1. Find the value of

(i) $36^{\frac{1}{2}}$

………………………………

(ii) 3^{-2}

……………………………

(Total 2 marks)

2. Write down the value of

(a) 7^0

....

(1)

(b) 4^{-1}

....

(1)

(Total 2 marks)

3. (a) Simplify 2^0

....

(1)

(b) Simplify 5^{-1}

....

(1)

(Total 2 marks)

4. (a) Write down the value of 2^{-1}

....

(1)

(b) Write down the value of $64^{\frac{1}{2}}$

....

(1)

(Total 2 marks)

5.   Write down the value of

(i) $5°$

....

(ii) 4^{-2}

....

(iii) $100^{\frac{1}{2}}$

....
(Total 3 marks)

6.   (a)   Write down the value of

(i) $9°$

....

(ii) $169^{\frac{1}{2}}$

....
(2)

(b)   Work out $64^{\frac{2}{3}}$

....
(2)
(Total 4 marks)

7.   (a)   Find the value of $36^{\frac{1}{2}}$

....
(1)

(b)   Find the value of $8^{-\frac{2}{3}}$

....
(2)
(Total 3 marks)

8.   Work out

(i) 4^0

....

(ii) 4^{-2}

....

(iii) $16^{\frac{3}{2}}$

....
(Total 3 marks)

9.   Write down the value of

(a) $25^{\frac{1}{2}}$

....
(1)

(b) 9^0

....
(1)
(Total 2 marks)

10.   (a)   Evaluate

(i) 3^{-2}

……………………………

(ii) $36^{\frac{1}{2}}$

……………………………

(iii) $27^{\frac{2}{3}}$

……………………………

(iv) $\left(\dfrac{16}{81}\right)^{-\frac{3}{4}}$

……………………………
(5)

11. (a)   Find the value of

(i) 64°

....

(ii) $64^{\frac{1}{2}}$

....

(iii) $64^{-\frac{2}{3}}$

....

(4)

(b) $3 \times \sqrt{27} = 3^{n}$

Find the value of *n*.

$n =$ ....

(2)

(Total 6 marks)

12. (a) Work out $3^6 \div 3^{-7}$

....
(1)

(b) Write down the value of $36^{\frac{1}{2}}$

....
(1)

(c) $3^n = \dfrac{1}{9}$

Find the value of *n*.

$n =$ ....
(1)
(Total 3 marks)

13. (a) Simplify

(i) $(3x^2y)^3$

....

(ii) $(2t^{-3})^{-2}$

....
(4)

14. $x = 2^p,$ $y = 2^q$

(a)   Express in terms of x and/or y,

(i) 2^{p+q}

....

(ii) 2^{2q}

....

(iii) 2^{p-1}

....

(3)

$$xy = 32$$

and $$2xy^2 = 32$$

(b)   Find the value of p and the value of q.

$p =$ ....

$q =$ ....

(2)

(Total 5 marks)

16. (a) Write down the value of $8^{\frac{1}{3}}$

....
(1)

$8\sqrt{8}$ be written in the form 8^k

(b) Find the value of *k*.

$k =$ ....
(1)

$8\sqrt{8}$ can also be expressed in the form $m\sqrt{2}$ where *m* is a positive integer.

(c) Express $8\sqrt{8}$ in the form $m\sqrt{2}$

....
(2)

(d) Rationalise the denominator of $\dfrac{1}{8\sqrt{8}}$

Give your answer in the form $\dfrac{\sqrt{2}}{p}$ where p is a positive integer.

....
(2)
(Total 6 marks)