

## GRADE 12 PHYSICAL SCIENCES MARCH TEST

### QUESTION 1

Various options are provided as possible answers to the following questions. Choose the correct answer and write **ONLY** the LETTER (A-D) next to the QUESTION NUMBER (1.1-1.7) on your folio paper. Example 1.8. D.

- 1.1 Which of the following pairs of compounds contains members of the same homologous series?
- A Ethanol and butane  
 B Ethanol and propanoic acid  
 C Ethanol and propanal  
 D Ethanol and butanoic acid
- 1.2 In which of the following cases would the resultant force acting on an object be equal to 0N.



- A An object moving with constant acceleration.  
 B An object moving with constant speed in a straight line.  
 C An object moving with constant speed in a circular path.  
 D An object moving with constant acceleration.
- 1.3 Which of the statements below best describes Weightlessness?
- A An object moves at constant velocity through the air.  
 B An object moves with constant velocity through the air.  
 C An object moves with constant velocity through the air.  
 D An object moves with constant velocity through the air.
- 1.4 The inertia of an object...
- A increases as the object's velocity increases.  
 B increases as the object's mass increases.  
 C increases as the object's acceleration increases.  
 D increases as the object's speed increases.

- 1.5 An astronaut has a weight  $E_E$  on Earth. What distance, in terms of the radius of the Earth ( $r$ ), will the astronaut be if his weight is a 1/4 of his weight ( $E_E$ ) on the surface of the Earth?
- A  $r$   
 B  $2r$   
 C  $4r$   
 D  $16r$

- 1.6 A box is pushed forward with a force of 100N but does not move. A possible reason for this is that:
- A The box is too heavy.  
 B The box is too light.  
 C The box is too big.  
 D The box is too small.
- 1.7 A box is pushed forward with a force of 100N but does not move. A possible reason for this is that:
- A The box is too heavy.  
 B The box is too light.  
 C The box is too big.  
 D The box is too small.

[14]

### QUESTION 2

Three organic compounds (A, B and C) with different functional groups are given below.

A: 2,3-dimethyl-2-one



C:  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$

- 2.1 The carbocation fragment  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2^+$  can form a variety of organic compounds. (2)
- 2.2 Define the term functional group. (2)
- 2.3 Write down the:  
 2.3.1 IUPAC name of compound A. (2)  
 2.3.2 IUPAC name of compound B. (2)

# Grade1physical Science March Cluster Paper2014

**L Cohen**



## **Grade 1 physical Science March Cluster Paper 2014:**

*Robot-Assisted Learning and Education* Agnese Augello, Linda Daniela, Manuel Gentile, Dirk Ifenthaler, Giovanni Pilato, 2021-01-04      **Randomistas** Andrew Leigh, 2018-03-01 Randomised tests are carried out on us every day by supermarkets search engines online dating sites political parties and direct marketers But how do these tests work Are there any ethical issues And what do they reveal about our choices In *Randomistas* Andrew Leigh tells the stories of radical researchers who overturned conventional wisdom in medicine politics business law enforcement and more From finding the cure to scurvy to discovering what policies really improve literacy rates *randomistas* have shaped life as we know it but they often had to fight to conduct their trials and have their findings implemented The subject of this book could hardly be more vital are we humble enough to admit we may be wrong and do we care enough to learn *Randomistas* is rigorous impassioned and tremendous fun Everyone should read it Tim Harford author of *The Undercover Economist* A tour de force David Halpern author of *Inside the Nudge Unit* Reveals how data and experiments can make the world a better place Dean Karlan professor of economics at Yale      **Leave no child behind** UNESCO, 2022-06-20 To leave no child behind UNESCO developed the first global report of this scope on boys disengagement from education bringing together qualitative and quantitative evidence from over 140 countries This report provides an overview on the global situation on boys disengagement from and disadvantage in education It identifies factors influencing boys participation progression and learning outcomes in education It also analyses responses by governments and partners and examines promising policies and programmes Finally it includes recommendations on how to engage boys with education and address disadvantage While girls continue to face severe disadvantages and inequalities in education the report shows that boys in many countries are at greater risk than girls of repeating grades failing to complete different education levels and having poorer learning outcomes in school No less than 132 million boys of primary and secondary school age are out of school They urgently require support As this report shows supporting boys does not mean that girls lose out and vice versa Addressing boys disengagement not only benefits boys learning employment opportunities income and well being it is also highly beneficial for achieving gender equality and desirable economic social and health outcomes      **Physical Science**, 1999-11-01      **Physical Science Grade 1 Steps To Literacy** Staff, 2014-06-01      *Physical Science (Grade 1) (Reading in Science Workbook)* (373-5) MCGRAW HILL      , 2004-01-01      *Creative Science Curriculum STEAM Project Guide*, 2015      Physical Science: 10A : Learning about energy Tristan F. Nicholas, 2005 A easy reader that explains the different forces of energy Contains vocabulary words battery electricity energy fuel heat and shadow      **Physical Science and Engineering Science, Level 1** James Ellis, 1979  
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web coordinates of  $\mathbf{v}$  the standard coordinates are  $v_1 v_2$  are the  $b_1 b_2$  are assumed if no other basis is specified this means  $\mathbf{v} = v_1 \mathbf{b}_1 + v_2 \mathbf{b}_2$  if  $\mathbf{b}_1' \mathbf{b}_2'$  is a basis of  $\mathbb{R}^n$  then the matrix  $S$  which contains the vectors  $\mathbf{b}_k'$  as column vectors is called the coordinate change matrix

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web and now that we know what  $d$  is we can now solve for  $a$  we can now solve for the transformation matrix with respect to the standard basis so to do that we have to figure out  $c$  and  $c$  inverse so  $c$  remember  $c$  is just the change of basis matrix and all that is is the basis vectors it's just a matrix with the basis vectors in the column

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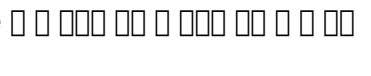
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