Name:

Enrolment No:

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UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Theory Examination, December 2019

Course: Remedial Mathematics — **Semester:** 1st
Program: B. Pharma — **Time 1.5 hrs.**
Course Code: BP106RMT — **Max. Marks: 35**

SECTION A

S. No.	CO	Long Answers (Answer 1 out of 2)	1X10= 10
Q1.	CO4	Evaluate the following integrals $\int x^2 e^{3x}\,dx$ $\int x^3 \ln 5x\,dx$	10
Q2.	CO3	Find the derivative of following function $f(x) = -2x^3 + \frac{1}{3}x^2 - \sqrt{3}x + 5.$ $f(x) = x(\ln x - 1).$	10

SECTION B

		Short Answers (Answer 5 out of 7)	5X5=25
Q3.	CO2	Evaluate the following: $\lim_{x\to 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{x}$	5
Q4.	CO3	Find the derivative of y with respect to x $x = t^5 - 4t^3$ $y = t^2$	5
Q5.	CO4	Evaluate $\int \sin^2 x \cos^2 x\,dx$	5
Q6.	CO4	Find $\int_1^2 \frac{2w^5 - w + 3}{w^2}\,dw$	5
Q7.	CO5	Solve $\frac{dy}{dx} = e^{x-y}$	5
Q8.	CO5	Find the Laplace Transform of $(t^2+1)^2$ and $(\sin t - \cos t)^2$	5
Q9.	CO4	Integrate $\int \frac{x^2 - 1}{x^2 - 16}\,dx$	5