that, once crossed, commit coastlines to multi-meter rises over centuries. Communicators thus face a dual task: to avoid false certainty while refusing false comfort. The responsible message is neither alarm for its own sake nor reassurance for convenience; it is the recognition that risk is a function of probability multiplied by consequence, and that the tails of the distribution, though less likely, are too costly to ignore. Planning to the median alone can be a plan for failure.

The passage suggests that the greatest uncertainty in sea-level projections is due to  
(A) tidal cycles  
(B) dynamic ice-sheet responses and thresholds  
(C) measurement error in tide gauges  
(D) rainfall variability over continents

10. Read the following passage carefully and answer Question No. 28:

A science museum unveiled an exhibit on the cryosphere, inviting visitors to tilt a model Earth beneath a lamp and watch how reflective surfaces cool the planet compared to darker ones. Children delighted in the demonstration, but the curators’ notes threaded a harder truth: the albedo effect that makes ice a planetary parasol also makes its loss a warming accelerant. A panel contrasted two maps—one showing historical multi-year ice extent, the other a recent minimum—prompting conversations not just about physics but about memory: what generations consider “normal” contracts as baselines shift. The exhibit closed with a question rather than a verdict: if the future coastline will be drawn by choices made today, what stories will museums tell our grandchildren about how we measured, modeled, and decided?

The albedo lesson in the exhibit illustrates that  
(A) ice reflects sunlight and helps cool the planet  
(B) darker surfaces increase reflection  
(C) albedo has no effect on temperature  
(D) melting ice decreases absorbed sunlight