

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

Grade 9 ( )



Hillcrest High School

GRADE 9 - TECHNOLOGY EXAM

June 2021

TIME: 1 hours

TOTAL: 60 marks

Examiner: Mrs Stols

Moderator: Mrs Tonkin

QUESTION PAPER

**NB: READ THE INTRUCTIONS**

1. This paper consists of 6 pages, and 5 questions.
2. Ensure that you have answered ALL questions.
3. Take note of the mark allocation in each question.
4. Write in a neat and clear handwriting.

2.2. \_\_\_\_\_ slows the forward motion and stops a bicycle. (1)

- A Brake lever
- B Brake cable
- C Brake callipers
- D All of the above.

2.3. A bicycle is an integrated system using \_\_\_\_\_. (1)

- A Wheels and axles, levers
- B Gears, wheel axles, levers
- C Chain and sprocket, levers, wheels and axles
- D Levers, pulleys, gears, wheels

2.4. Grooved wheels attached to each other by a rope or cable are known as \_\_\_\_\_. (1)

- A Cams.
- B Pulleys.
- C Gears.
- D Levers:

2.5. \_\_\_\_\_ states that PRESSURE exerted on one part of a HYDRAULIC SYSTEM will be transferred equally in all directions to other parts of the system without any loss. (1)

- A Pressure
- B Pascal's principle
- C Hydraulic system
- D Closed system

2.6) Explain the difference between the following:

2.6.1) Even and uneven loads (4)

Even loads:

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Uneven loads:

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2.6.2) Static and dynamic loads (4)

Static:

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Dynamic loads:

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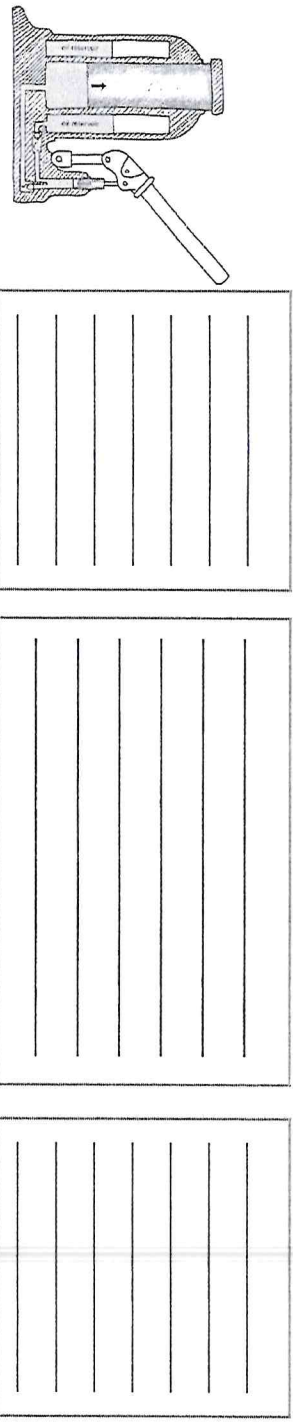
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4.3. Below is a drawing of a hydraulic jack.

(8)

Elaborate on the SYSTEMS DIAGRAM for the hydraulic jack:



**QUESTION 5**

[15]

The Story of B.R.A.K.E.S.

Car crashes are the number-one cause of death among teens in the United States. Everyday car crashes end more teen lives than murder, cancer or suicide, and thousands of teens are hospitalised every year due to crashes. B.R.A.K.E.S. is on a mission to change that.



When NHRA drag racing star Doug Herbert lost his two young sons, Jon and James, in a tragic highway collision in January of 2008, his griefled to resolve, inspiring a mission to help prevent other families from experiencing similar heartbreak. Herbert wasted no time in putting his mission into motion, creating B.R.A.K.E.S. (Be Responsible and Keep Everyone Safe), a charity organisation that provides FREE, hands-on advanced driver training through its Teen Pro-Active Driving School.

B.R.A.K.E.S.' primary goals are to prevent injuries and save lives by training and educating teenage drivers and their parents about the importance of safe and responsible driving.

While conventional driver's education is important and valuable, the B.R.A.K.E.S Teen Pro-Active Driving School curriculum goes well beyond that level of training, addressing common driving situations responsible for many traffic collisions involving teens.

Driving exercises include: Distracted Driving Awareness, Panic Braking, Crash Avoidance, Car Control/Skid Recovery, Drop-wheel/Off-road Recovery. Other elements include proper seat and mirror placement, proper use of seatbelts, eye scanning, Big Rig Safety, What to do during a Traffic Stop and more. More than 45,000 teenagers -- plus their parents -- have attended the B.R.A.K.E.S. program, totalling more than 60,000 safer drivers from 46 different states and 5 countries.

<https://putonthebrakes.org/about>

5.1. What are the two types of braking systems found in a car? (1)

5.2. What two advantages are there as a teenage driver from attending the BRAKES course? (2)