Total No. of Questions : 4]

**P-5322** 

## SEAT No. :

[Total No. of Pages : 2

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## B.E. (Artificial Intelligence & Data Science) (Insem.) DATA MODELING & VISUALIZATION (2019 Pattern) (Semester - VII) (417522)

<i>Time</i> : 1 1	Hour]	Max. Marks : 30
Instructions to the candidates:		
1)	Answer Q.1 or Q.2, Q.3 or Q.4.	6
2)	Neat diagrams must be drawn wherever necessary.	$\sim$
3)	Figures to the right side indicate full marks.	
4)	Assume Suitable data if necessary.	
<i>Q1</i> ) a)	Explain in detail Positive, negative and zero covariance graphs.	with appropriate [5]
b)	Differentiate between Discrete and Continuous random the help of an example.	m variables with [5]
c)	Explain following discrete distributions :	[5]
	i) Geometric distribution	20
	ii) Binomial distribution OR	
OR S		
<b>Q2</b> ) a)	Define and explain maximum likelihood estimation.	[5]
b)	Explain Chebyshev Inequality with the help of an exam	ple
c)	Define Descriptive Statistics and Graphical Statistics. Estimation Methods.	Explain different [5]
<b>Q3</b> ) a)	Define Poisson process. Poisson process is a suitable in rare events. Justify?	stochastic model [5]
b)	Calculate Pi Using Monte Carlo method.	[5]
c)	How does a queuing system work? What happens wi goes through a queuing system?	th a job when it [5] <i>P.T.O</i> .
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- Q4) a) Explain the steps of Hypothesis Testing.
  - b) Draw a neat diagram of Right-tail, Left-tail and Two sided Z-test and locate Acceptance and rejection regions. [5]

[5]

c) Explain Transition State Diagram and Emission State Diagram of Hidden Markov Model with the help of example. [5]

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