

Dronacharya Group of Institutions, Greater Noida
Department of APS
Subject Name: Mathematics-II (KAS 203)
Lecture wise Question Bank

Unit No.: 2	Unit Name: Multivariable-II		
Lecture No.	Questions	Weightage of Question as per University Exam (In terms of Marks)	Reference
L1	Evaluate. $\int_0^1 \frac{x^2}{1-x^3}$	5	(Aktu 2017-2018)
	Evaluate $\int_0^1 \frac{1}{\sqrt[n]{a^n - x^n}} dx.$	2	(Aktu 2015-2016)
L2	Evaluate. $\frac{\Gamma\left(\frac{8}{3}\right)}{\Gamma\left(\frac{2}{3}\right)}$	2	(AKTU 2015-2016).
	Define Beta and Gamma function and evaluate $\int_0^1 \frac{1}{\sqrt{1+x^4}} dx$	2	(AKTU 2015-2016).
L3	The parabolic arc $y=\sqrt{x}$, $1 \leq x \leq 2$ is resolved around x-axis. Find the volume of the solid of revolution.	10	(AKTU 2016-2017).
	Find the value of the integral $\int_0^{\infty} e^{-ax} x^{n-1} dx.$	7	(AKTU 2014-2015).
L4	For the Gamma function Show that. $\frac{\Gamma\left(\frac{1}{3}\right)\Gamma\left(\frac{5}{6}\right)}{\frac{2}{3}} = (2)^{1/3}\sqrt{\pi}$	10	(AKTU 2016-2017).
	Find whether it converges or not and if so evaluate the value of $\int_0^2 \frac{2x}{x^2-4} dx.$	4	NPTEL
L5	Check whether it converge or not $\int_{-\infty}^{\infty} \frac{1}{1+x^2} dx.$	10	NPTEL
	Check convergence $\int_0^{\infty} \frac{1}{1+x^2} dx.$		
L6	Find the point of infinite discontinuity in the $\int_0^{\infty} e^{-x} dx.$	7	AKTU Dec 2017
	Find whether it converges or not and if so evaluate the value of $\int_1^2 \frac{2x}{x^2-4} dx.$		