Date: 21-05-2025

Total Marks: 50

Marks BL CO

R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT (An Autonomous College U/s UGC Act 1956)

B.Voc. SEMESTER- II, SEMESTER END EXAMINATION – SUMMER 2025

Subject Code: 1IC204 Subject Name: UNIT OPERATIONS-1 (FLUID FLOW OPERATION AND MECHANICAL OPERATION) Time: 11:00 AM to 01:00 PM

Instructions

- 1. It is compulsory for students to write Enrolment No. /Seat No. on the question paper.
- 2. Attempt all questions in the question paper.
- 3. The figures to the right of each question indicate full marks. Make suitable assumptions with proper justification wherever required.
- 4. Simple, non-programmable scientific calculators are permitted.
- 5. BL Bloom's Taxonomy Levels (R-Remember, U-Understanding, A-Application, N-Analyze, E-Evaluate, C-Create), CO Course Outcomes.

Q.1	Multiple-Choice Questions		[05]		
	(a) What does MSDS stand for?		1	R	1
	(i) Material Safety Data Sheet	(ii) Manufacturing Safety Design Sheet			
	(iii) Mechanical Safety Data Sheet	(iv) Material Storage Data System			
	(b) Which of the following is a Newton	nian fluid?	1	R	2
	(i) Blood	(ii) Honey			
	(iii) Water	(iv) Toothpaste			
	(c) Rotameter is used for measuring		1	R	3
	(i) Pressure	(ii) Velocity			
	(iii) Flow rate	(iv) Temperature			
	(d) Mesh indicates the number of holes	s per	1	R	4
	(i) Square inch	(ii) Linear inch			
	(iii) Square foot	(iv) Linear foot			
	(e) Which of the following is/are size r	reduction laws?	1	R	5
	(i) Rittinger's Law	(ii) Kick's Law			

	(iii) Bond's Law (iv) All of the above			
Q.2	Attempt Any Three			
	(a) Differentiate between unit operations and unit processes.		U	1
	(b) Discuss in details structure of an MSDS sections wise.		U	1
	(c) Classify the different types of fluids on the basis of their characteristics with examples		U	2
	(d) Explain reynolds number, laminar, turbulent and transitional flow.	5	U	2
Q.3	Attempt Any Three			
	(a) Discuss about various valve and its classification.	5	U	3
	(b) Explain different types of flow measurements.		U	3
	(c) Explain screening, ideal and actual screens in detail.		U	4
	(d) Discuss the concepts of mixing and agitation.	5	U	4
Q.4	Attempt Any Three			
	(a) Write the applications of size reduction and discuss the various methods of size reduction operation.		Α	5
	(b) Explain Jaw Crusher with neat figure and write its applications.	5	A	5
	(c) Explain ball mill with neat figure and write its applications.		A	5
	(d) Discuss about filtration and sedimentation and write its applications.	5	Α	5
