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MID-TERM TEST - READING

TIME ALLOWANCE: 60 minutes

READING PASSAGE 1

You should spend about 20 minutes on **Questions 1-13** which are based on Reading Passage 1 below.

Stepwells

A millennium ago, stepwells were fundamental to life in the driest parts of India. Although many have been neglected, recent restoration has returned them to their former glory. Richard Cox travelled to north-western India to document these spectacular monuments from a bygone era.

During the sixth and seventh centuries, the inhabitants of the modern-day states of Gujarat and Rajasthan in North-western India developed a method of gaining access to clean, fresh groundwater during the dry season for drinking, bathing, watering animals and irrigation. However, the significance of this invention – the stepwell – goes beyond its utilitarian application.

Unique to the region, stepwells are often architecturally complex and vary widely in size and shape. During their heyday, they were places of gathering, of leisure, of relaxation and of worship for villagers of all but the lowest castes. Most stepwells are found dotted around the desert areas of Gujarat (where they are called *vav*) and Rajasthan (where they are known as *baori*), while a few also survive in Delhi. Some were located in or near villages as public spaces for the community; others were positioned beside roads as resting places for travellers.

As their name suggests, stepwells comprise a series of stone steps descending from ground level to the water source (normally an underground aquifer) as it recedes following the rains. When the water level was high, the user needed only to descend a few steps to reach it; when it was low, several levels would have to be negotiated.

Some wells are vast, open craters with hundreds of steps paving each sloping side, often in tiers. Others are more elaborate, with long stepped passages leading to the water via several storeys. Built from stone and supported by pillars, they also included pavilions that sheltered visitors from the relentless heat. But perhaps the most impressive features are the intricate decorative sculptures that embellish many stepwells, showing activities from fighting and dancing to everyday acts such as women combing their hair and churning butter.

Down the centuries, thousands of wells were constructed throughout northwestern India, but the majority have now fallen into disuse; many are derelict and dry, as groundwater has been diverted for industrial use and the wells no longer reach the water table. Their condition hasn't been helped by recent dry spells: southern Rajasthan suffered an eight-year drought between 1996 and 2004.

However, some important sites in Gujarat have recently undergone major restoration, and the state government announced in June last year that it plans to restore the stepwells throughout the state.

In Patan, the state's ancient capital, the stepwell of *Rani Ki Vav* (Queen's Stepwell) is perhaps the finest current example. It was built by Queen Udayamati during the late 11th century, but

LIVEWORKSHEETS

became silted up following a flood during the 13th century. But the Archaeological Survey of India began restoring it in the 1960s, and today it's in pristine condition. At 65 metres long, 20 metres wide and 27 metres deep, *Rani Ki Vav* features 500 distinct sculptures carved into niches throughout the monument, depicting gods such as Vishnu and Parvati in various incarnations. Incredibly, in January 2001, this ancient structure survived a devastating earthquake that measured 7.6 on the Richter scale.

Another example is the *Surya Kund* in Modhera, northern Gujarat, next to the Sun Temple, built by King Bhima I in 1026 to honour the sun god Surya. It's actually a tank (*kund* means reservoir or pond) rather than a well, but displays the hallmarks of stepwell architecture, including four sides of steps that descend to the bottom in a stunning geometrical formation. The terraces house 108 small, intricately carved shrines between the sets of steps.

Rajasthan also has a wealth of wells. The ancient city of Bundi, 200 kilometres south of Jaipur, is renowned for its architecture, including its stepwells. One of the larger examples is *Raniji Ki Baori*, which was built by the queen of the region, Nathavatji, in 1699. At 46 metres deep, 20 metres wide and 40 metres long, the intricately carved monument is one of 21 *baoris* commissioned in the Bundi area by Nathavatji.

In the old ruined town of Abhaneri, about 95 kilometres east of Jaipur, is *Chand Baori*, one of India's oldest and deepest wells; aesthetically, it's perhaps one of the most dramatic. Built in around 850 AD next to the temple of Harshat Mata, the baori comprises hundreds of zigzagging steps that run along three of its sides, steeply descending 11 storeys, resulting in a striking geometric pattern when seen from afar. On the fourth side, covered verandas supported by ornate pillars overlook the steps.

Still in public use is *Neemrana Ki Baori*, located just off the Jaipur–Dehli highway. Constructed in around 1700, it's nine storeys deep, with the last two levels underwater. At ground level, there are 86 colonnaded openings from where the visitor descends 170 steps to the deepest water source.

Today, following years of neglect, many of these monuments to medieval engineering have been saved by the Archaeological Survey of India, which has recognised the importance of preserving them as part of the country's rich history. Tourists flock to wells in far-flung corners of northwestern India to gaze in wonder at these architectural marvels from 1,000 years ago, which serve as a reminder of both the ingenuity and artistry of ancient civilisations and of the value of water to human existence.

Questions 1–5

Do the following statements agree with the information given in Reading Passage 1?
*In boxes **1–5** on your answer sheet, 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

1 Examples of ancient stepwells can be found all over the world.

2 Stepwells had a range of functions, in addition to those related to water collection.

3 The few existing stepwells in Delhi are more attractive than those found elsewhere.

4 It took workers many years to build the stone steps characteristic of stepwells.

5 The number of steps above the water level in a stepwell altered during the course of a year.

LIVEWORKSHEETS

Questions 6–8
Answer the questions below.
Choose **ONE WORD ONLY** from the passage for each answer.
*Write your answers in boxes **6–8** on your answer sheet.*

6 Which part of some stepwells provided shade for people?

7 What type of serious climatic event, which took place in southern Rajasthan, is mentioned in the article?

8 Who are frequent visitors to stepwells nowadays?

Questions 9-13
Complete the table below
Choose **ONE WORD AND/OR A NUMBER** from the passage for each answer.
*Write your answers in boxes **9-13** on your answer sheet.*

Stepwells	Date	Features	Other notes
Rani Ki Vav	Late 11th century	As many as 500 sculptures decorate the monument	Restored in the 1990s Excellent condition, despite the **9**..... of 2001.
Surya Kund	1026	Steps on the **10**..... produce a geometric pattern Carved shrines.	Looks more like a **11**..... than a well.
Raniji Ki Baori	1699	Intricately carved monument	One of 21 *baoris* in the area commissioned by Queen Nathavatji
Chand Baori	850 AD	Steps take you down 11 storeys to the bottom	Old, deep and very dramatic Has **12**..... which provide a view to the steps.
Neemrana Ki Baori	1700	Has two **13**..... levels.	Used by public today

LIVEWORKSHEETS

READING PASSAGE 2

You should spend about 20 minutes on **Questions 1-13** which are based on Reading Passage 1 below.

The megafires of California

Drought, housing expansion, and oversupply of tinder make for bigger, hotter fires in the western United States

Wildfires are becoming an increasing menace in the western United States, with Southern California being the hardest hit area. There's a reason fire squads battling more frequent blazes in Southern California are having such difficulty containing the flames, despite better preparedness than ever and decades of experience fighting fires fanned by the 'Santa Ana Winds'. The wildfires themselves, experts say, are generally hotter, faster, and spread more erratically than in the past.

Megafires, also called 'siege fires', are the increasingly frequent blazes that burn 500,000 acres or more – 10 times the size of the average forest fire of 20 years ago. Some recent wildfires are among the biggest ever in California in terms of acreage burned, according to state figures and news reports.

One explanation for the trend to more superhot fires is that the region, which usually has dry summers, has had significantly below normal precipitation in many recent years. Another reason, experts say, is related to the century- long policy of the US Forest Service to stop wildfires as quickly as possible.

The unintentional consequence has been to halt the natural eradication of underbrush, now the primary fuel for megafires.

Three other factors contribute to the trend, they add. First is climate change, marked by a 1-degree Fahrenheit rise in average yearly temperature across the western states. Second is fire seasons that on average are 78 days longer than they were 20 years ago. Third is increased construction of homes in wooded areas.

'We are increasingly building our homes in fire-prone ecosystems,' says Dominik Kulakowski, adjunct professor of biology at Clark University Graduate School of Geography in Worcester, Massachusetts. 'Doing that in many of the forests of the western US is like building homes on the side of an active volcano.'

In California, where population growth has averaged more than 600,000 a year for at least a decade, more residential housing is being built. 'What once was open space is now residential homes providing fuel to make fires burn with greater intensity,' says Terry McHale of the California Department of Forestry firefighters' union. 'With so much dryness, so many communities to catch fire, so many fronts to fight, it becomes an almost incredible job.'

That said, many experts give California high marks for making progress on preparedness in recent years, after some of the largest fires in state history scorched thousands of acres, burned thousands of homes, and killed numerous people. Stung in the past by criticism of bungling that allowed fires to spread when they might have been contained, personnel are meeting the peculiar challenges of neighborhood – and canyon- hopping fires better than previously, observers say.

State promises to provide more up-to-date engines, planes, and helicopters to fight fires have been fulfilled. Firefighters' unions that in the past complained of dilapidated equipment, old fire engines, and insufficient blueprints for fire safety are now praising the state's commitment, noting that funding for firefighting has increased, despite huge cuts in many other programs. 'We are pleased that the current state administration has been very proactive in its support of us, and [has] come through with budgetary support of the infrastructure needs we have long sought,' says Mr. McHale of the firefighters' union.

Besides providing money to upgrade the fire engines that must traverse the mammoth state and wind along serpentine canyon roads, the state has invested in better command-and-control

LIVEWORKSHEETS

facilities as well as in the strategies to run them. 'In the fire sieges of earlier years, we found that other jurisdictions and states were willing to offer mutual-aid help, but we were not able to communicate adequately with them,' says Kim Zagaris, chief of the state's Office of Emergency Services Fire and Rescue Branch.

After a commission examined and revamped communications procedures, the statewide response 'has become far more professional and responsive,' he says. There is a sense among both government officials and residents that the speed, dedication, and coordination of firefighters from several states and jurisdictions are resulting in greater efficiency than in past 'siege fire' situations.

In recent years, the Southern California region has improved building codes, evacuation procedures, and procurement of new technology. 'I am extraordinarily impressed by the improvements we have witnessed,' says Randy Jacobs, a Southern California- based lawyer who has had to evacuate both his home and business to escape wildfires. 'Notwithstanding all the damage that will continue to be caused by wildfires, we will no longer suffer the loss of life endured in the past because of the fire prevention and firefighting measures that have been put in place,' he says.

Questions 1-6

Complete the notes below.

Choose **ONE WORD AND/OR A NUMBER** from the passage for each answer.

*Write your answers in boxes **1-6** on your answer sheet.*

Wildfires

- Characteristics of wildfires and wildfire conditions today compared to the past:

– occurrence: more frequent
– temperature: hotter
– speed: faster
– movement: **1**……. more unpredictably
– size of fires: **2**……. greater on average than two decades ago

- Reasons wildfires cause more damage today compared to the past:

– rainfall: **3**……. average
– more brush to act as **4**……..
– increase in yearly temperature
– extended fire **5**……..
– more building of **6**……. in vulnerable places

Questions 7-13

Do the following statements agree with the information given in Reading Passage?

*In boxes **7-13** on your answer sheet, 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

7 The amount of open space in California has diminished over the last ten years.
8 Many experts believe California has made little progress in readying itself to fight fires.
9 Personnel in the past have been criticised for mishandling fire containment.
10 California has replaced a range of firefighting tools.
11 More firefighters have been hired to improve fire-fighting capacity.
12 Citizens and government groups disapprove of the efforts of different states and agencies working together.
13 Randy Jacobs believes that loss of life from fires will continue at the same levels, despite changes made.

LIVEWORKSHEETS

READING PASSAGE 3

You should spend about 20 minutes on **Questions 1-13** which are based on Reading Passage 1 below.

Crop-growing skyscrapers

By the year 2050, nearly 80% of the Earth's population will live in urban centres. Applying the most conservative estimates to current demographic trends, the human population will increase by about three billion people by then. An estimated 109 hectares of new land (about 20% larger than Brazil) will be needed to grow enough food to feed them, if traditional farming methods continue as they are practised today. At present, throughout the world, over 80% of the land that is suitable for raising crops is in use. Historically, some 15% of that has been laid waste by poor management practices. What can be done to ensure enough food for the world's population to live on?

The concept of indoor farming is not new, since hothouse production of tomatoes and other produce has been in vogue for some time. What is new is the urgent need to scale up this technology to accommodate another three billion people. Many believe an entirely new approach to indoor farming is required, employing cutting-edge technologies. One such proposal is for the 'Vertical Farm'. The concept is of multi-storey buildings in which food crops are grown in environmentally controlled conditions. Situated in the heart of urban centres, they would drastically reduce the amount of transportation required to bring food to consumers. Vertical farms would need to be efficient, cheap to construct and safe to operate. If successfully implemented, proponents claim, vertical farms offer the promise of urban renewal, sustainable production of a safe and varied food supply (through year-round production of all crops), and the eventual repair of ecosystems that have been sacrificed for horizontal farming.

It took humans 10,000 years to learn how to grow most of the crops we now take for granted. Along the way, we despoiled most of the land we worked, often turning verdant, natural ecozones into semi-arid deserts. Within that same time frame, we evolved into an urban species, in which 60% of the human population now lives vertically in cities. This means that, for the majority, we humans have shelter from the elements, yet we subject our food-bearing plants to the rigours of the great outdoors and can do no more than hope for a good weather year. However, more often than not now, due to a rapidly changing climate, that is not what happens. Massive floods, long droughts, hurricanes and severe monsoons take their toll each year, destroying millions of tons of valuable crops.

The supporters of vertical farming claim many potential advantages for the system. For instance, crops would be produced all year round, as they would be kept in artificially controlled, optimum growing conditions. There would be no weather-related crop failures due to droughts, floods or pests. All the food could be grown organically, eliminating the need for herbicides, pesticides and fertilisers. The system would greatly reduce the incidence of many infectious diseases that are acquired at the agricultural interface. Although the system would consume energy, it would return energy to the grid via methane generation from composting nonedible parts of plants. It would also dramatically reduce fossil fuel use, by cutting out the need for tractors, ploughs and shipping.

A major drawback of vertical farming, however, is that the plants would require artificial light. Without it, those plants nearest the windows would be exposed to more sunlight and grow more quickly, reducing the efficiency of the system. Single-storey greenhouses have the benefit of natural overhead light; even so, many still need artificial lighting.

A multi-storey facility with no natural overhead light would require far more. Generating enough light could be prohibitively expensive, unless cheap, renewable energy is available, and this appears to be rather a future aspiration than a likelihood for the near future.

LIVEWORKSHEETS

One variation on vertical farming that has been developed is to grow plants in stacked trays that move on rails. Moving the trays allows the plants to get enough sunlight. This system is already in operation, and works well within a single-storey greenhouse with light reaching it from above: it Is not certain, however, that it can be made to work without that overhead natural light.
Vertical farming is an attempt to address the undoubted problems that we face in producing enough food for a growing population. At the moment, though, more needs to be done to reduce the detrimental impact it would have on the environment, particularly as regards the use of energy. While it is possible that much of our food will be grown in skyscrapers in future, most experts currently believe it is far more likely that we will simply use the space available on urban rooftops.

Questions 1-7
Complete the sentences below.
Choose **NO MORE THAN TWO WORDS** from the passage for each answer.
*Write your answers in boxes **1-7** on your answer sheet.*

Indoor farming

1 Some food plants, including…… are already grown indoors.

2 Vertical farms would be located in……, meaning that there would be less need to take them long distances to customers.

3 Vertical farms could use methane from plants and animals to produce……..

4 The consumption of…… would be cut because agricultural vehicles would be unnecessary.

5 The fact that vertical farms would need…….. light is a disadvantage.

6 One form of vertical farming involves planting in…….. which are not fixed.

7 The most probable development is that food will be grown on…… in towns and cities.

Questions 8-13
Do the following statements agree with the information given in Reading Passage?
*In boxes **8-13** on your answer sheet, 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

8 Methods for predicting the Earth's population have recently changed.

9 Human beings are responsible for some of the destruction to food-producing land.

10 The crops produced in vertical farms will depend on the season.

11 Some damage to food crops is caused by climate change.

12 Fertilisers will be needed for certain crops in vertical farms.

13 Vertical farming will make plants less likely to be affected by infectious diseases.

LIVEWORKSHEETS