**Subject: Probabilistic Graphical Model (PGM)**

**Class: TE-CMPN-Sem-V (DLE)**

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| **Assignment No.** | **Assignment Questions** | **CO** |
| 1. | What probabilistic models are employed for recommendation systems in e-commerce platforms? | CO1 |
| 2. | What role does probability theory play in predicting equipment failures and scheduling maintenance in industrial settings? | CO1 |
| 3. | How can graph theory be applied to optimize the routing and scheduling of delivery trucks in a large logistics company? | CO2 |
| 4. | Explain with an example of how Bayesian networks help in modeling and predicting stock market trends or asset price movements? | CO2 |
| 5. | What role do Bayesian networks play in network traffic analysis and anomaly detection? | CO2 |
| 6. | What role do Bayesian networks play in personalized medicine and treatment recommendations based on patient data? | CO3 |
| 7. | How can Markov network models help in identifying influential nodes or detecting communities within social networks? | CO3 |
| 8. | What are the advantages of using Markov networks over traditional financial models for predicting market movements? | CO4 |
| 9. | Can you explain the use of HMMs in voice assistants and how they help convert spoken words into text? | CO5 |
| 10. | How can Hidden Markov Models be applied to model the spread of infectious diseases and predict disease outbreaks? | CO5 |
| 11. | How are Hidden Markov Models applied to anomaly detection in network security, industrial systems, and fraud prevention? | CO6 |

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