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**ARTIFICIAL INTELLIGENCE  
DU0360**

**QUESTION 1:  
EXPLAIN POSITIVE AND NEGATIVE IMPACTS OF CHATGPT TO EDUCATION**

**Positive Impacts**

1. Personalized and Adaptive Learning: CHATGPT AI tailors responses based on student proficiency, enabling customized learning.

2. Enhanced Accessibility and Inclusion: AI assists students with disabilities, language barriers, and resource constraints.

3. Automating Repetitive Academic Tasks: AI automates grading, lesson planning, and feedback generation for educators.

4. Augmenting Research and Knowledge Expansion: AI accelerates research by summarizing papers and extracting keywords.

**Negative Impacts**

1. Over-Reliance and Cognitive Decline: Excessive dependence on AI may reduce critical thinking and creativity.

2. Misinformation and Hallucination Risks: AI-generated content may include incorrect or misleading information.

3. Ethical Concerns and Academic Integrity: AI can be misused for plagiarism and academic dishonesty.

4. Bias and Fairness Issues - AI models may reflect biases present in training data, impacting fairness.

**QUESTION TWO   
EXPLAIN THE VARIOUS MACHINE TRANSLATION METHODS**

**Machine Translation Methods**

**Rule-Based Machine Translation (RBMT):**

RBMT relies on linguistic rules and dictionaries for translation. It follows morphological analysis, syntactic parsing, and semantic analysis to generate structured translations.

**Statistical Machine Translation (SMT)**

SMT uses probability distributions and large bilingual corpora to predict translations. It is flexible but requires extensive training data.

**Neural Machine Translation (NMT)**

NMT leverages deep learning and transformers for high-quality translations. It considers entire sentence context, making it the most advanced MT method.

**QUESTION THREE**

**HOW MANY FACTS, RULES, CLAUSES, AND PREDICATES ARE THERE IN THE FOLLOWING KNOWLEDGE BASE? WHAT ARE THE HEADS OF THE RULES, AND WHAT ARE THE GOALS THEY CONTAIN?**

**Knowledge Base Analysis (Prolog)**

**Facts**

The following facts are present in the knowledge base:

1. loves(vincent, mia).

2. loves(marsellus, mia).

3. loves(pumpkin, honey\_bunny).

4. loves(honey\_bunny, pumpkin).

**Rules**

One rule is defined: jealous(X,Y) :- loves(X,Z), loves(Y,Z).

**Clauses**

Total clauses: 5 (4 facts + 1 rule).

Predicates

Total predicates: 2 (loves/2 and jealous/2).

Heads & Goals

Head: jealous(X,Y)

Goals: loves(X,Z), loves(Y,Z)