



# Noah's Ark Independent Primary School

Subject: Technology	Examiner: Moyo, S.
Type: Mid-Year Exams	Moderator: Rwizi, A.
Date: 22 June 2021	Grade: 7-Springbok
Marks: 60 Marks	Time: 1 hour 30 minutes

Name: \_\_\_\_\_

## Instructions

Carefully read all the questions before you start writing.

Answer ALL the questions in the spaces provided.

Write neatly and legibly

## Section A: Structures

### Question 1

1.1 Compare the landline and cellular telephone systems in a table below. Write one point for each. (4)

	Landline	Cellular
Economic effects		
Environmental effects		

## Question 2

The BlackBerry Curve 8900 is a BlackBerry mobile phone developed by Research in Motion.

The device is an upgrade over the older 8300 model, with the most significant differences being a 3.2 Megapixel camera with video Camera, a micro-USB port, Wi-Fi, and an upgraded operating system with a more modern design. Initial release was in February 2009 on T-Mobile but was later released on AT&T as well. This phone is known as BlackBerry Javelin in Asia. The 8910 is identical except for the removal of Wi-Fi to comply with Chinese regulations at the time. The 8980 design is radically different from the 8900 or 8910; its design is virtually identical to the BlackBerry Bold 9700/9780/9788 series but lacking 3G capabilities; the 8980's keyboard is the typical Curve 'chicklet'.

While not as positive as for other BlackBerry phones, the reviews of the Curve 8900 were mostly positive with praise for the improvements made over previous models but criticism for the lack of 3G and a relatively slow processor. The 8900 was also praised for its new, stylish and confident look. Also, the model was not as durable as other BlackBerry devices.

Source: en.wikipedia.org/wiki/BlackBerry\_Curve\_9300#Curve\_9300\_Serie

Source: Oxford Successful, Grade 7 Technology Learner's Book, page 68

2.1 Write a design brief with the specifications for this product. (2)

---

---

---

---

---

## Question 3

Write a term for each of the following definitions. (3)

3.1 A rod or bar forming part of a framework and designed to resist compression. \_\_\_\_\_

3.2 The state of being stable. \_\_\_\_\_

3.3 Being stretched tight. \_\_\_\_\_

## Question 4

4.1 Explain using examples the difference between frame and shell structures. (4)

---

---

---

---




---

---

---

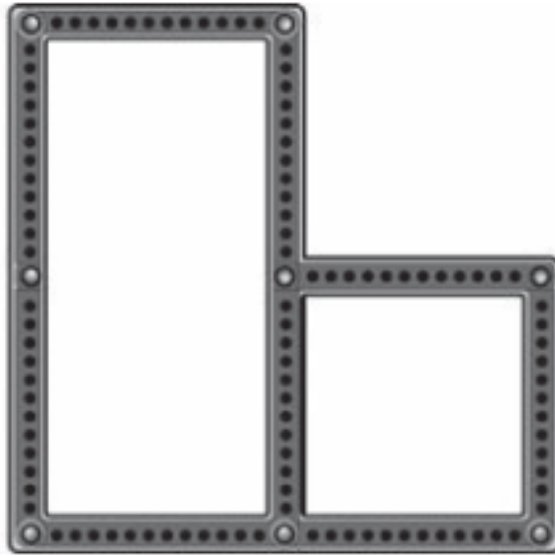
## Question 5

Identify the type of structure by looking at the images below: Name the object and say whether it is natural or man-made. (6)

Image			
Name of image			
Natural or man-made			

## Question 6

Modify the shape below so that it becomes more stable and rigid. (3)



## Question 7

Cell phone towers are designed to transmit signals so that the cell phone users can talk to each other. When you design such a tower, there are several issues to consider. Discuss each of the following issues:

7.1 Visual pollution (2)

---

---

---

---

7.2 Base size (2)

---

---

---

---

Question 8

Differentiate between beam and tie beam

(4)

---

---

---

---

Section B: Design process, mechanical systems and control

Question 9

9.1 Another name for fulcrum is \_\_\_\_\_.

(1)

9.2 Explain what is meant by mechanical advantage.

(1)

---

---

---

---

Question 10

Describe and explain any two different types of lines used by engineers when producing detailed drawings that will be used to manufacture a product.

(6)

---

---

---

---

---

---

---

---

---

---

Question 11

Describe the difference between design specifications and design constraints. (4)

---

---

---

Question 12

A friend of yours works for long hours and wants to make sure that his dogs have enough water throughout the hot summer days. He asks you to design a feeder for him.

12.1 Suggest two ways to ensure that the product you design and make for him is safe and will not hurt the intended user. Give reasons for your answer. (5)

---

---

---

---

---

Question 13

13.1 What is freehand sketching. (2)

---

---

13.2 Give four advantages of freehand sketching. (4)

---

---

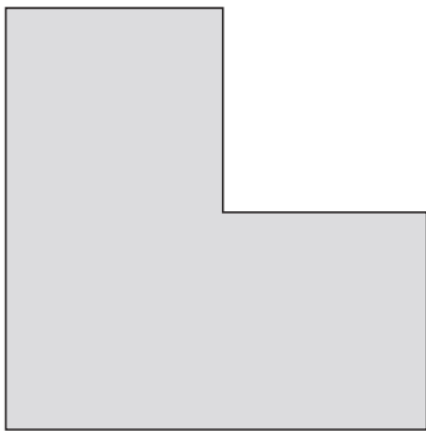
---

---

Question 13

Re-draw Figure 1, the letter L, in single vanishing point perspective.

(7)



Source: Platinum Grade 7 Technology Extension and Remediation Worksheet Book, Target Worksheet B

\_\_\_\_\_ / 60 Marks TOTAL