Date: _____

Assigned by: _____

Name: _____

PRACTICE 1

The Halifax Explosion

Before the atomic bomb was dropped on Hiroshima in 1945, the largest-ever non-natural explosion had taken place in 1917 in the eastern Canadian port city of Halifax. With the outbreak of World War I, Halifax was effectively transformed into a boomtown. Convoys gathered weekly in Bedford Basin (the north-western end of Halifax Harbour) in order to traverse the Atlantic, and Halifax Harbour became heavy with vessels of one variety or another. This spike in boat traffic was not dealt with efficiently, and collisions became almost normal.

On December 1st, 1917, the French vessel *Mont Blanc* left New York in order to join a convoy in Halifax after being loaded with 226,797 kilograms of TNT (an explosive), 223,188 kilograms of benzol (a type of gasoline), 1,602,519 kilograms of wet picric acid (an explosive), and 544,311 kilograms of dry picric acid (another explosive). On December 6th, the *Mont Blanc* was ushered into Halifax's harbour after the U-boat nets had been raised.

At the same time, the cargoless Norwegian ship, *Imo*, left Bedford Basin en route to New York in order to pick up relief items for transport to war-torn Belgium. *Imo* was behind schedule and attempting to remedy that. She passed a boat on the wrong side before sending a tugboat retreating to port. By the time she reached the Narrows, she was in the wrong channel and going too fast. The *Mont Blanc* sounded her whistle, but the *Imo* sounded back twice, refusing to alter course. At the last moment, the *Mont Blanc* veered, and the *Imo* reversed, but it was too late. From the gash formed in the French boat's hull seeped a noxious spiral of oily, orange-dappled smoke. *Mont Blanc's* crew rowed to shore on the Dartmouth side, but no one could decipher their warnings. Their fiery vessel then casually drifted toward the Halifax side where it came to rest against one of the piers.

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This spectacle drew thousands of onlookers. People crowded docks and windows filled with curious faces. As many as 1,600 died instantly when the boat exploded. Around 9,000 were injured, 6,000 seriously so. Approximately 12,000 buildings were severely damaged; virtually every building in town was damaged to some extent; 1,630 were rendered non-existent. Around 6,000 people were made homeless, and 25,000 people (half the population) were left without suitable housing.

The Halifax Explosion, as it became known, was the largest manmade detonation to date, approximately one-fifth the ferocity of the bomb later dropped on Hiroshima. It sent up a column of smoke reckoned to be 7,000 metres in height. It was felt more than 480 kilometres away. It flung a ship gun barrel some 5.5 kilometres, and part of an anchor, which weighed 517 kilograms, around 3 kilometres. The blast absolutely flattened a district known as Richmond. It also caused a tsunami that saw a wave 18 metres above the high-water mark depositing the Imo onto the shore of the Dartmouth side. The pressure wave of air that was produced snapped trees, bent iron rails, and grounded ships. That evening, a blizzard commenced, and it would continue until the next day, leaving 40 centimetres of snow in its wake. Consequently, many of those trapped within collapsed structures died of exposure. Historians put the death toll of the Halifax Explosion at approximately 2,000.

QUESTIONS 1 - 5

Complete the sentences using **NO MORE THAN THREE WORDS** from the passage for each answer

1. During World War One, Halifax Harbour was unable to handle the increased shipping traffic properly, and there were numerous _____.
2. The Imo was not in the correct _____ and travelling too fast.
3. _____ of people were watching the burning ship when it exploded.
4. The Halifax Explosion had about _____ of the power of the Hiroshima bomb.
5. Freezing weather brought by a blizzard caused the death of some survivors who were _____ under collapsed buildings.

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PRACTICE 2

EVOLUTION OF MUSEUMS

Part A

The very first museums of the world were private collections of objects by wealthy people and institutions. The objects in these museums were displayed in Cabinets of Curiosities, also called Cabinets of Wonder or Wonder Rooms. The word "cabinet" was then used to describe a room and not a piece of furniture. The oldest recorded example of such was the Ennigaldi Nanna's Museum that was located in Mesopotamia. It was founded in 530 BC.

Before the 18th century, only elite or respectable members of society, by the standards of that era, could visit museums with permission from the owner and the staff. The first museums to be opened for the general public were the British Museum in London in 1759 and the Uffizi Gallery in Florence in 1765. However, even though they were no longer exclusive places, only people from the middle and upper class were privileged with a written permission request. Also, the visitations were often limited to a few hours. The first public museum in its true sense was the Louvre in Paris which was opened in 1793 to people of any status and age, emerging as an agent of nationalistic fervour.

In the late nineteenth and early twentieth centuries, societies began to regard museums as centres of the production of new knowledge. Historical museums shifted focus to display scientific discoveries and artistic developments with collections that could be useful for research also. Over the twentieth century, as cities increased in size, wealth, and population, more museums developed. These were shaped by the public response to education and entertainment. Greater funding was directed towards the development of modern museums. Study programs dedicated to the field of art and culture were created to promote the growth of museums, and activities such as the collection and preservation of artifacts such as paintings or sculptures had consequently become more organized. Even wealthy industrialists such as Henry Ford and Henry Mercer contributed their collections leading to the development of more privately run museums.

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Part B

A breeze of change was once again felt in the early 21st century. Museums were no longer anchored to the national ideal and today's new museums attract intellectuals as well as tourists and students. Attitudes toward museums have become more favourable as people no longer view them as boring, cold places that drag you to the past.

One of the main factors that have contributed to this is technology. Modern museums have embraced technology with considerable use of multimedia, digital displays, touch screens as well as other interactive technologies. Some museums, such as the Metropolitan Museum of Art in New York, use technology that allows visitors to see the objects, hear or read about the collection on their smartphones by scanning the artwork. Other national museums have also followed suit by embracing mobile interactivity. The Smithsonian Institution, which is the world's largest museum and research complex containing 19 museums and galleries, provides cell phone tours, interactive games like Pheon, which is a multimedia scavenger hunt game, multilingual slideshows, and even augmented reality apps such as one from the postal museum showing Owney, the mascot of the Railway Mail Service.

Additionally, there are some museums such as the National Museum of African Art that have the Artists in Dialogue 2 app, which allows for visual calls and responses that cut across physical and political borders. The app facilitates a guided tour of the museum with the curator virtually, and also allows the user to experiment with the artistic technique in a virtual art-development game. The user can even communicate with active groups of the museum on social media.

So far, technology has provided modern-day museums with the opportunity to share images and works of art with more people than ever before. However, the conclusion is that technology is enhancing and not replacing the brick-and-mortar museums since technology cannot replace a live experience for the viewer such as live interaction with the experts, emotional reactions, and the physicality of artworks.

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QUESTIONS 6 - 10

Complete the summary below.

Write **ONE WORD ONLY** from **Part A** of the passage for each answer.

The earliest museums displayed personal **6** _____ belonging to rich people, and until the eighteenth century, only the elite class could visit these places. In the latter half of the century, the British Museum and the Uffizi Gallery opened their doors for the **7** _____, but not without restrictions. Finally, in 1793, the Louvre in Paris allowed access irrespective of class and **8** _____ and became a key factor in promoting nationalistic emotions.

By the early twentieth century, museums had started gaining recognition as centers of knowledge. The **9** _____ had moved from history to art and science. During this century, with urbanization and more funds coming in, museums were modified to provide learning as well as **10** _____.

QUESTIONS 11 - 14

Complete the summary based on **Part B** of the passage using the list of words, **A- G**, below.

A - dull	D - tour	F - complementing
B - communication	E – interesting	G - replacing
C – information		

Museums of 21st century

Modern museums have become **11** _____ places to visit with the adoption of various interactive technologies. In the Metropolitan Museum of Art in New York, visitors can get **12** _____ about any artwork by scanning it through their smartphones. The National Museum of African Art provides the opportunity for a virtual **13** _____ with the curator, artists, and social media groups through an app. Thus, the latest technology is **14** _____ the existing museums by giving an enriched experience to the visitors.

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PRACTICE 3

Economic Apartheid

A new report from the World Institute for Development Economics Research of the United Nations University shows that wealth creation is remarkable, one might say, criminally, unequal. Follow this hierarchy at the top of the wealth pyramid: the richest 1 percent of adults alone owned 40 percent of global assets in the year 2000; the richest 2 percent owned more than half of global household wealth, and the richest 10 percent of adults accounted for 85% of the world total. That leaves very little for the remaining 90 percent of the global population. Could it be any worse? Yes, the rich are still getting richer, more millionaires are becoming billionaires.

As to the world's lower class: the bottom half of the world's adult population owned barely 1 percent of global wealth, defined as net worth: the value of physical and financial assets fewer debts. Over a billion poor people subsist on less than one dollar a day. Every day, according to UNICEF, 30,000 children die due to poverty - that's over 10 million children killed by poverty every year! Global economic apartheid is killing people.

Here are data showing some of the variations among nations. Average wealth amounted to $144,000 per person in the U.S. in 2000, not as good as the $181,000 in Japan, but better than most others: $127,000 for the U.K., $70,000 for Denmark, $37,000 for New Zealand, $1,400 in Indonesia and $1,100 in India. Averages, of course, are very deceiving.

The statistical measure of inequality is the Gini value, which measures inequality on a scale from zero (total equality) to one (complete inequality). For income, it ranges from .35 to .45 in most countries. Wealth inequality is usually much higher, typically between .65 and .75. This reflects the greater difficulty in accumulating wealth (capital) than increasing income. Two high wealth economies, Japan and the United States show very different patterns of wealth inequality, with Japan having a low wealth Gini of .55 and the U.S. having around .80. The incomes of the top fifth of the Japanese population are only three times that of the bottom fifth, compared to nine times in the U.S. Japan has little economic apartheid compared to the U.S., yet both countries have a huge number of wealthy people. Of the wealthiest 10 percent in the world, 25 percent are

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American, and 20 percent are Japanese. These two countries are even stronger among the richest 1 percent of individuals in the world, with 37 percent residing in the U.S. and 27 percent in Japan. The point is that despite high numbers of very wealthy people, economic apartheid is absent in Japan and abysmal in the U.S.

We can explain the difference between Japan and the U.S. People can save and accumulate wealth for future economic security or can borrow and spend like mad to accumulate possessions. According to a 2006 report, only 41 percent of American families save regularly, making wealth creation difficult. America's national savings rate - which includes corporate savings and government budget deficits - is only about 13.6% of gross domestic product, compared to 25 percent in Japan.

U.S. economic apartheid shows that a self-proclaimed great democracy with considerable personal freedom can risk deep social instability from class warfare as it approaches a two-class system. We need to see economic apartheid as lethal and repulsive as racial apartheid.

QUESTIONS 15 - 21

Complete the notes below.

Write **NO MORE THAN TWO WORDS AND/ OR A NUMBER** from the passage for each answer.

Global Wealth Distribution

- According to a UN report, the world's wealth distribution is drastically **15** _____
- In 2000, the wealthiest 1% had 40% of global wealth, while 10% owned **16** _____
- In contrast, just 1% of riches was shared by the **17** _____
- More than a billion people survive on less than a dollar daily.
- Poverty causes the death of more than **18** _____ children annually.

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Wealth imbalance among nations:

- In 2000, per capita wealth in Japan and America were $181,000 and $ 144,000 respectively, but a mere $1100 in India.
- Inequality is measured in terms of **19** _____, which ranges from 0 to 1.
- Japan has less **20** _____ than the U.S. though both have a large number of very rich people.
- Americans tend to save less, leading to less wealth accumulation.
- The U.S. example indicates that more **21** _____ can result in serious social imbalance.

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PRACTICE 4

Climate Change and The Inuit

The threat posed by climate change in the Arctic and the problems faced by Canada's Inuit people

A

Unusual incidents are being reported across the Arctic. Inuit families going off on snowmobiles to prepare their summer hunting camps have found themselves cut off from home by a sea of mud, following early thaws. There are reports of igloos losing their insulating properties as the snow drips and refreezes, of lakes draining into the sea as permafrost melts, and sea ice breaking up earlier than usual, carrying seals beyond the reach of hunters. Climate change may still be a rather abstract idea to most of us, but in the Arctic, it is already having dramatic effects – if summertime ice continues to shrink at its present rate, the Arctic Ocean could soon become virtually ice-free in summer. The knock-on effects are likely to include more warming, cloudier skies, increased precipitation and higher sea levels. Scientists are increasingly keen to find out what's going on because they consider the Arctic the 'canary in the mine' for global warming – a warning of what's in store for the rest of the world.

B

For the Inuit the problem is urgent. They live in precarious balance with one of the toughest environments on earth. Climate change, whatever its causes, is a direct threat to their way of life. Nobody knows the Arctic as well as the locals, which is why they are not content simply to stand back and let outside experts tell them what's happening. In Canada, where the Inuit people are jealously guarding their hard-won autonomy in the country's newest territory, Nunavut, they believe their best hope of survival in this changing environment lies in combining their ancestral knowledge with the best of modern science. This is a challenge in itself.

C

The Canadian Arctic is a vast, treeless polar desert that's covered with snow for most of the year. Venture into this terrain and you get some idea of the hardships facing anyone who calls this home. Farming is out of the question and nature offers meagre pickings. Humans first settled in the Arctic a mere 4,500 years ago, surviving by exploiting sea mammals and fish. The environment tested them to

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the limits: sometimes the colonists were successful, sometimes they failed and vanished. But around a thousand years ago, one group emerged that was uniquely well adapted to cope with the Arctic environment. These Thule people moved in from Alaska, bringing kayaks, sleds, dogs, pottery and iron tools. They are the ancestors of today's Inuit people.

D

Life for the descendants of the Thule people is still harsh. Nunavut is 1.9 million square kilometres of rock and ice, and a handful of islands around the North Pole. It's currently home to 2,500 people, all but a handful of them indigenous Inuit. Over the past 40 years, most have abandoned their nomadic ways and settled in the territory's 28 isolated communities, but they still rely heavily on nature to provide food and clothing. Provisions available in local shops have to be flown into Nunavut on one of the costliest air networks in the world, or brought by supply ship during the few ice-free weeks of summer. It would cost a family around £7,000 a year to replace meat they obtained themselves through hunting with imported meat. Economic opportunities are scarce, and for many people state benefits are their only income.

E

While the Inuit may not actually starve if hunting and trapping are curtailed by climate change, there has certainly been an impact on people's health. Obesity, heart disease and diabetes are beginning to appear in a people for whom these have never before been problems. There has been a crisis of identity as the traditional skills of hunting, trapping and preparing skins have begun to disappear. In Nunavut's 'igloo and email' society, where adults who were born in igloos have children who may never have been out on the land, there's a high incidence of depression.

F

With so much at stake, the Inuit are determined to play a key role in teasing out the mysteries of climate change in the Arctic. Having survived there for centuries, they believe their wealth of traditional knowledge is vital to the task. And Western scientists are starting to draw on this wisdom, increasingly referred to as 'Inuit Qaujimajatugangit', or IQ. 'In the early days scientists ignored us when they came up here to study anything. They just figured these people don't know very much so we won't ask them,' says John Amagoalik, an Inuit leader and politician. 'But

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in recent years IQ has had much more credibility and weight.' In fact, it is now a requirement for anyone hoping to get permission to do research that they consult the communities, who are helping to set the research agenda to reflect their most important concerns. They can turn down applications from scientists they believe will work against their interests, or research projects that will impinge too much on their daily lives and traditional activities.

G

Some scientists doubt the value of traditional knowledge because the occupation of the Arctic doesn't go back far enough. Others, however, point out that the first weather stations in the far north date back just 50 years. There are still huge gaps in our environmental knowledge, and despite the scientific onslaught, many predictions are no more than best guesses. IQ could help to bridge the gap and resolve the tremendous uncertainty about how much of what we're seeing is natural capriciousness and how much is the consequence of human activity.

Questions 22 – 28

The reading passage has seven paragraphs, **A-G**.

Choose the correct heading for paragraphs **B-G** from the list of headings below.

Write the correct number, **i-ix** for questions **22 – 28**.

List of Headings

i. The reaction of the Inuit community to climate change
ii. Understanding of climate change remains limited
iii. Alternative sources of essential supplies
iv. Respect for Inuit opinion grows
v. A healthier choice of food
vi. A difficult landscape
vii. Negative effects on well-being
viii. Alarm caused by unprecedented events in the Arctic
ix. The benefits of an easier existence

22. Paragraph **A** _____
23. Paragraph **B** _____
24. Paragraph **C** _____
25. Paragraph **D** _____
26. Paragraph **E** _____
27. Paragraph **F** _____
28. Paragraph **G** _____

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PRACTICE 5

It's Raining Cats

Since the ancient times people marvelled at the fact that cats always manage to land on all four paws no matter the height they fall from. It took scientists a considerable amount of research to explain this phenomenon. Only with the advancement of photography it became possible to find a plausible explanation, when at the end of nineteenth century French physiologist Marei took pictures of falling cats in different stages of their descent. These pictures were later presented to the Academy of Science for further examination. Specifically, it was ascertained that cat's tail which was previously believed to play an important role in the phenomenon doesn't help in any way. The latter was proven by a series of experiments with tail-less animals.

Having debunked the first myth the scientists assumed that cats somehow push off from experimenter's hands to gain momentum which allows to change body position in midair. This technique is somewhat similar to what springboard athletes use. This proposition however got rejected as well, proven wrong by a series of photoshoots. Cats were able to alter their body position even when simply thrown. At the beginning of twentieth century, it became clear that they are able to do so by actively moving their paws and entire body.

At the beginning of their fall a cat moves its body so that the front half is turned to the right. This way the front limbs are moved closer to their head while the rear extremities are drawn as far as they can be. The rear part of cat's body bends toward the opposite direction. It all means that a cat directs its front body part towards the ground, able to see clearly which spot to choose for landing. They part their rear extremities to compensate the inertia of front and rear body.

Finishing their landing, the feline extends its front limbs stopping the body from rotating. Rear extremities gradually reach their final position, the cat assumes a stance that ensures safe landing, bends its back and grounds.

It was also established that if a cat is dropped with its limbs pressed to the body, then it is unable to turn itself upright and land on all fours. As the technology of photo shooting advanced it became possible to observe the process in more detail. Among other findings it was noted that if a cat is propelled upwards with

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its paws facing up then it will keep that stance until reaching the peak of the ascent, at which points it will then start to turn.

Scientists have also observed how cat's fall is affected by its sense organs. If the cat is blindfolded then it will display lower proactivity during the fall. It looks rather odd and awkward, and if the cat in question is put in a spinner prior to being thrown then it confuses up and down, landing on its back. Interestingly, absence of hearing has no apparent impact on the way the cat acts while falling.

Another question on everyone's lips is how cats manage to stay alive after falling from great heights. The answer to this is rather simple — a cat weighs much less than a human at the same time it has greater aerodynamic drag resulting in a rate of fall of about 17 meters per second. To give you an idea how fast or slow that is, a parachute jumper will reach a velocity of almost 50 meters per second. What is more surprising though is that a cat falling off a higher altitude has more chances to stay alive, supposedly because it relaxes its muscles mid-fall, spreading its body to create better aerodynamic resistance.

Some people have tried to imitate the movements of a falling cat to land upright. One of the daring ones was a high-board diver and an Olympic champion Brian Phelps. As it turned out it took the highly-trained man 0,3 seconds to do what cat manages to in just 0,12. Phelps managed to turn his body upright midair after being propelled with his belly pointing down. No other person managed to reproduce said trick.

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Questions 29 – 33

Do the following statements agree with the information given in reading passage?

Write,

TRUE	if the statement agrees with the information
FALSE	if the statement contradicts the information
NOT GIVEN	if there is no information on this

29.A cat will always land on all four legs. _____

30.Cat's aural abilities have no impact on successful landing. _____

31.Even the biggest of falls leave cats uninjured. _____

32.Longer falls increase cat's chances to land on four legs. _____

33.No man managed to imitate cat's landing technique. _____

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PRACTICE 6

Lessons from the Titanic

A From the comfort of our modern lives we tend to look back at the turn of the twentieth century as a dangerous time for sea travellers. With limited communication facilities, and shipping technology still in its infancy in the early nineteen hundreds, we consider ocean travel to have been a risky business. But to the people of the time it was one of the safest forms of transport. At the time of the Titanic's maiden voyage in 1912, there had only been four lives lost in the previous forty years on passenger ships on the North Atlantic crossing. And the Titanic was confidently proclaimed to be unsinkable. She represented the pinnacle of technological advance at the time. Her builders, crew and passengers had no doubt that she was the finest ship ever built. But still, she did sink on April 14, 1912, taking 1,517 of her passengers and crew with her.

B The RMS Titanic left Southampton for New York on April 10, 1912. On board were some of the richest and most famous people of the time who had paid large sums of money to sail on the first voyage of the most luxurious ship in the world. Imagine her placed on her end: she was larger at 269 metres than many of the tallest buildings of the day. And with nine decks, she was as high as an eleven storey building. The Titanic carried 329 first class, 285 second class and 710 third class passengers with 899 crew members, under the care of the very experienced Captain Edward J. Smith. She also carried enough food to feed a small town, including 40,000 fresh eggs, 36,000 apples, 111,000 lbs of fresh meat and 2,200 lbs of coffee for the five-day journey.

C RMS Titanic was believed to be unsinkable because the hull was divided into sixteen watertight compartments. Even if two of these compartments flooded, the ship could still float. The ship's owners could not imagine that, in the case of an accident, the Titanic would not be able to float until she was rescued. It was largely as a result of this confidence in the ship and in the safety of ocean travel that the disaster could claim such a great loss of life.

D In the ten hours prior to the Titanic's fatal collision with an iceberg at 11.40pm, six warnings of icebergs in her path were received by the Titanic's wireless operators. Only one of these messages was formally posted on the bridge; the others were in various locations across the ship. If the combined information in

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