BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)

CLASS: B.TECH. **SEMESTER : V**
BRANCH: CHEMICAL ENGG. **SESSION : MO/2023**

SUBJECT: CL321 PETROLEUM REFINERY ENGINEERING

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	Why straight chain hydrocarbons are preferred in HSD?	[2]	1	2
Q.1(b)	What are the differences between TBP and ASTM distillation? Why is TBP curve sharper than ASTM curve?	[3]	1	1,2

Q.2(a) The following table shows the ASTM-D86 data of crude oil. Convert this data to TBP data. The conversion coefficients are also tabulated: [5] 1 3

% Vol Distilled	a	b	ASTM D86 BP, °C
0	0.9177	*1.0019*	58.9
10	0.5564	*1.09*	75.1
30	0.7617	*1.0425*	102.5
50	0.9013	*1.0176*	134.3
70	0.8821	*1.0226*	169.5
90	0.9552	*1.011*	204.4
95	0.8177	*1.0355*	215.9

Q.3(a)	Why is desalting of crude important in refinery? Why is caustic solution used during desalting process	[2]	2	2
Q.3(b)	What is the function of steam ejectors in VDU? What are important products obtained from VDU?	[3]	2	2,1
Q.4(a)	Illustrate the ADU with various products and their boiling ranges	[5]	2	3
Q.5(a)	Explain the CCR reforming process with a flow diagram	[5]	3	3

:::::26/09/2023 M:::::