5.1 Integration

Question Paper

Course	Edexcel IAL Maths: Pure 1
Section	5. Integration
Topic	5.1 Integration
Difficulty	Easy

Time allowed: 30

Score: /21

Percentage: /100

Question 1

Integrate

(i) $2x$,

(ii) $6x^2$,

(iii) $\frac{1}{2}x^{\frac{1}{2}}$.

[3 marks]

Question 2

Use calculus to find

$$\int \left(3x^{\frac{1}{2}} + 2x^{-\frac{1}{2}}\right) dx.$$

[3 marks]

Question 3

(a) Show that

$$\frac{3x^3 + 4x^6}{x^2}$$

can be written as $3x^a + 4x^b$, where a and b are constants to be found.

[2 marks]

Question 3

(b) Hence find

$$\int \frac{3x^3 + 4x^6}{x^2} \, dx.$$

[3 marks]

Question 4

(a) Integrate $5x^4 + 6x^2 + 2x + 3$.

[3 marks]

Question 4

(b) Given that $f(x) = \int (5x^4 + 6x^2 + 2x + 3) \; dx$ and that the graph of $y = f(x)$ passes through the point $(1, 10)$, find an expression for $f(x)$ in terms of x only.

[3 marks]

Question 5

The curve C, described by the integral

$$y = \int (2x^3 - x) \; dx,$$

passes through the point $(2, -2)$.
Show that $2y = x^4 - x^2 - 16$.

[4 marks]