**1** (a) Write down the value of $9^{\frac{1}{2}}$

.............................................

**(1)**

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

.............................................

**(1)**

(c) Write down the value of $27^{\frac{1}{3}}$

.............................................

**(1)**

(d) Write down the value of $10000^{\frac{1}{4}}$

.............................................

**(1)**

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

.............................................

**(1)**

(f) Write down the value of $16^{\frac{1}{2}}$

.............................................

**(1)**

(g) Write down the value of $32^{\frac{1}{5}}$

.............................................

**(1)**

**(Total for Question 1 is 7 marks)**

1

**2** (a) Write down the value of $4^{\frac{3}{2}}$

.......................................................
**(1)**

(b) Write down the value of $64^{\frac{2}{3}}$

.......................................................
**(1)**

(c) Write down the value of $16^{\frac{3}{4}}$

.......................................................
**(1)**

(d) Write down the value of $1000^{\frac{5}{3}}$

.......................................................
**(1)**

(e) Write down the value of $25^{\frac{3}{2}}$

.......................................................
**(1)**

(f) Write down the value of $1^{\frac{4}{5}}$

.......................................................
**(1)**

(g) Write down the value of $32^{\frac{3}{5}}$

.......................................................
**(1)**

(5) Write down the value of $81^{\frac{3}{4}}$

.......................................................
**(1)**

**(Total for Question 2 is 8 marks)**

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**3** (a) Find the value of $\left(\dfrac{4}{25}\right)^{\frac{3}{2}}$

.................................................
(2)

(b) Find the value of $\left(\dfrac{8}{125}\right)^{\frac{1}{3}}$

.................................................
(2)

(c) Find the value of $\left(\dfrac{8}{27}\right)^{\frac{2}{3}}$

.................................................
(2)

(d) Find the value of $\left(\dfrac{1}{32}\right)^{\frac{4}{5}}$

.................................................
(2)

(e) Find the value of $\left(\dfrac{9}{100}\right)^{\frac{3}{2}}$

.................................................
(2)

**(Total for Question 3 is 10 marks)**

**4**  (a)  $36^n = 6$

Work out the value of $n$.

$n = \text{.......................................}$

**(1)**

(b)  $100^n = 1000$

Work out the value of $n$.

$n = \text{.......................................}$

**(1)**

(c)  $8^n = 16$

Work out the value of $n$.

$n = \text{.......................................}$

**(1)**

(d)  $25^n = 125$

Work out the value of $n$.

$n = \text{.......................................}$

**(1)**

(e)  $125^n = 25$

Work out the value of $n$.

$n = \text{.......................................}$

**(1)**

(f)  $32^n = 4$

Work out the value of $n$.

$n = \text{.......................................}$

**(1)**

(g)  $81^n = 9$

Work out the value of $n$.

$n = \text{.......................................}$

**(1)**

(h)  $400^n = 8000$

Work out the value of $n$.

$n = \text{.......................................}$

**(1)**

**(Total for Question 4 is 8 marks)**

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**5** (a) Simplify $(49x^8y^{10})^{\frac{1}{2}}$

.......................................
**(2)**

(b) Simplify $(64x^9y^{30})^{\frac{1}{3}}$

.......................................
**(2)**

(c) Simplify $(125x^3y^{12})^{\frac{2}{3}}$

.......................................
**(2)**

(d) Simplify $(a^6b^8c^4)^{\frac{3}{2}}$

.......................................
**(2)**

(e) Simplify $(16m^{20}n^4)^{\frac{1}{4}}$

.......................................
**(2)**

**(Total for Question 5 is 10 marks)**

**6** (a) Simplify $\left(\dfrac{25x^4}{81y^{18}}\right)^{\frac{1}{2}}$

.............................................
**(3)**

(b) Simplify $\left(\dfrac{8p^3}{27q^{21}}\right)^{\frac{1}{3}}$

.............................................
**(3)**

(c) Simplify $\left(\dfrac{a^6b^3}{125m^9n^{30}}\right)^{\frac{2}{3}}$

.............................................
**(4)**

(d) Simplify $\left(\dfrac{16k^{100}}{81x^{16}y^{32}}\right)^{\frac{3}{4}}$

.............................................
**(4)**

**(Total for Question 6 is 14 marks)**