Q1.

(a)   Use your calculator to work out $19.42^2 - \sqrt[3]{1006} \div 4.95$

Write down your full calculator display.

....

....

Answer ....

(1)

(b)   Use approximations to check that your answer to part (a) is sensible.

You **must** show your working.

....

....

....

....

....

(2)

(Total 3 marks)

Q2.

Simplify $3^4 \times 3^4$

Circle the answer.

3^8 9^8 3^{16} 9^{16}

(Total 1 mark)

Q3.

(a)   Work out the value of $8^1 + 8^0$

....

Answer ....

(2)

(b) Write $6^{10} \div 6^2$ as a single power of 6

....

Answer ....

(1)

(c) Simplify fully $5x^3y^2 \times 3x^4y^3$

....

....

Answer ....

(2)
(Total 5 marks)

Q4.

A microscope slide has 2^8 bacteria on it.
The number of bacteria doubles every hour.

After how many hours are there 8^4 bacteria on the slide?

....

....

....

....

....

....

Answer .... hours

(Total 3 marks)

Q5.(a)   Simplify $a^{20} \times a^5$

Answer ....

(1)

(b)   Simplify $\dfrac{a^{20}}{a^5}$

Answer ....

(1)
(Total 2 marks)

Q6.(a)   Simplify $a^{20} \times a^5$

Answer ....

(1)

(b)   Simplify $\dfrac{a^{20}}{a^5}$

Answer ....

(1)

(c)   Simplify $(a^{20})^5$

Answer ....

(1)
(Total 3 marks)

Q7.(a)   Write down the value of 10^0

Answer ....

(1)

(b)   Write 5^{-3} in standard form.

....

....

....

....

....

Answer ....

(3)
(Total 4 marks)

Q8.(a)   Expand and simplify $(3x + 2)(2x + 5)$

....

....

....

Answer ....

(2)

(b)   Simplify fully $(3x^2y^4)^2$

....

....

....

Answer ....

(2)
(Total 4 marks)

Q9. Use your calculator to work out each of the following.

(a) $\sqrt{334.89}$

Answer ....

(1)

(b) $(7.2 - 5.3) \times (1.6 + 2.8)$

Answer ....

(1)

(c) $\dfrac{1}{2} \times (3.64 \div 2.8)$

Answer ....

(1)
(Total 3 marks)