



## **FACULTY OF SCIENCE**

### **DEPARTMENT OF APPLIED PHYSICS AND ENGINEERING MATHEMATICS**

#### **NATIONAL DIPLOMA IN ANALYTICAL CHEMISTRY FOOD TECHNOLOGY**

**MODULE**    PHYSICS PHY1AE1

**CAMPUS**    DFC

### **JUNE EXAMINATION**

**DATE** 10/06/2014

**SESSION:** 8:30 – 11:30

**ASSESSOR**

**DR. J. CHANGUNDEGA**

**INTERNAL MODERATOR**

**MR. J. OELOFSE**

**DURATION**    3 HOURS

**MARKS**    120

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**NUMBER OF PAGES:** 10 PAGES, INCLUDING 2 INFORMATION SHEETS

**INSTRUCTIONS:** CALCULATORS ARE PERMITTED (ONLY ONE PER STUDENT)  
**MATHEMATICAL INSTRUMENTS ARE PERMITTED**

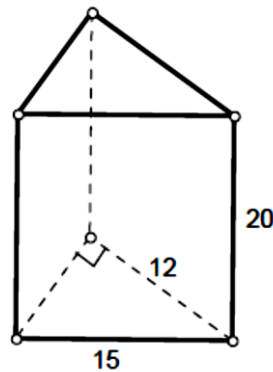
**ANSWER ALL QUESTIONS IN THE ANSWER BOOK PROVIDED****QUESTION 1**

1.1. Convert 36005,6 mW to

1.1.1. W. The final answer must have three significant figures. (4)

1.1.2. nW. State the final answer in scientific notation. (4)

1.2. The diagram shows a triangular prism. All the measurements given were measured in cm.



Determine the surface area of this shape in  $\text{cm}^2$ . (8)

1.3. Convert  $2.8007 \times 10^{-4} \text{ mg cm}^{-3}$  to  $\text{kg m}^{-3}$ . The final answer must be in decimal form. (4)

1.4. Define *volume*. (2)

1.5. State the formula for the volume of a sphere that has a radius  $r$ . (2)

**[24]**

**QUESTION 2**

2.1. Describe (3)

**[24]**

**QUESTION 3**

3.1. State (4)

**[24]**

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**QUESTION 4**

4.1. Draw (1)

**[24]**

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**QUESTION 5**

5.1. State (2)

**[24]**

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**Total Marks [120]**