KING SAUD UNIVERSITY

Math Department

First Semester 40/41

October28th 2019

Time 90mn

Math106 Midterm1

Question 1(2+3+3)

a) Find the number c so that $\sum_{11}^{30}(k^2 - c) = 0$

b) Approximate the integral $\int_0^{2\pi} (\cos x)^4 dx$ using Simpson's rule with n=8

c) Use Riemann sums to evaluate $\int_0^1 x^3 dx$

Question 2(3+2+3)

a) Evaluate the integral $\int \frac{5^{tanx}}{(cosx)^2} dx$

b) If $y = 2^{(sinx)^2} + x^{\pi}\pi^x$ find y'

c) Compute $\int \frac{dx}{\sqrt{x}(2+x)}$

Question 3(3+3+3)

a) Find $\int \frac{(lnx+1)dx}{\sqrt{16(xlnx)^2-9}}$

b) Evaluate the integral $\int \frac{dx}{x\sqrt{x^5-4}}$

c) Compute $\int \frac{2e^{-3x}dx}{1-e^{-6x}}$