



SASTRI COLLEGE
DEPARTMENT OF MATHEMATICS, TECHNOLOGY AND
ENGINEERING DRAWING AND GRAPHIC DESIGN
JUNE EXAMINATIONS 2018
TECHNOLOGY – GRADE 8



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MODERATOR:
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MARKS:100

Duration : $1\frac{1}{2}$ Hours

Instructions:

1. This paper consists of 6 questions and 4 pages.
2. Write neatly and legibly
3. Write your name and grade on Page 4. Remove and Place inside answer book

Question One:

Match the correct terms from column B with the correct statement from column A. Write down the question number and next to it the letter of the correct answer.

NO.	Column A	Column B
1.1	Changing a material from one form to another.	A) Investigating
1.2	Non-renewable resource used to make plastic.	B) King post
1.3	Another term for man-made.	C) cam
1.4	Source of leather as a raw material.	D) Isometric
1.5	Industries that process raw materials.	E) Orthographic
1.6	3D drawing.	F) Synthetic
1.7	2D drawing.	G) Secondary industry
1.8	Finding out information about a given topic.	H) Processing
	Provides stability in a roof truss.	I) Animals
1.10	Changes linear motion into rotor motion.	J) Plants

[10]

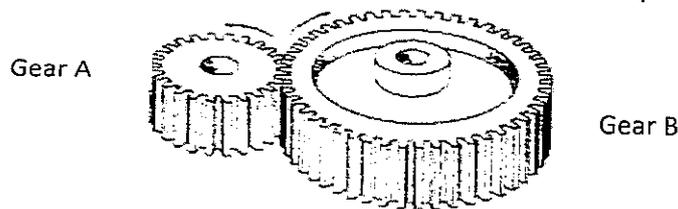
Question Two

Components of a roof truss and pylons.

- 2.1 List three types of pylons that you see every day. (3)
- 2.2 Choose 1 type from the list of 3 above (2.1) and list 3 specifications of this type of pylon. (6)
- 2.3 Draw a small sketch of a 2-DIMENSIONAL roof truss, your sketch should include the following components : Queen post, tie-beam and rafters. (4)
- 2.4 List two advantages of a queen post as part of your roof truss components? (4)
- 2.5 List at least two types of forces that this drawing in 2.3 above would be able to counteract? (2)
- 2.6 How would you rearrange your drawing to now produce a king post roof truss component? (2)

[22]

Question Three: study the following sets of gears below and answer the questions that follow.



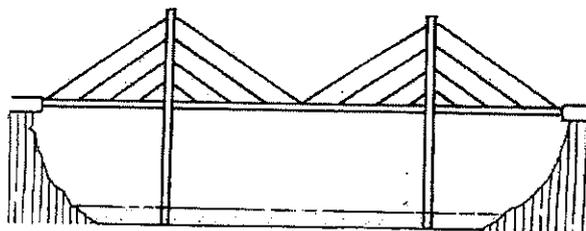
- 3.1 What is the general direction of gear B? (1)
- 3.2 Explain what is meant by the term counter-rotation? (3)
- 3.3 Which mechanism must you include in order to make gear A and B to rotate in the same direction? (2)
- 3.4 Calculate the mechanical advantage and the gear ratio of these two given gears. (5)
- 3.5 If the gear ratio of driven : driver for two particular gears are 1:3 and the driver gear has 90 teeth, how many teeth will the driven gear have? (2)
- 3.6 Give at least 3 mechanisms that include gear trains internally? (3)

[16]

Question Four

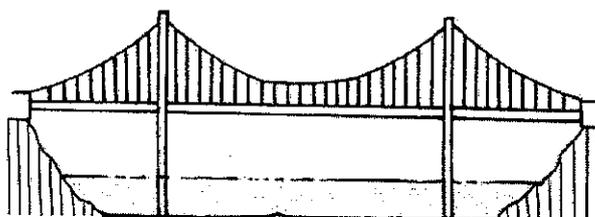
Study figure A, which represents a specific type of bridge and answer the questions that follow.

Figure A



- 4.1 What type of bridge is represented by figure A? (2)
- 4.2 State three advantages of this type of bridge. (6)
- 4.3 How is the force distributed in this type of bridge? (3)
- 4.4 Suppose that you want to make figure A look like figure B below:

Figure B



- 4.4.1 What physical changes must be made to figure A? (3)
- 4.4.2 How is force distributed in this type of bridge? (2)
- 4.4.3 Which type of bridge can withstand more force? (2)

QUESTION FIVE:

Read case study 3 below on how Technology in our daily lives has a negative impact on us.

Case Study 3: Technological product with a negative impact: Cell phones

The cell phone industry continues to grow. The invention of the cell phone improved communication. At the press of a button people can communicate with people all over the world.

This increased ability to communicate can be seen as progress has some negative impacts.

It has been suggested that prolonged and constant use of a cell phone can cause health problems.

Another problem is anti-social "behaviour of cell phone users. People often spend a lot of time texting and talking on the phone during important family times. This anti-social behaviour also happens in public places.

People send messages or play with their phones during social occasions and meetings instead of interacting with others.

Talking on cell phones while driving is very dangerous and can cause accidents leading to injury and death.

There is also a problem of waste disposal. When people get rid of their old outdated sell phones, the environment is badly affected because cell phones are not biodegradable. In South Africa more than 10 million cell phones are thrown away every year. When they are thrown into landfill sites, poisonous chemicals in the cell phone battery dissolve and contaminate" the soil. These poisonous substances then leak into and pollute groundwater.

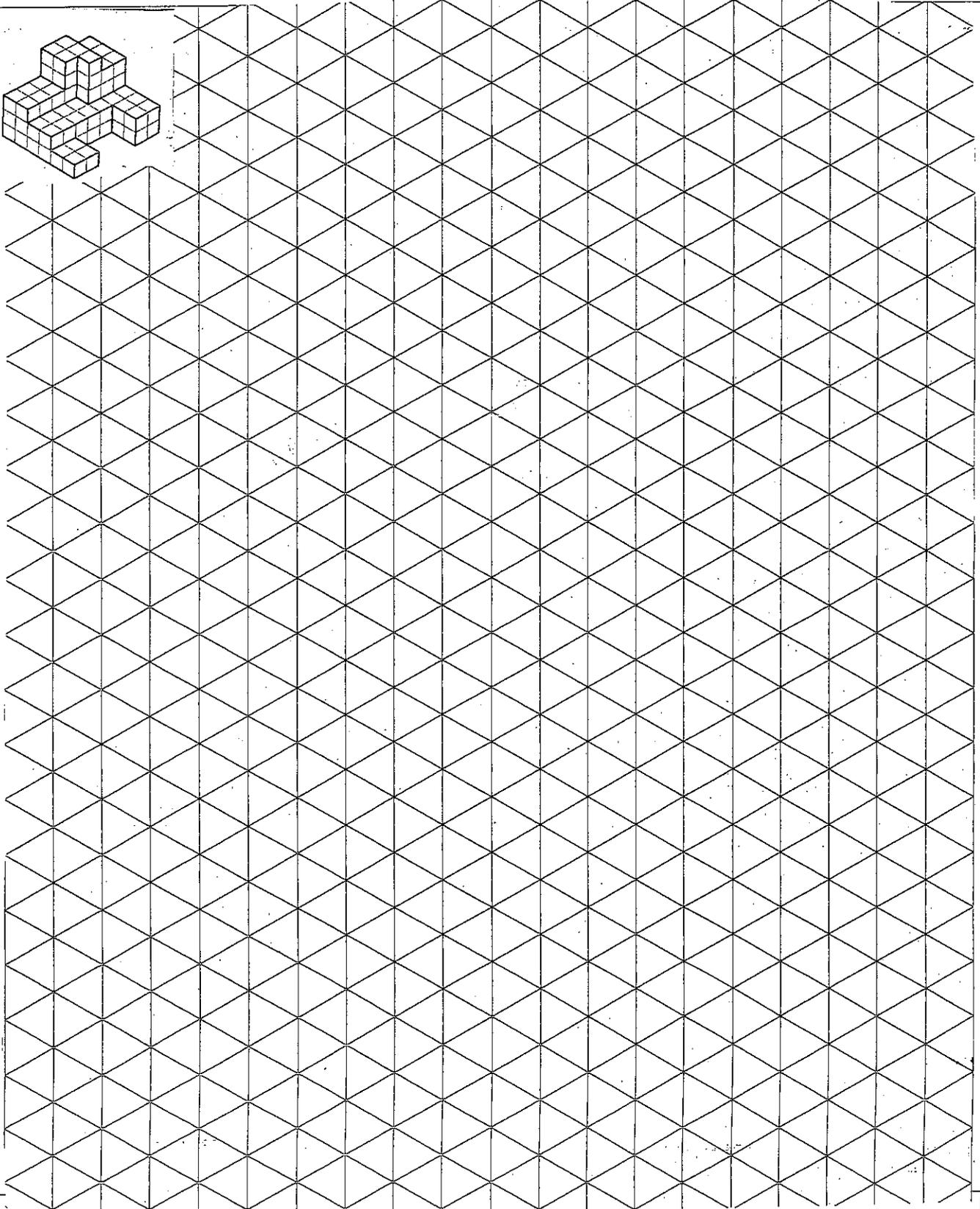
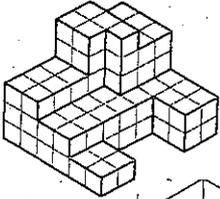
- 5.1 How have cell phones improved our lives? (3)
- 5.2 List three negative impacts of cell phones. (6)
- 5.3 Why do many people get rid of their cell phones while they are still in working order? (2)
- 5.4 How can used and unwanted cell phones be recycled? Suggest two environmentally friendly ways (3)
- [14]

QUESTION SIX

ISOMETRIC PROJECTION: Copy the following isometric drawing on the grid provided.

NAME : _____ Grade 8 _____

REMOVE AND PLACE INSIDE ANSWERBOOK



[10]