

1.1 Laws of Indices & Surds

Question Paper

Course	Edexcel IAL Maths: Pure 1
Section	1. Algebra & Functions
Topic	1.1 Laws of Indices & Surds
Difficulty	Easy

Time allowed: 30

Score: /27

Percentage: /100

Question 1

Write down the value of

(i) $81^{\frac{1}{4}}$

(ii) $8^{\frac{2}{3}}$

(iii) 5^{-2}

[3 marks]**Question 2**

Simplify

(i) $x^3 \times x^5$

(ii) $\frac{a^2}{a^4}$

(iii) $\frac{y^{\frac{5}{7}} \times y^{\frac{1}{7}}}{y^{\frac{3}{7}}}$

[3 marks]

Question 3

Write the following in the form $a\sqrt{b}$

(i) $\sqrt{2} + \sqrt{8}$

(ii) $4\sqrt{3} - \sqrt{12} + 4\sqrt{48}$

(iii) $(2\sqrt{2})^3 + 3\sqrt{2}$

[3 marks]**Question 4**

Rationalise the denominator of $\frac{3}{\sqrt{2}}$.

[2 marks]**Question 5**

Rationalise the denominator of $\frac{2}{3+\sqrt{5}}$.

[2 marks]

Question 6

Write $\frac{6x^2+5x^3}{x^4}$ in the form $ax^m + bx^n$ where a, b, m and n are constants to be found.

[2 marks]**Question 7**

Show that $(p + 2\sqrt{5})(p - 2\sqrt{5}) = p^2 - 20$.

[3 marks]**Question 8**

Simplify

$$\frac{28x^2(2x^2 + 3)}{7x^{\frac{1}{2}}}$$

[3 marks]

Question 9

Simplify

$$\frac{3 - 2\sqrt{3}}{4 - \sqrt{3}}$$

[3 marks]**Question 10**

Solve the equation

$$\frac{1}{9}x^{\frac{4}{5}} = 9$$

[3 marks]



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