

PART 1: READING

(10 Marks)

Read the text below and answer the questions that follow:

Bridges

There's something about bridges that I love. From simple stepping stones across a stream to giant overpasses linking continents, they have always been important to civilisation. And since the first Bronze Age river crossings, the objective of bridge building hasn't changed: to get to the other side. It's as simple as that. They're a natural part of everyday life. Bridges are used to cross a variety of obstacles whether a river, a sea, a valley, a road, or a railway line. My most memorable holidays are always associated with bridges: seeing San Francisco's Golden Gate swathed in fog, walking from Zimbabwe across the mighty Zambezi to Zambia, negotiating rickety bamboo bridges in Asia, the Sydney Harbour Bridge, and the wonderful Friendship Bridge connecting Thailand and Laos over the Mekong River. There are three main types of bridges: the beam, the arch and the suspension bridge.



Which bridge when?

Choosing the design of a bridge primarily depends on how wide the obstacle is – is it a small road or an enormous river? The main difference between the three main types of bridges is the distances they can cross in a single span. This means the distance between one vertical support to another. Some bridges can cross an obstacle in a single span, while others need many. If an enormous river is to be crossed, a bridge is needed that doesn't need too many supports. Another consideration of course is the types of material available to be used as well as the overall look of the bridge.

The beam bridge

The beam bridge is basically a rigid horizontal structure that rests on two piers (or supports), one at each end. The weight of the beam pushes straight down on the piers. The further apart the piers, the weaker the beam becomes. Next time you're on a journey, look out for these bridges crossing motorways. They're usually made of concrete or steel. Beam bridges rarely span more than 60m.

The arch bridge

It is the shape of the structure that gives the arch bridge its strength; they're a natural form of bridge. That's why they're so beautiful. An arch bridge doesn't need any additional supports or cables. In fact, an arch bridge made of stone doesn't even need mortar. Imagine that! There are still many arch bridges built by the Romans 2,000 years ago, without mortar, which are still standing today, real proof of the natural effectiveness of an arch as a bridge structure. Modern arch bridges can span up to 300m.

The suspension bridge

But surely the most elegant and sophisticated of all bridges is the suspension bridge. Modern suspension bridges usually have two tall towers (the supports) joined by cables (or ropes or chains). The bridges hang from these cables. This means it is the towers that are supporting the majority of the bridge's weight. These bridges can have the longest spans – up to 2,000m. The main span of the incredible Akashi-Kaikyo Bridge in Japan is 1,991m.

Resonance

However beautiful the design or sophisticated the technology, bridges still fall down. Resonant vibrations, for example, can be fatal to a bridge. In 1940 a 65kph wind hit the Tacoma Narrows Bridge in Washington, USA, the third longest suspension bridge in the world at the time. This was just the right speed of wind hitting the bridge at just the right angle to cause the bridge to start vibrating. The vibrations caused waves which grew so large and violent that the bridge broke apart.

When an army marches across a bridge, the soldiers are often asked to 'break step'. This is to prevent their rhythmic marching from starting resonant vibrations that could cause the bridge to sway and undulate until it collapsed.

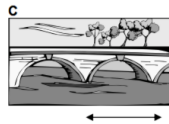
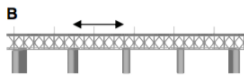
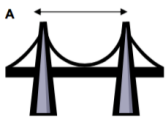
A recent case was the so-called 'wobbly bridge' in London. Some 80,000 people crossed the bridge on its opening day and those on the southern and central spans detected vibrations. The bridge began to sway and twist in regular oscillations. The pedestrians then altered their walking so as to be in step with the swaying and this made matters worse. The adjusted footsteps magnified the motion - just like when four people all stand up in a small boat at the same time. The bridge was then closed for several months for repairs. The bridge uses "lateral suspension", an engineering innovation that allows suspension bridges to be built without tall supporting columns.

The weather

This is the last battle for bridge designers. Although the latest designs and materials can produce state of the art bridges the weather can still cause problems. Cases of weather related failures, for example windstorms, far outnumber those of design-related failures. As yet there is no effective solution either in terms of a specific construction material or in bridge design. And I like that: the idea that we can build the most wonderfully sophisticated buildings but Mother Nature still has the upper hand.

A: UNDERSTANDING THE READING

1. Where is the longest bridge in the world? _____
2. How long is it? _____
3. Identify which type of bridge is which from the pictures:



- Picture A =
- Picture B =
- Picture C =

4. What material did the Romans use to make bridges? _____
5. Where is the 'wobbly bridge'? _____
6. Which force of nature does the writer suggest is the most difficult for bridge builders? _____

7. 'Resonance' means:

- a. beauty b. vibration c. violence d. swaying

8. 'Suspend' means:

- a. support b. span c. weight d. hang

9. Is the topic sentence of the fifth paragraph ...

- a. opinion b. fact c. both opinion and fact d. neither opinion nor fact

10. Is the controlling idea of the sixth paragraph ...

- a. opinion b. fact c. both opinion and fact d. neither opinion nor fact

PART 2: PARAGRAPH TYPES AND STRUCTURE**(10 Marks)**

Read the following 11-sentence paragraphs and answer the questions that follow:

PARAGRAPH 1:

The small second-floor apartment I lived in when I first left home to go to university had only one room, which was divided into three areas. At one end of it was a tiny kitchenette, where I cooked my meals. The stove had just two burners and the oven had only one temperature - very hot - so more often than not I would pick up a pizza, a burger or fish and chips on my way home from college. In front of the cooker, between the door and the fridge, there was a basic table with two chairs where I would sit and eat while listening to the radio. My living/sleeping area was at the opposite end. I had just enough space for a sofa that was also my bed, an antique floor lamp and an ancient television that flickered on and off because of the weak signal from the indoor ariel. Luckily, my studies kept me so busy I rarely had time to relax and watch TV. My study area was against the wall under the one window that looked out onto the street below. I call it a study area but it was just a cheap desk on which stood my typewriter and a pile of books. There wasn't even a proper chair so I had to use one of the dining chairs. The apartment was so cramped, I had to move between the three areas by walking sideways!

PARAGRAPH 2:

Getting oil from the ground to the tank of your car involves a number of processes. First, a source of oil is located deep under the ground. It is then pumped through a pipeline to be collected and stored in large tanks. At this stage the oil is referred to as 'crude'. During the second stage in the process, the oil is turned from its crude state into various refined products, which are again stored in tanks. One of these products is the petrol you put in your car's petrol tank. Before you can buy it, however, there is one more link in the chain. The final part of the process involves transporting the refined petrol to petrol stations. At the petrol station, the petrol is stored in underground tanks which feed the pumps from which you buy your petrol. There are different grades of petrol to choose from according to they type of fuel your vehicle runs on. So, now you know that the petrol that helps you on your way has already been on quite a long journey itself!

11. How many sentences does each paragraph have?

(a) Paragraph 1 has _____ sentences. (½ Mark)

(b) Paragraph 2 has _____ sentences. (½ Mark)

12. What type of paragraph is each one, Effect, Descriptive, Contrast, Reason or Process?

(a) Paragraph 1 is a _____ paragraph. (½ Mark)

(b) Paragraph 2 is a _____ paragraph. (½ Mark)

13. In Paragraph 1, which sentence is the Topic Sentence (give the sentence number)?

In Paragraph 1, sentence number _____ is the Topic Sentence. (½ Mark)

14. In Paragraph 2, which sentences are the Main Support sentences (give the sentence numbers)?

In Paragraph 2, sentence numbers _____, _____ and _____ are the Main Support sentences. (1½ Marks)

15. In Paragraph 1, which two sentences are the Detail sentences for the final Main Support sentence (give the sentence numbers)?

In Paragraph 1, sentence numbers _____ and _____ are the Detail sentences for the final Main Support sentence (1 Mark)

16. The following two paragraphs do not have Topic Sentences or Concluding Sentences. Write both a good Topic Sentence, with a clear Controlling Idea, and a Concluding Sentence for each paragraph in the spaces provided:

PARAGRAPH 1

(2½ Marks)

_____. People may lose their job and need to find a new one. They may be unhappy in a current job and choose to try a different career. Or, they might currently be thinking about going to school and need to decide what area to study. _____

PARAGRAPH 2

(2½ Marks)

_____. A nurse must have respect for others and must patiently listen to all the complaints of her patients. A nurse must be able to think quickly on her feet in case an emergency suddenly arises. It is important for a nurse to be knowledgeable about health and wellness and demonstrate healthy behaviour. _____

PART 3: WRITING

(10 Marks)

17. On the following page, write **either: (i)** an 11-sentence paragraph describing your bedroom; **or (ii)** an 11-sentence paragraph describing Bahrain National Day celebrations. Your paragraph should have the following qualities and characteristics:

- (i) a title
- (ii) a topic sentence with controlling idea
- (iii) main support and detail sentences
- (iv) a concluding sentence
- (v) accurate use of transitions
- (vi) accurate sentence structure
- (vii) correct use of tenses
- (viii) accurate use of verb forms
- (ix) accurate spelling
- (x) accurate punctuation

