

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER–VIII (NEW) EXAMINATION – WINTER 2020****Subject Code:2180703****Date:25/01/2021****Subject Name:Artificial Intelligence****Time:02:00 PM TO 04:00 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is artificial intelligence? Define the different task domains of artificial intelligence. **03**
- (b) Describe the production system. **04**
- (c) Explain state space representation for water jug problem. **07**
- Q.2** (a) Differentiate propositional & predicate logic. **03**
- (b) What is clausal form? How is it useful? **04**
- (c) Solve the following Cryptarithmic Problem. **07**
- SEND
+MORE

MONEY
- Q.3** (a) Define simulated annealing **03**
- (b) Define Non monotonic reasoning. **04**
- (c) Explain the Forward and Backward Reasoning. **07**
- Q.4** (a) Define unification. **03**
- (b) How Knowledge is represented? **04**
- (c) Explain Inference Rules in Propositional Calculus. **07**
- Q.5** (a) What is learning? What are its types? **03**
- (b) Write a PROLOG program to count total occurrence of a character in a given list of characters. **04**
- (c) Explain alpha-beta cut off search with an example. State a case when to do alpha pruning. **07**

Q.6	(a)	Define Inductive Bias.	03
	(b)	Discuss the concept of LIST in prolog with suitable example.	04
	(c)	Explain steps of Natural Language Processing.	07
Q.7	(a)	Explain the difference between Boolean and Fuzzy Set membership using a suitable example.	03
	(b)	Discuss Bay's theorem.	04
	(c)	What is a "Semantic Net"? Illustrate 'property inheritance' in Semantic Network using "isa" and "instance" attributes.	07
Q.8	(a)	What is meant by Perceptron?	03
	(b)	Explain AO* algorithm.	04
	(c)	Explain Min Max procedure in game playing.	07
