Pandit Deendayal Petroleum University

IA 2 Examination
B. Tech. (CSE)
Semester - IV

Date:31/03/2022
Time:1 h 30 min
Max. Marks:30

Course Name : Theory of Computation
Course Code : 20CP206T

Instructions:
1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

Part-A
ANSWER ALL THE QUESTIONS (10 Marks)

Question No.	Description	Marks	Course Outcome (CO)
Que-1	Convert following grammar into GNF: S→AB A→epsilon/aAb B→aBb/epsilon After conversion of GNF, design the PDA of the same grammar	10	CO4

Part-B
ANSWER ALL THE QUESTIONS (4 x 5 Marks = 20 Marks)

Que-1	Construct a Context free grammar for balance parenthesis. Design a PDA for the same. For example: ((())), (() () ()) are the example of balance parenthesis. ((), (() () are the not balanced parenthesis.	10	CO4
Que-2	Design a transducer to reverse the input string. For example: if input is BBBaabbaBBB then output will be BBBabbaaBBB.	10	CO5