Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: MAR / APR 2025
Faculty: Science and Technology

Program: BSc(Computer Science) **Semester: VI** **SET: A**
Program (Specific): (Computer science) **Course Type: DSEC-II**
Class: TYBSc (Computer Science) **Max.Marks: 35**
Name of the Course: Data Analytics
Course Code: 24CS364 **Time: 2Hr**
Paper: I

Instructions to the candidate:

1) *There are 4 sections in the question paper. Write each section on a separate page.*
2) *All Sections are compulsory.*
3) *Figures to the right indicate full marks.*
4) *Draw a well labeled diagram wherever necessary.*

SECTION: A

Q1) Answer the following question. **[5 x 1 = 5]**

I) Which analytics deals with prediction of future based on the available current and past data?
a) Descriptive Analytics c) Diagnostic Analytics
b) Mechanistic Analytics d) Predictive Analytics.

II) Logistic Regression can be divided into:
a) Binomial c) Multinomial
b) Ordinal d) All of mentioned.

III) If {A,B,C,D} is a frequent item set, candidate rules which is not possible is,
a) C → A c) A → BC
b) D → ABCD d) B → ADC

IV) What is process of finding a model that describes the data classes or concepts?
a) Regression c) Classification
b) Mining d) Discovery

V) Which collection of techniques is used for working with human language?
a) NDP c) NLP
b) NML d) NDLP

Q2) Answer any 4 of the following in one sentence. **[4 x 1 = 4]**

I) Define Data Analytics
II) State any 2 applications of NLP.
III) Define frequent pattern.

IV) Define Link prediction.
V) What is the purpose of n-grams?
VI) Define Deep Learning.

SECTION: B

Q3) Answer any 4 of the following **[4 x 2 = 8]**

I) State type of Machine Learning and explain any one.
II) Difference between Data Analysis and Data Analytics.
III) Short note on Bag of words.
IV) What is Logistic Regression and Sigmoid function.
V) Explain kNN and its 2 advantages.
VI) What are challenges of social media analysis?

SECTION: C

Q4) Answer any 4 of the following. **[4 x 2 = 8]**

I) Explain Data Mining with diagram.
II) Compare between Supervised and Unsupervised Learning. (any 4 points)
III) The following database has 4 transactions

TID	Transactions
T1	{ K A D B }
T2	{ D A C E B }
T3	{C A B E }
T4	{ B A D }

Find support and confidence for following.
i] A → D ii] D → AB
iii] BD → A iv] D → B

IV) Explain the social media analytics life cycle with diagram.
V) Short note: Naïve Bayes.
VI) Write Lifecycle of Data Analytics.

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SECTION: D

Q5) Answer any 2 of the following **[2 x 5 = 10]**

I) With the help of diagram describe relationship between Artificial Intelligence, Machine Learning and Deep Learning.

II) A database have 5 transactions. Let min support = 60% and min confidence = 80%.

TID	Items Bought
T100	M O N K E Y
T200	D O N K E Y
T300	C A K E
T400	D U C K E Y
T500	C O O K I E

Find all frequent itemsets using Apriori Algorithm.

III) Explain Data Analytics framework in detail.

IV) Generate FP tree for following transaction datasets with min_support = 3.

TID	Item Brought
100	F A C D G L M P
200	A B C F L M O
300	B F H I O
400	B C K S P
500	A F C E L P M N