

Enrollment No: _____

PARUL UNIVERSITY**FACULTY OF ENGINEERING & TECHNOLOGY****B.Tech Mid Semester Exam 2023-24****Semester: 6th****Date: (01/02/2024)****Subject Code: (203120483)****Time: (1hr: 30min)****Subject Name: (Reservoir Modelling and Simulation)****Total Marks: 40**

Sr. No.		Marks
Q.1	(A) One-line Questions	05
	1. Define Simulation?	
	2. Write down three objectives of the Reservoir Simulation?	
	3. Write down the name of any three factors on which the size and numbers of grid blocks depend?	
	4. Define Numerical simulation model?	
	5. Define porosity?	
	(B) Compulsory Question	05
	1. Ability or capability of the fluids to flow is called _____.	
	(A) Porosity (B) Permeability	
	(C) Saturation (D) Wettability	
	2. Objective of _____ is to lower oil viscosity by the penetration of the heat front deep into the reservoir	
	(A) Miscible flooding (B) Chemical flood model	
	(C) Thermal flood model (D) Immiscible flood model	
	3. Which one is correct Output data of Reservoir Simulation?	
	(A) Economic parameters (B) Geological model	
	(C) Seismic interpretation (D) Production data	
	4. Capillary pressure increases with _____ in capillary radius.	
	(A) Decrease (B) Increase	
	(C) Both A and B (D) None of these	
	5. _____ models have been designed explicitly to simulate multiphase flow in fractured systems where the oil mainly flows in fractures but is stored mainly in the rock matrix	
Q.2	Attempt any four (Short Questions)	12

	1. Write down the application of the Reservoir Simulation?	
	2. Explain the Compositional model?	
	3. Explain Isotropic and anisotropic systems?	
	4. What are the Basic Steps of a Simulation Study?	
	5. Explain the Curvilinear flow geometry?	
Q.3	Attempt any two	08
	1. Explain the examples of reservoir processes that can be modelled using a chemical flood model?	
	2. Explain two-dimensional and three-dimensional flow structures?	
	3. Explain all five basic steps of the Simulation study?	
Q.4	(A) Explain Body-Centered Grid and Mess-Centered Grid in detail?	05
	(B) Explain the properties such as Oil formation volume factor, gas formation volume factor, Gas Solubility, and relative permeability?	05
	OR	
	(B) Explain Three-phase (oil-water-gas) equations?	05