

Books, watches, notes or cell phones are **not** allowed. The **only** calculators allowed are the Sharp EL-531\*\*\*. You **must** show all your work, the correct answer is worth 1 mark the remaining marks are given for the work.

**Question 1.** (1 mark each) Integrate the following indefinite integrals:

a.

$$\int \frac{1}{x^{1/5}} dx$$

b.

$$\int \csc x dx$$

c.

$$\int \tan x dx$$

d.

$$\int \frac{1}{\sqrt{13-x^2}} dx$$

e.

$$\int e^x dx$$

f.

$$\int \cos x dx$$

**Question 2.** (4 marks) Find  $f$ .

$$f''(t) = 3 \cos t + 2 \sin t \quad f(0) = 0, \quad f(\pi) = 0$$