

**MCA 3rd Semester Examination, 2024**

**MCA**

PAPER – MCA-305

*Full Marks : 100*

*Time : 3 hours*

Answer all questions

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

( D : *Natural Language Processing* )

GROUP – A

Answer any five questions :  $2 \times 5$

1. What do you mean by Natural Language Processing ?

( Turn Over )

2. List two real life applications of NLP.
3. What is smallest unit of text ? Give example.
4. What is Word Vector ?
5. What do you mean by n-gram ?
6. What is WSD ?
7. Define Morphology.
8. What do you mean by noisy text ?

**GROUP – B**

Answer any **four** questions :                      15 × 4

9. Differentiate between Stemming and Lemmatization. Explain Porter's Algorithm for Stemming with suitable example.                      5 + 10

**10. Generate the Parse Tree of the following sentences and comments on their Syntactic structures.**

(a) The 2021 Summer Olympics was held in Tokyo.

(b) The 2022 FIFA World Cup was won by Argentina.

(c) Satyajit Ray was awarded academy award in 1992. 5 + 5 + 5

**11. Write short notes on following topics : 7 + 8**

(a) Text Classification

(b) Supervised Learning.

**12. Explain the steps involved in POS tagging. Discuss Language Model. 6 + 9**

**13. Remove stop words from the following sentences :**

(a) Kapil Dev was the captain of the Indian cricket team that won the 1983 Cricket World Cup.

(b) Narendra Modi is the Prime Minister of India.

Differentiate between Natural Language Understanding and Natural Language Processing ? Explain the various metrics used for evaluating NLP task ?  $(2 + 2) + 4 + 7$

14. What do you know about sentiment analysis ? Write down the impact of e-commerce and social media corpus on NLP task.  $6 + 9$

15. Write down the Minimum Edit Distance (Levenshtein) Algorithm. And compute the minimum edit distance between "EXECUTION" and "INTENTION".  $6 + 9$

( 5 ) .

16. Why tokenization is important for preprocessing ? Write down the difference between inflectional and derivational morphology. What do you mean by Homonymy and Hyponymy ? 6 + 5 + 4

**[ Internal Assessment – 30 Marks ]**

( E : *Cloud Computing* )

GROUP – A

Answer any five questions : 2 × 5

1. Define Cloud.
2. What is cloud stack ?
3. What is the concept of utility computing that are incorporated in cloud computing ?

4. What does “pay-as-you-go” refers in cloud computing ?
5. Why is QoS important for cloud computing ?
6. What does the word ‘service’ refers in service-oriented computing ?
7. What is the vision of cloud ?
8. Name some largest cloud service providers along with their type of cloud service they provide ?

**GROUP – B**

Answer any **four** questions : 15 × 4

9. What are the technologies in which cloud relies on ? Discuss each of them. 1 + 14
10. Briefly summarize the cloud reference model. Also discuss the challenges still open in cloud computing. 10 + 5

11. With the help of diagram explain the different components forming an IaaS solution. 5 + 10
12. What is virtualization ? What are the benefits of virtualization in context to cloud computing ? Discuss the machine reference model of execution virtualization. 2 + 5 + 8
13. Briefly discuss the cloud computing architecture along with its block diagram. Also explain the different types of cloud. 8 + 7
14. What is the task of hypervisor in hardware level virtualization ? Graphically represents the two major types of hypervisors and explain both of them. 5 + 10
15. What is Privileged and Non-privileged mode of instruction ? Explain the ring-based security in privileged mode. Also discuss and draw the taxonomy of virtualization techniques. 4 + 5 + (2 + 4)

16. Write short notes on (any *three*) : 5 × 3

(i) AWS

(ii) Microsoft Azure

(iii) Hadoop

(iv) Google App Engine

(v) Aneka.

**[ Internal Assessment – 30 Marks ]**