Department Name: Artificial Intelligence and Data Science
Course Code & Name: 23ADT202& Artificial Intelligence Laboratory
Semester & Year: 3th Semester & 2 nd year (A&B)
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UNIT 5

Acting under uncertainty – Bayesian inference – naïve Bayes models. Probabilistic reasoning Bayesian networks – exact inference in BN – approximate inference in BN – causal networks.

QUESTION BANK WITH ANSWERS
PART A

1.Define uncertainty and list the causes of uncertainty.
2.Define Probabilistic reasoning. Mention the need of probabilistic reasoning in AI
3.List the Ways to solve problems with uncertain knowledge.
4.Define Probability and the probability of occurrence.
5.Define the terms event, sample space, random variables, prior probability and posterior probability.
5.Define Conditional probability.
6.List Bayes Theorem or Bayes Rule
Suppose we want to perceive the effect of some unknown cause, and want to compute that cause, then the Bayes' rule becomes:
7.Consider two events: A (it will rain tomorrow) and B (the sun will shine tomorrow).
8.What are the Application of Bayes' theorem in Artificial intelligence?
9.Define Bayesian Network.
10.Define Joint probability distribution.
11.Write an algorithm for Constructing Bayesian Network
12.Define Global semantics and local semantics.
13.What are the Applications of Bayesian networks in AI?
14.Define Bayesian Inference.
15.List the common exact inference algorithms
16.Define Causal Network or Causal Bayesian Network
17.Define Structural Causal Models (SCMs).

PART-B

1.Explain the concept of uncertainty and acting under uncertainty with suitable example. Explain in detail about probabilistic reasoning.

2.Explain in detail about Bayesian inference and Naive Bayes Model or Naive Bayes Theorem or Bayes Rule.

3.Explain in detail about Bayesian Network

4.Explain in detail about Bayesian Inference and its type Exact Inference with

suitable example.

5. Explain Causal Network or Causal Bayesian Network in Machine

6.Explain approximate inference in Bayesian network (BN)