Vidyavardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science

AY: 2024-25

Class:	TE	**Semester:**	V
Course Code:		**Course Name:**	AI

Name of Student:	Sainath Khot
Roll No. :	20
Assignment No.:	4
Title of Assignment:	
Date of Submission:	
Date of Correction:	

Evaluation

Performance Indicator	Max. Marks	Marks Obtained
Completeness	5	
Demonstrated Knowledge	3	
Legibility	2	
Total	10	

Performance Indicator	Exceed Expectations (EE)	Meet Expectations (ME)	Below Expectations (BE)
Completeness	5	3-4	1-2
Demonstrated Knowledge Legibility	3	2	1
Legibility	2	1	0

Checked by

Name of Faculty :

Signature :

Date :

AI 4

Q1 Factorial in Prolog

```
Factorial (0,1)
Factorial (N, Result)
    N>0
    N1 is N-1
    Factorial (N, Result)
    Result is N * Result
```

Output

```
Factorial (4, Result)
Result is 24
```

Q2

=> ∵ Statement to be proven

Someone is smiling

∴ Negation

No one is smiling

=> ∄ → Smiling (x)

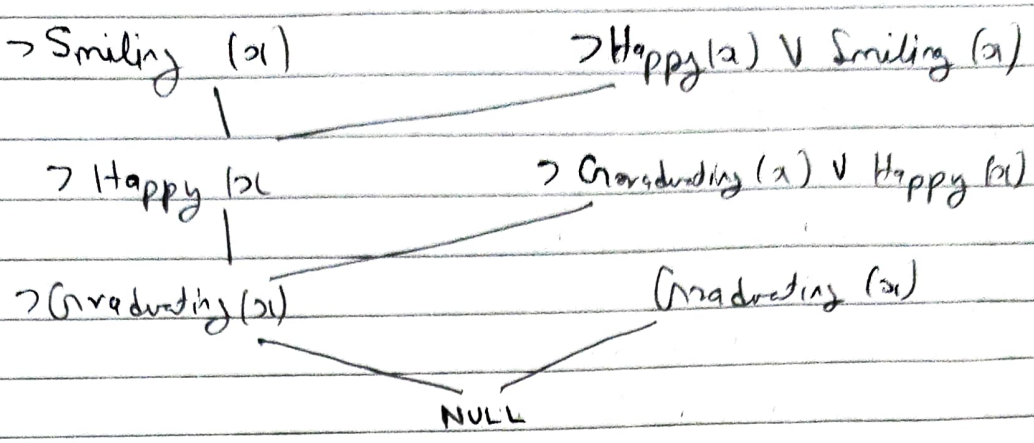
1) CNF

a) → Graduating (x) ∨ Happy (x)

b) → Happy (x) ∨ Smiling (x)

c) Graduating (N)

d) → Smiling (x)



S1) ¬ Smiling (x)

S2) Take an axiom which will negate the negation

¬ Smiling (x) ¬ Happy (x) V Smiling

S3) Take an axiom which will negate the negation

¬ Happy (x) ¬ Graduating (x) V Happy (x)

S4) Take an axiom which will negate on negation

¬ Graduating (x) Graduating (x)

NULL

∴ The tree is right.