Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U1P05

Ph.D COURSE WORK EXAMINATION, MAY 2024

21PPH105 - Physicochemical methods for characterization of nano materials

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1.	(a)	Explain in details Scherer formula using X-Ray diffraction	CO1- U	(20)
		Or		
	(b)	Explain in detail single crystal X-ray Diffraction techniques	CO1- U	(20)
2.	(a)	Discuss the principle and Instrumentation of Thermogravimetry analysis for nanostructured samples.	CO2- U	(20)
		Or		
	(b)	Explain in detail Differential scanning calorimetric methods for nanostructured samples.	CO2- U	(20)
3.	(a)	Explain in detail X ray characterization technique using Energy dispersive Analysis	CO3-U	(20)
		Or		
	(b)	Explain in detail X-Ray Photoelectron Spectroscopy	CO3-U	(20)
4.	(a)	Explain in detail Raman Spectroscopy with application.	CO4- U	(20)
		Or		
	(b)	Explain in detail Electron spin resonance Spectroscopy	CO4- U	(20)
5.	(a)	Explain the principles behind of Nano indentation technique with examples.	CO5- U	(20)
		Or		
	(b)	Discuss in detail Nano indentation data analysis method.	CO5- U	(20)