

December 2023

B.Tech (EETOT) B.Tech VI SEMESTER

Data Analytics (EEN-OE4-703)

Time: 3 Hours

Max. Marks:75

- Instructions:**
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
 2. Answer any four questions from Part -B in detail.
 3. Different sub-parts of a question are to be attempted adjacent to each other.
 4. ~~Any other specific instructions~~

PART-A

- Q1 (a) Define Data Structure. List different operation performed on data structure ? (1.5)
- (b) State the advantages of bottom-up chart parser compared to top-down parsing. (1.5)
- (c) What is linked list ? How its different from array ? (1.5)
- (d) Differentiate between stack and queue ? (1.5)
- (e) What is random variable ? (1.5)
- (f) What is supervised learning and its types ? (1.5)
- (g) What is meant by Lexicon? How is it useful in NLP? (1.5)
- (h) What is Hierarchical clustering ? (1.5)
- (i) What is text classification ? (1.5)
- (j) What is collision and how its handle? (1.5)

PART-B

- Q2 (a) Explain the algorithm of Binary Search, and compare it with the Linear Search with its time complexity. (10)
- (b) Explain ADT. List the Linear and Non Linear data structure with example? (5)
- Q3 (a) Explain Meaning, Objective and Scope of HRM ? (5)
- (b) 1. State Baye's Theorem and Discuss Type-I and Type -II error. (10)
2. When a machine is set correctly, it produces 25% defectives; otherwise it produces 60% defectives. From the past knowledge and experience, the manufacturer knows that the chances that the machine is set correctly or wrongly are 50:50. The machine was set and before commencement of production, one piece was inspected and found to be defectives. What is the probability of machine set up being correct?
- Q4 What do you understanding by hashing? Consider Inserting the keys (15)
- 26,37,59,76,65,86 into a Hash table of size $m = 11$. Using linear Probing, consider the primary hash function is $h'(k) = k \bmod m$

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- Q5 (a) What are the business fundamentals teamwork in business? (5)
 (b) Define HRM? Discuss it's evolution in detail. (10)
- Q6 (a) Discuss various level of NLP in details. (10)
 (b) List and explain challenges of Natural Language Processing. (5)
- Q7 Write short note (*Any Three*): (5 x 3)
 a) AVL Tress.
 b) Data Visualisation.
 c) Lexical analysis
 d) Graph Traversal Technique

PART A

- (1.1) Define Data Structure. List *****
 (1.2) State the advantages of bottom-up data structure compared to top-down parsing.
 (1.3) What is linked list? How is different from array?
 (1.4) Differentiate between stack and queue?
 (1.5) What is random variable?
 (1.6) What is supervised learning and its types?
 (1.7) What is meant by taxonomy? How is it useful in NLP?
 (1.8) What is hierarchical clustering?
 (1.9) What is text classification?
 (1.10) What is feature and how to identify?

PART B

- Q2 (a) Explain the algorithm of binary search and compare it with the linear search. (10)
 (b) Explain ADT. List the Linear and Non Linear data structure with examples. (5)
- Q3 (a) Explain Meaning, Objective and Scope of NLP? (5)
 (b) 1. State Baye's Theorem and Discuss Type-I and Type-II error. (10)
 2. When a machine is set correctly it produces 10% defective airplanes. It produces 80% defectives from the past knowledge and experience. The manufacturer knows that the chance that the machine is set correctly is 20%. The machine was set and before commencement of production, one piece was inspected and found to be defective. What is the probability of machine set up being correct?
- Q4 (a) What do you understand by heuristics? Consider learning the text. (15)
 (b) Consider the primary hash function $h(k) = k \bmod m$. 26-1759, 26-6588 are a hash table of size $m=11$. Using linear probing.

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