College of Technology

1. Information pertaining to instruments above Rs. 5.0 lakh may please be sent in the following format-

Sl. No.	Name of equipment	Cost (Rs.)	Year of purchase	Samples tested	Remark
1	2	3	4	5	6
Department of Post Harvest Process & Food Engineering:					
1.	Solvent extraction unit	1407324.00	2017	60	
2.	Textural Analyzer	1053176.00	2007	200	
3.	Fermenter	787500.00	2014	04	
4.	Twin Screw extruder	1292475.00	2015	05	
Department of Industrial and Production Engineering:					
1.	Welding Simulator	1711000.00	2024	-	These machines are not in commercial used
2.	Spot welding	798624.00	2020	-	
3.	CNC Milling Machine	652080.00	2006	-	These are used for B.Tech classes & PG Research work
4.	CNC Lathe Machine	1307161.00	2004	-	
Department of Civil Engineering:					
1.	Bump Integrater (Highway Lab)	4,00,000.00 + 10,1124.00	28.05.2014	Class work 52 Nos	
2.	Automatic Compression Testing M/C (Concrete Lab)	5,76,924.00 + 2,88,168.00 +59,535.00	20.03.2003	Around 1000 Nos/ Sample testing/ Class work/ Project work/ Training	
3.	Compression Testing M/C Servo Controller (Structure Lab)	21,53,000.00	20.08.2024	Around 1000 Nos/ Sample testing/ Class work/ Project work/ Training	
4.	UTM (Structure Lab)	11,75,625.00 + 49,489.00 + 1,80,000.00 + 32,400.00	10.03.2008	Around 1000 Nos/ Sample testing/ Class work/ Project work	
5.	Hydraulic Tilting Flume (Hydraulic Lab)	6,16,418.00	29.10.2012	Lab Class 500	
6.	Total Station (Survey Lab)	5,04,000.00	18.09.2019	200 Classes/ Testing/Training	
7.	Triaxial Test App (Soil Mech. Lab)	6,21,090.00	28.08.2008	Lab Classes/ Project work	
Department of Electronics & Communication Engineering:					
1.	432A Analog Power Meter	5,16,897.07	2006	36	

Department of Electrical Engineering:

	1.	NI Power management system (i) 1A509C4CDAQ-9178 (ii) 1A5D02FNI9225 (iii) 1A4D02FNI9227 (iv) NI Academic Suite one User S.No.M80X59133	5,31,904.00	2015	-	
	2.	Fluke Make Power Scope Model 190-504	11,15,100.00	2017	-	
	3.	Solar PV Emulator	5,32,350.00	2014	-	
	4.	Three Phase Power Quality Analyzer Model Fluke-435-II S.No. 272/3/4	5,95,686.00	2015	-	
	5.	Wind Emulator	5,88,000.00	2015	-	

Department of Irrigation and Drainage Engineering:

	1.	Kjeldal Nitrogen Apparatus	8,24,140.00	2008	800	
	2.	Multi Para Meter	6,21,790.00	2008	1200	
	3.	TOC	16,62,193.00	2008	500	
	4.	ICS	19,19,466.00	2008	500	
	5.	HPLC	17,47,079.00	2008	500	
	6.	Remote Sensor with individual data loggers	6,30,000.00	2014	300	

Department of Information Technology:

	1.	Forensic Work Station	9,22,878.00	2021	-	
	2.	Interactive	5,98,000.00	2020	-	

Department of Computer Engineering :

	1.	HP Itenium Server	9,38,650.00	2007-08	-	-
	2.	High Performance (Blade Server)	25,18,950.00	2014-15	-	-
	3.	SENSEnuts Pro Kit with consisting of following items 1. SENSEnuts Mesh low Power wireless radio 2. Gateway Module-USB with cable 3. Gateway Module- Wi-Fi 4. TL Sensor (Temp & Light) 5. HTP Sensor (Humidity, Temp & Pressure) 6. GAP Sensor Module (GPS) Accelerometer, PZR) 7. PIR Sensor Module 8. PIN Extender Module 9. Associated Software Tool chain	5,62,860.00	2022-23	-	-

2. **All departments/colleges are also requested to suggest few high end equipment's with approximate cost and their proposed use per year in the following format:**

Sl. No	Name of Instrument	Approximate cost (Lakh)	Used for/parameters detected/estimated	No of approximates sample uses per year
1	2	3	4	5
Department of Post Harvest Process & Food Engineering:				
1.	Portable Konica Mintola Chroma meter	9	Measuring the color of food product	100
2.	Uv-visible double beam Spectrophotometer	4.78	Carbohydrate, antioxidant, TPC, TFC, transparency measurement	60
3.	Centrifuge	10.5	Separate substances in a liquid or solid based on their density, size, shape, or viscosity	90
4.	Universal testing machine	12	To test the mechanical properties of materials, components, and structures	65
5.	Water activity meter (nunes instrument)	10	To measure the unbound water vapor pressure in a product	80
6.	Water vapor transmission rate testing instrument	28.5	To measure the rate at which water vapor passes through a material, such as a packaging material, film, or membrane	50
7.	Twin screw Extruder	19	Used to gently mix and shape dough, without direct heating or cooking within the extruder	90
8.	Head space analyzer	1.3	Detects gas content in food packaging	110
9.	Gas Chromatography-Mass Spectrometry	25	Detecting and identifying compounds Analyzing aromatic compounds Detecting contaminants Analyzing food flavors	70
10.	Fourier Transform Infrared Spectroscopy	18	Analyzing proteins Analyzing microorganisms Analyzing foodborne pathogens	50

11.	High-Performance Liquid Chromatography	17	Hazardous compound analysis Food traceability Food additive detection	80
12.	X-ray general purpose diffract meter 3700 series	57	Crystal structure Crystal orientation Phase composition	60
13.	High pressure processing	175	Novel , non-thermal technology Food preservation without heat	100
14.	Cold plasma	30	inactivate the pathogenic microorganisms on the surface of low-moisture foods	70
15.	Supercritical fluid extractor	21	extracting flavor and fragrance compounds from complex matrices without the use of organic solvents	80
16.	3D printing technology	7	Sustainable food production Personalized nutrition	110
17.	Spray dryer	8.5	to dry food into a powder to preserve it and make it shelf stable	110
18.	Cryogenic grinder	5	to grind spices and condiments at low temperatures to improve the quality of the final product	50
19.	Hyper spectral image processing	10	Detect contaminants and foreign objects in food products Determine the moisture content and acidity of food products Identify food spoilage and decay Analyze the nutritional content and chemical composition of food products	100
20.	Differential scanning calorimeter	18	Thermal transitions Food structure Protein conformation Thermal properties	90
21.	Rheometer	4.75	to study the rheological properties of food	100

22.	Rapid visco-analyzer	4.78	assessing the pasting properties of flour or starch	70
23.	Ultrasonicator with variable frequency	4	Inactivating enzymes and microorganisms Evaluating food quality Improving freezing and drying Extracting essential oils	120
24.	Hydrodynamic cavitator	12.5	Rehydrating powders Extracting food constituents Creating stable emulsions Vegetable oil degumming and refining	80

Department of Civil Engineering:

1.	Non Destructive testing (NDT) equipment	25 Lakhs	NDT test of structural elements like, beam, column,s lab etc	For new course curriculum of B.Tech and for consultancy purpose
2.	Falling Weight Deflectometer (FWD)	25 Lakhs	for pavement strength Analysis	for M.Tech/ Ph.D research
3.	Vibration Comprehensive Experimental Teaching System	15 Lakhs	for teaching Structural courses to UG/PG dynamics	for M.Tech/ Ph.D Students
4.	Hydraulic Tilting Flume	08 Lakhs	to study breakwaters, sea walls and beach behaviour, or for fundamental research.	For UG/ PG Students
5.	Ground Penetration Radar	40 Lakhs	ground penetrating radar uses radio pulses to image the subsurface.	For UG/PG students project and research and consultancy purpose
6.	Electrical Resistivity Apparatus	10 Lakhs	it is used to test for the presence of underground voids such as old basements of embedded pipes that can cause safety andtechnological problems during construction	For UG/PG students project and research and consultancy purpose
7.	Cyclic Triaxial Testing Apparatus	50 Lakhs	commonly used to measure the cyclic strength or liquefaction	For UG/PG students project and research and consultancy purpose

Department of Irrigation and Drainage Engineering:

1.	ASS (Automic Absorption Spectroscopy)	20,00,000.00	Heavy Metals	50-100
2.	Oven	1,50,000.00	For Dry soil sample	50-100