Total No. of Questions : 4]

PA-10120

SEAT No. :

[Total No. of Pages : 1

[6009]-424

T.E. (Artificial Intelligence & Data Science) (In sem)

DATA SCIENCE

(2019 Pattern) (Semester-II) (317529)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) *Solve questions Q.1 or Q.2, Q.3 or Q.4.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Assume suitable data necessary.*

Q1) a) Compare Business Intelligence Vs. Data Science. [5]

b) List and explain data reduction techniques with example. [5]

c) What is Data wrangling? Explain various methods of Data wrangling. [5]

OR

Q2) a) What is Data Science? Differentiate between Data Science and Information Science? [5]

b) Describe Bayes theorem with an example. [5]

c) Differentiate Structured and Unstructured Data. [5]

Q3) a) For the given numbers find out the variance and standard deviation. 1, 2, 3, 4,5, 6. [5]

b) Explain the use of hypothesis and hypothesis testing. [5]

c) What is Data Integration and Discretization explain? [5]

OR

Q4) a) Define measures of central tendency and given the five annual salaries of an industry shown in Table, determine the mean and the median. [5]

Position	CEO	Manager	Developer	Tester	Custodian
Salary	$10,00,000	$55,000	$40,000	$30,000	$20,000

b) What does the Pearson correlation coefficient test do explain with an example. [5]

c) Explain Type I and Type II errors with an example. [5]

Total No. of Questions : 6]

SEAT No. :

PA-10121

[Total No. of Pages : 2

[6009]-425

T.E. (AI & DC) (Insem)

CYBER SECURITY

(2019 Pattern) (Semester - II) (317530)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates :

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Assume suitable data if necessary.*

Q1) a) List and explain various elements of Information Security. [5]

b) Write difference between security and privacy. [5]

OR

Q2) a) Enlist the security goals and mechanisms. [5]

b) Draw and explain operational security model for network security. [5]

Q3) a) Define cyber security. Explain Active and passive attack. [5]

b) Explain Feistel cipher. [5]

OR

Q4) a) Explain ceaser cipher with example. [5]

b) Explain DES Algorithm. [5]

Q5) a) Explain Monoalphabetic cipher with example. [5]

b) Compaire symmetric key cryptography and Asymmetric key cryptography. [5]

OR

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Total No. of Questions : 4]

2013

SEAT No. :

PA-10122

[Total No. of Pages : 1

[6009]- 426

T.E. (Artificial Intelligence and Data Science) (Insem)
ARTIFICIAL NEURAL NETWORK
(2019 Pattern) (Semester - II) (317531)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) *Answer Q.1 or Q.2, Q.3 or Q.4.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right side indicate full marks.*
4) *Assume suitable data, if necessary.*

Q1) a) What is a neural network activation function? State its Types? [5]

b) Explain architecture of Artificial Neural Network with a neat diagram. [5]

c) Explain Mc-Culloch & Pitts model with an example. [5]

OR

Q2) a) What are the main differences among the three models of artificial neuron, namely, McCulloch-Pitts, Perceptron and Adaline? [5]

b) Explain the structure and working of Biological Neural Network? [5]

c) Differentiate between Biological Neural Network and Artificial Neural Network. [5]

Q3) a) Explain Perceptron Learning Algorithm with an example. [5]

b) Explain the architecture of Multilayered neural network. [5]

c) Write and explain the steps of Back Propagation Learning algorithm. [5]

OR

Q4) a) Draw the architecture of Back Propagation Network and explain in detail. [5]

b) Differentiate between Feed forward and Feedback neural network. [5]

c) What is Error Correction and how to minimize these errors? [5]

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Total No. of Questions : 4]

SEAT No. : 2013

PA-10044

[Total No. of Pages : 1

[6009]-327

T.E. (Computer/A.I&D.S) (Insem.)

CLOUD COMPUTING (Elective - II)

(2019 Pattern) (Semester - II) (310254C)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) *Answer Q1 or Q2, Q3 or Q4.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks*
4) *Assume suitable data if necessary.*

Q1) a) Define Cloud Computing & Explain the importance of Cloud Computing? **[5]**

b) Explain Cloud System Architecture suitable diagram? **[5]**

c) Discuss Cloud Deployment Models with suitable diagram? **[5]**

OR

Q2) a) Describe the Trends in Cloud Computing? **[5]**

b) Draw and Explain Cloud Service Model? **[5]**

c) Explain Seven-step model of migration into a Cloud? **[5]**

Q3) a) Explain how the Cloud Data Management Works? **[5]**

b) How the HDFS Architecture works? Explain it with suitable diagram? **[5]**

c) Explain the Storage Area Network with suitable diagram? **[5]**

OR

Q4) a) Explain the features of GFS Architecture? **[5]**

b) Describe Data Intensive Technologies for Cloud Computing? **[5]**

c) Identify the advantage and disadvantageous of Direct Attached Storage? **[5]**

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Total No. of Questions : 4]

SEAT No. : T1910920

PA-10124

[Total No. of Pages : 1

[6009]-428

T.E. (Artificial Intelligence and Data Science) (Insem)

NATURAL LANGUAGE PROCESSING

(2019 Pattern) (Semester - II) (317532 (B)) (Elective - II) (Theory)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) *Solve questions Q.1 or Q.2 and Q.3 or Q.4.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Assume suitable data, if necessary.*

Q1) a) Explain Generic Natural Language Processing System in detail. [5]

b) List and explain the challenges of Natural Language Processing. [5]

c) Describe knowledge-based approaches used in NLP. [5]

OR

Q2) a) List and explain different Levels of Natural Language Processing. [5]

b) Explain the applications of Natural Language Processing. [5]

c) Describe rule-based approaches used in NLP. [5]

Q3) a) What is Morphology? Which are the types of Morphology? [5]

b) Explain Morphological Parsing with Finite-State Transducers. [5]

c) Discuss the term Word and Sentence Tokenization. [5]

OR

Q4) a) Describe N-gram for language model using suitable example. [5]

b) Explain Orthographic Rules and Finite-State Transducers. [5]

c) Explain Derivational & inflectional morphology in detail. [5]

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