This question paper consists of 12 pages.
INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions:

1. Write your answers in your answer book, which is provided in the exam.
2. Read the instructions carefully for each question and answer only what is required.
3. Begin with the question for which you think you'll get the best marks.
4. Number the answers correctly according to the numbering system used in this question paper.
5. The mark allocation of each question will determine the length of your answer. Give enough facts to earn the marks allocated. Don't waste time by giving more information than required.
6. Please write neatly – we cannot mark illegible handwriting.
7. Start the answer for each question on a NEW page, for example Question 1 – new page, Question 2 – new page.
8. You are allowed to use a non-programmable calculator and appropriate mathematical instruments.
9. Show ALL calculations clearly.
10. Round off ALL the final answers to TWO decimal places, unless stated otherwise.
11. Indicate units of measurement, where applicable.
12. Addenda A and B are attached at the back of the question paper, and must be detached and handed in together with your answer book.
13. Any student caught cheating will have his or her examination paper and notes confiscated. The College will take disciplinary measures to protect the integrity of these examinations.
14. If there is something wrong with or missing from your question paper or your answer book, please inform your invigilator immediately. If you do not inform your invigilator about a problem, the College will not be able to rectify it afterwards, and your marks cannot be adjusted to allow for the problem.
15. This question paper may be removed from the examination hall after the examination has taken place.

This question paper consists of FIVE questions. Answer ALL the questions.

<table>
<thead>
<tr>
<th>Question</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
</tr>
</tbody>
</table>

NOTE: Questions 2.2.2 and 4.2.6 must be answered on Addendums A and B respectively.
QUESTION 1

1.1 1.1.1 How many 250 millilitre glasses can be filled from a 2-litre bottle of water? (2)

1.1.2 The ratio of adults to children in a school concert audience is 3 : 16. There are 752 children in the audience. How many adults are there? (3)

1.2 An electronic retail store buys and sells the items below at the prices indicated:

<table>
<thead>
<tr>
<th>Item</th>
<th>Wholesale price (price the shop paid)</th>
<th>Retail price (selling price)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) DVD player</td>
<td>1 150</td>
<td>1 700</td>
</tr>
<tr>
<td>(b) TV set</td>
<td>2 100</td>
<td>3 500</td>
</tr>
<tr>
<td>(c) Computer</td>
<td>4 500</td>
<td>A</td>
</tr>
</tbody>
</table>

1.2.1 Calculate the percentage mark-up that the retail store will have on the TV set.

Use the formula:

\[
\text{Percentage mark-up} = \frac{\text{selling price} - \text{costprice}}{\text{costprice}} \times 100\%
\]  

1.2.2 Calculate how many DVD players the retail store could buy for R23 000. (2)

1.2.3 Determine the value of A, the selling price of the computer, if it has a mark-up of 30%. (3)

1.2.4 If the shop sells five TV sets, four DVD players and six computers on a particular day, how much profit does it make? (3)

1.3 Without rounding off, convert 1,45 kg to grams. (1)

1.4 Frank earns R60 per hour. He works for 40 hours per week. He saves \(\frac{1}{4}\) of his earnings each week.

How many weeks will it take him to save R2 700? (2) [19]
QUESTION 2

2.1 Your friend, Sibongile, is moving into a new flat and is overwhelmed by all the things she has to do, now that she will be living alone. One of the things she has to do is to buy furniture. She sees an advert that offers the following:

**BUY A SLEEPER COUCH FOR R2 800!**

Take advantage of our excellent terms and pay only R262 per month (R300 deposit over 12 months).

2.1.1 Sibongile thinks that R262 per month sounds like a very good deal. If she takes this option, how much will she pay for the couch **IN TOTAL**? (3)

2.1.2 How much of the amount is interest? (2)

2.1.3 What percentage of the normal price is added on as interest if you pay the couch off? (2)

2.1.4 Another option available is to import a similar couch from the USA. The couch costs $320 and the exchange rate is R7 : $1. In order to import the couch, you would also have to pay freight of R460.

A. What would it cost to buy the couch from the USA? (3)

B. Assuming that Sibongile decides to pay cash, which option is cheaper (the local couch or the couch from the USA) and by how much? (2)

2.2 Sibongile has also realised that she will have to pay for electricity. The flat has an electricity meter. There are two ways in which electricity costs are calculated, based on whether your electricity use qualifies you as a high or low consumption user.

- High consumption: you pay 35 cents per unit.
- Low consumption: you pay 40 cents per units, but you get 30 units free.

2.2.1 Complete the following table:

<table>
<thead>
<tr>
<th>Units used</th>
<th>0</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost under high consumption</td>
<td>0</td>
<td>R35</td>
<td>R70</td>
<td>A.</td>
<td>R140</td>
<td>R175</td>
</tr>
<tr>
<td>Cost under low consumption</td>
<td>0</td>
<td>R28</td>
<td>B.</td>
<td>R108</td>
<td>R148</td>
<td>R188</td>
</tr>
</tbody>
</table>

(2)
2.2.2 Draw a graph for high and low consumption costs based on the table in Question 2.2.1. (Use Addendum A for your graph.) (4)

2.2.3 Use the table and your graph to estimate how many units would cost the same for both the high and low consumption rates. (2) [20]

QUESTION 3

3.1 Sibongile's fiancé is helping to design a large swimming pool for the block of flats. The pool is rectangular with two semi-circles on each end as shown below:

- The area of a circle is: \( A = \pi r^2 \)
- The area of a rectangle is: \( A = l \times b \)
- Volume of a cylinder: \( V = \pi r^2 h \)
- Volume of a rectangular prism: \( V = l \times b \times h \)
- \( \pi = 3.14 \)

3.1.1 Calculate the area of the bottom of the pool. (4)

3.1.2 What is the volume of the pool if the pool is 1.8 m deep? (5)

3.1.3 If the pool is 80% full, what is the volume of water in the pool? (3)
3.2 A fence is to be built around the pool as shown in the diagram. The fence will be no closer than 2 m to the pool.

3.2.1 What is the perimeter of the fence? (4)

3.2.2 Fencing costs R12 per metre. There has to be a 1 m gap in the fence where a gate will be fitted. The gate will cost R80. How much will it cost to fence off the pool, including the gate? (4) [20]

QUESTION 4

4.1 Study the pie chart below, on learners' favourite subjects, and answer the questions that follow:

4.1.1 This survey was done on 90 learners. Calculate how many learners listed Mathematics as their favourite subject.

4.1.2 If a learner was chosen at random what is the probability that English would be his or her favourite subject?

4.1.1 This survey was done on 90 learners. Calculate how many learners listed Mathematics as their favourite subject. (3)

4.1.2 If a learner was chosen at random what is the probability that English would be his or her favourite subject? (2)
4.2 Two groups of students take a general knowledge test for 20 marks. Their results are shown in the following tables:

<table>
<thead>
<tr>
<th>Group 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 12 15 18 5</td>
</tr>
<tr>
<td>10 9 8 8 8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 12 12 13 15</td>
</tr>
<tr>
<td>19 16 16 13 –</td>
</tr>
</tbody>
</table>

4.2.1 Calculate the median score for group 1. (3)

4.2.2 Calculate the mean score of each group. (4)

4.2.3 Calculate the range for group 1. (2)

4.2.4 What is the mode for group 2? (1)

4.2.5 Which group do you think did better? Give a reason for your answer. (2)

4.2.6 For all the students (groups 1 and 2 combined), complete the following table and draw a histogram of all the scores. (Use Addendum B for your answers.)

<table>
<thead>
<tr>
<th>Score</th>
<th>Tally</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5–9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10–14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(8) [25]
QUESTION 5

5.1 Refer to the map of the Stellenbosch Wine Route below.

5.1.1 If you were at Neethlingshof, in what direction would Morgenhof lie? (1)

5.1.2 What is the distance between Morgenhof and Neethlingshof as measured on the map? (2)

5.1.3 Complete the following using the scale of the map: 1 cm = _____ km. (3)

5.1.4 Use your answers to Questions 5.1.2 and 5.1.3 to determine the distance (in km) between Morgenhof and Neethlingshof. Round off your answer to ONE decimal place. (1)
5.1.5 How big is the area (on the ground) enclosed by the M15, the M23, the R304 and the R101 near Kraaifontein at the top left of the map? (4)

5.1.6 If petrol costs R7 per litre and you use 6,3 litres per 100 km, how much would it cost you (for petrol) to drive from exit 32 to exit 39 on the N1? (3)

5.1.7 If the names of all the vineyards shown on the map (grape signs) were put in a hat, what is the probability of picking a vineyard on the M23? (2) [16]

GRAND TOTAL: 100 MARKS
STUDENT NAME: __________________________________________________________

STUDENT NUMBER: _______________________________________________________

QUESTION 2.2.2
STUDENT NAME: ________________________________

STUDENT NUMBER: ______________________________

QUESTION 4.2.6

<table>
<thead>
<tr>
<th>Score</th>
<th>Tally</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5–9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10–14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Grid for plotting tally data]