Course No: PHRM1307
Course Title: Applied Math.
Date: 29/11/2017
No. of Questions: (3)
Time: ١hours
Using Calculator (Yes)

University of Palestine

Second Midterm Exam
2017/2018
Total Grade:15

Instructor Name:.
Student No.: _____
Student Name: _____
College Name: Pharmacy College
Dep. / Specialist: _____
Using Dictionary (No)

Question One (5Marks)

Find $\frac{dy}{dx}$ if /

(a) $y = e^{-3x} \sec 5x$

(b) $y = 3^{2x+1} + \ln(\tan 5x)$

(c) $y = \tan^{-1}\left(\frac{1}{\sqrt{x}}\right) + \log_3(x^2 + 1)$

(d) $y = \sec^{-1} x^2 + \sin^{-1} 5x$

(e) $x^2y + yx = \sin 5x$

Question Two (5Marks)

(a)Find the linearization of $f(x) = 2x \sin x$

at $x = \frac{\pi}{2}$

(b) If $y = \frac{x(1-x^2)^2}{\sqrt{1+x^2}}$ find $\frac{dy}{dx}$ (Use logarithmic differentiation)

(c) Find the oblique asymptote of the graph of $f(x) = \frac{x^2}{x+1}$

Question Three (5Marks)

(a) Find $\frac{dy}{dx}$ if $y = \frac{1}{x^2}$ (Use the definition of derivative)

(b) Let $f(x) = \frac{1}{3}x^3 + \frac{1}{2}x^2 - 6x + 8$ Find the critical points and intervals on which f is increasing and decreasing.

End of Questions

Good Luck