Basic Integration
Difficulty : Easy

Question Paper 1

Level	AS & A Level
Subject	Maths - Pure
Exam Board	Edexcel
Topic	Integration
Sub-Topic	Basic Integration
Difficulty	Easy
Booklet	Question Paper 1

Time allowed: **37 minutes**

Score: **/31**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>76%	61%	52%	42%	33%	23%	<23%

Question 1

Given that $y = 6x - \frac{4}{x^2}$, $x \neq 0$,

(a) find $\int y \, dx$. **(3)**

(Total 3 marks)

Question 2

Given that $y = 2x^2 - \frac{6}{x^3}$, $x \neq 0$,

(a) find $\int y \, dx$. **(3)**

(Total 3 marks)

Question 3

Find $\int \left(6x^2 + 2 + x^{-\frac{1}{2}}\right) dx$, giving each term in its simplest form. **(4)**

(Total 4 marks)

The curve C with equation $y = f(x)$, $x \neq 0$, passes through the point $(3, 7\ \frac{1}{2})$.

Given that $f'(x) = 2x + \frac{3}{x^2}$,

(a) find $f(x)$. **(5)**

(b) Verify that $f(-2) = 5$. **(1)**

(Total 6 marks)

Question 5

(a) Show that $(4 + 3\sqrt{x})^2$ can be written as $16 + k\sqrt{x} + 9x$, where k is a constant to be found. **(2)**

(b) Find $\int (4 + 3\sqrt{x})^2 \, dx$. **(3)**

(Total 5 marks)

Question 6

Given that $y = 3x^2 + 4\sqrt{x}, \quad x > 0$, find

(a) $\int y \, dx$. **(3)**

(Total 3 marks)

Question 7

Find $\int (3x^2 + 4x^5 - 7) \, dx$. **(4)**

(Total 4 marks)

Question 8

Find $\int (2 + 5x^2) \, dx$. **(3)**

(Total 3 marks)