N105 Indices 1

Q1.

Work out the value of 3^5

.....

(Total for question = 1 mark)

Q2.

(a) Write $\frac{3^5 \times 3^4}{3^2}$ as a power of 3

.....

(2)

(b) Write down the value of 12^0

.....

(1)

(c) Write down the value of 3^{-2}

.....

(1)

(Total for question = 4 marks)

Q3.

Write these numbers in order of size.
Start with the smallest number.

5^{-1} 0.5 −5 5^0

.....

(Total for Question is 2 marks)

Q4.

(a) Simplify $5^4 \times 5^6$

.....

(1)

(b) Simplify $7^5 \div 7^2$

.....

(1)

(Total for Question is 2 marks)

Q5.

(a) Simplify $a^4 \times a^3$

.....

(1)

(b) Simplify $(b^2)^7$

.....

(1)

(c) Write down the value of 3^0

.....

(1)

(d) Write down the value of 4^{-1}

.....

(1)

(Total for question = 4 marks)

Q6.

$p^3 \times p^x = p^9$

(a) Find the value of x.

$x =$ .....

(1)

$(7^2)^y = 7^{10}$

(b) Find the value of y.

$y =$ .....

(1)

$100^a \times 1000^b$ can be written in the form 10^w

(c) Show that $w = 2a + 3b$

(2)

(Total for question = 4 marks)

Q7.

(a) Simplify $\frac{x^9}{x^2}$

.....

(1)

(b) Write $\frac{7^8 \times 7^4}{7^3}$ as a single power of 7

.....

(2)

(Total for question = 3 marks)

Q8.

$\frac{8}{2^7} = 2^n$

(a) Find the value of n.

n = ...

(2)

$(13^{-6})^4 \times 13^5 = 13^k$

(b) Find the value of k.

k = ...

(2)

(Total for question = 4 marks)

Q9.

(a) Write $2^3 \times 2^6$ as a single power of 2

.....

(1)

(b) Write $\frac{3^9}{3^4}$ as a single power of 3

.....

(1)

(c) $\frac{5^n}{5^4 \times 5^6} = 5^3$.

Find the value of n.

n = ...

(2)

(Total for question = 4 marks)