Reg. No.															

B.Tech. DEGREE EXAMINATION, NOVEMBER 2023

Sixth Semester

18CSE481T – APPLIED MACHINE LEARNING

(For the candidates admitted from the academic year 2020-2021 & 2021-2022)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours | Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

	Marks	BL	CO	PO
1. NLTK tokenize (A) Word and sentence (B) Strings and special characters (C) Stop words and vowels (D) Preposition and adjectives	1	1	1	1
2. Stem the words, Cooking _____? Caring _____? (A) Cooked and care (B) King and ring (C) Cooking and caring (D) Cook and car	1	1	1	1
3. Example of VBP and VBZ _____? (A) Date and dating (B) Cook and cooking (C) Eat and eating (D) Eat and eats	1	1	1	1
4. PoS of "I Like the Watch" (A) Pro, Verb, Pro, Noun (B) DT, Noun, Verb, DT (C) DT, Vern, noun, DT (D) Pro, Pro, Noun, Verb	1	1	1	3
5. ASR _____? (A) Automatic sound recognition (B) Automatic speech recognition (C) Audio sound recurrence (D) Automatic signal recognition	1	1	2	2
6. Speaker independent models recognize the speech patterns of _____. (A) Only one person (B) A large group (C) Consecutive speech signals (D) Small signals separation	1	1	2	3
7. Voice recognition _____. (A) Translate anyone's voice (B) Translate signals to signals (C) Understand a specific user's voice (D) Understand speech signals	1	1	2	3
8. Time series data can be classified into _____ and _____. (A) Discrete and time bound (B) Metrics and events (C) Metrics and momentum (D) Regular and continuous	1	1	2	2

9. Part of speech tagging is a _____ problem. 1 1 3 3
   (A) Classification (B) Iterative
   (C) Grammatical (D) Direct-prediction

10. _____ is said to be, it is for forecasting future trend 1 1 3 3
   (A) Data science (B) Pattern analysis
   (C) Time series data (D) Frequency domain data

11. Sale of ice-cream during summer season is an example of _____. 1 1 3 2
   (A) Trend (B) Cyclicity
   (C) Seasonality (D) Prediction

12. Match the best fit - stationary and non-stationary are _____. 1 2 3 2
   (A) Data types of time series (B) Different materials used for devices
   (C) Not related to signals (D) Voice signal separation

13. Feature extraction is a process of _____. 1 2 4 2
   (A) Low-level vision (B) Intermediate-level vision
   (C) High level vision (D) Time series data

14. _____ is connected with obtaining accurate measurements from images. 1 2 4 2
   (A) Image processing (B) Pattern analysis
   (C) Photogrammetry (D) Vision computing

15. To identify a certain class of image, is a process of _____. 1 2 4 3
   (A) Object detection (B) Image classification
   (C) Image separation (D) Object processing

16. Capturing, extracting, comparing and matching are the process of _____. 1 1 4 3
   (A) Biometric (B) Data analysis
   (C) Pattern analysis (D) Image processing

17. Behavioural biometrics is based on _____. 1 1 4 3
   (A) Part of human body data (B) Physiological data
   (C) Data derived from action (D) Human face reaction

18. Visionics defines the landmarks as _____. 1 1 4 3
   (A) Focal points (B) Nodal points
   (C) Data points (D) Vision points

19. Negative images _____. 1 1 3 2
   (A) Do not contain the object we want to detect (B) Contain the object we went to detect
   (C) Poor resolution images (D) Blurred images

20. PCA _____. 1 2 4 3
   (A) Principal component analysis (B) Prime computer vision analysis
   (C) Prime character analysis (D) Principal character analysis

PART – B (5 × 4 = 20 Marks)

Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	Give an example python code for bag of words.	4	3	1	1
22.	How to build a test classifier? Give a python code.	4	3	1	2
23.	Differentiate between reading and plotting audio data.	4	3	2	2
24.	Relate the use of CRF model with machine learning analysis.	4	4	2	2
25.	How gray scale images are identified? Give your answers.	4	4	3	3
26.	How to visualize the key points on the input image?	4	5	4	2
27.	Why blind source separation is used in biometric analysis?	4	5	4	2

PART – C (5 × 12 = 60 Marks)

Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	How do use sentiment analysis? Take a twitter trend and give your relevant answers.	12	3	1	3
	(OR)				
b.	How text feature engineering works for various text analysis? Give the clear picture on various text processing operations.	12	3	1	3
29. a.	Relate the role of Fourier transform in speech recognition? How it can be used for various analysis?	12	3	2	1
	(OR)				
b.i.	How synthesizer function works?	6	3	2	1
ii.	How to extract frequency domain features?	6	3	2	1
30. a.	What are Pandas and Numpy? Why it is important in time series analysis? Justify your answer with relevant explanations.	12	4	3	3
	(OR)				
b.	Give the steps and procedure in training a HMM model. Extend your answers with how HMM can be used to visualize.	12	4	3	3
31. a.i.	Write a short note on histogram equalization.	6	4	4	3
ii.	Differentiate between image processing and computer vision.	6	4	4	3
	(OR)				
b.	Give a detail note on SIFT. Relevant to detection and feature point.	12	4	4	3

32. a.	Apply PCA for the below operations			5	4	3
	(i)	Perform kernel	4			
	(ii)	Plot and transform data	4			
	(iii)	Plot kernel PCA transformed data	4			

(OR)

b.	With all relevant justifications why biometric recognition is the need of the hour? Give your answers with all required technical explanations (capturing, processing resizing and scaling).		12	5	4	2

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