

## GRADE 11 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 (1.1-1.6) on your folio paper. Example 1.7: D.

- 1.1 The graphs below show the relationship between the net force and the acceleration for two masses X and Y.



Which one of the following statements is true?

- A. Mass of X is greater than mass of Y.  
B. Acceleration of X is greater than acceleration of Y.  
C. Mass of Y is greater than mass of X.  
D. The slope of X is greater than the slope of Y.
- 1.2 In which of the following cases would the resultant force acting on an object be equal to 0N?
- A. A car moving with constant acceleration.  
B. A ball falling from the sky to the ground with constant acceleration.  
C. A person standing on the ground with a rope attached to his waist.  
D. A car moving with constant acceleration.
- 1.3 Which of the statements below best describes Weightlessness?
- A. An object moving with constant velocity in the horizontal direction.  
B. An object moving with constant velocity in the vertical direction.  
C. An object moving with constant velocity in the horizontal direction.  
D. An object moving with constant velocity in the vertical direction.
- 1.4 The inertia of an object...
- A. is greater for a heavier object.  
B. depends on the speed of the object.  
C. is the resistance to any change in its state of motion.  
D. depends on the mass of the object.
- 1.5 An astronaut has a weight  $F_g$  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 ( $F_g$ ) on the

surface of the Earth?

- A.  $2r$   
B.  $r$   
C.  $1.5r$   
D.  $0.5r$
- 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.

[14]

### QUESTION 2

The grade 11 learners learn that there is more than one way to determine the resultant of two vectors. One way is the component method. They want to use this method to find the resultant of the forces acting on a bucket by the ropes from which the bucket is suspended. The bucket is stationary.

- 2.1 Draw the force diagram. (2)
- 2.2 The tension in rope P is 100N at an angle of  $30^\circ$  to the vertical and the tension in Q is 51,52N at  $45^\circ$  to the vertical.



Calculate the MAGNITUDE of the:

- 2.2.1 Horizontal components of P and Q respectively. (4)  
2.2.2 Vertical components of P and Q respectively. (4)  
2.2.3 Resultant of the horizontal components. (5)  
2.2.4 Resultant of the vertical components. (5)  
2.2.5 Resultant of the forces acting on the bucket. (5)
- 2.3 Calculate the mass of the bucket. (3)

[14]

# Physical Science March 2014 Question Paper Grade 11 Limpopo

**J Ma**



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## **Table of Contents Physical Science March 2014 Question Paper Grade 11 Limpopo**

1. Understanding the eBook Physical Science March 2014 Question Paper Grade 11 Limpopo
  - The Rise of Digital Reading Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Advantages of eBooks Over Traditional Books
2. Identifying Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Physical Science March 2014 Question Paper Grade 11 Limpopo
  - User-Friendly Interface
4. Exploring eBook Recommendations from Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Personalized Recommendations
  - Physical Science March 2014 Question Paper Grade 11 Limpopo User Reviews and Ratings
  - Physical Science March 2014 Question Paper Grade 11 Limpopo and Bestseller Lists
5. Accessing Physical Science March 2014 Question Paper Grade 11 Limpopo Free and Paid eBooks
  - Physical Science March 2014 Question Paper Grade 11 Limpopo Public Domain eBooks
  - Physical Science March 2014 Question Paper Grade 11 Limpopo eBook Subscription Services
  - Physical Science March 2014 Question Paper Grade 11 Limpopo Budget-Friendly Options
6. Navigating Physical Science March 2014 Question Paper Grade 11 Limpopo eBook Formats
  - ePub, PDF, MOBI, and More
  - Physical Science March 2014 Question Paper Grade 11 Limpopo Compatibility with Devices
  - Physical Science March 2014 Question Paper Grade 11 Limpopo Enhanced eBook Features
7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Highlighting and Note-Taking Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Interactive Elements Physical Science March 2014 Question Paper Grade 11 Limpopo

8. Staying Engaged with Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Physical Science March 2014 Question Paper Grade 11 Limpopo
9. Balancing eBooks and Physical Books Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Physical Science March 2014 Question Paper Grade 11 Limpopo
10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
11. Cultivating a Reading Routine Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Setting Reading Goals Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Fact-Checking eBook Content of Physical Science March 2014 Question Paper Grade 11 Limpopo
  - Distinguishing Credible Sources
13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
14. Embracing eBook Trends
  - Integration of Multimedia Elements
  - Interactive and Gamified eBooks

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