Indices
Difficulty: Hard

Question Paper 2

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Algebra and graphs
Sub-Topic	Indices
Paper	Paper 2
Difficulty	Hard
Booklet	Question Paper 2

Time allowed: **32 minutes**

Score: **/25**

Percentage: **/100**

Grade Boundaries:

CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

Question 1

Find the value of

(a) $(\sqrt{5})^8$, [1]

(b) $\left(\frac{1}{27}\right)^{-\frac{2}{3}}$. [1]

Question 2

(a) Find the value of

(i) $\left(\frac{1}{4}\right)^{0.5}$, [1]

(ii) $(-8)^{\frac{2}{3}}$. [1]

(b) Use a calculator to find the decimal value of $\frac{\sqrt{29-3\times 32^{0.4}}}{3}$. [1]

Question 3

Simplify the following.

(a) $(4pq^2)^3$ [2]

(b) $(16x^8)^{-\frac{1}{4}}$ [2]

Question 4

$a \times 10^7 + b \times 10^6 = c \times 10^6$

Find c in terms of a and b.
Give your answer in its simplest form. [2]

Question 5

$3^{x} \times 9^{4} = 3^{n}$

Find n in terms of x. [2]

Question 6

Simplify $\frac{5}{8}x^{\frac{3}{2}} \div \frac{1}{2}x^{-\frac{5}{2}}$. [2]

Question 7

Find the value of n in each of the following statements.

(a) $32^{n}=1$ [1]

(b) $32^{n}=2$ [1]

(c) $32^{n}=8$ [1]

Question 8

Simplify

(a) $\left(\frac{x^{27}}{27}\right)^{\frac{2}{3}}$, [2]

(b) $\left(\frac{x^{-2}}{4}\right)^{-\frac{1}{2}}$. [2]

Question 9

Find the **exact** value of

(a) 3^{-2}, [1]

(b) $\left(1\frac{7}{9}\right)^{\frac{1}{2}}$. [2]