END SEMESTER EXAMINATION – MARCH 2025

SEMESTER **8: INTEGRATED M. Sc. PROGRAMME IN COMPUTER SCIENCE – DATA SCIENCE**

COURSE : : 21UP8CRMCP27: BUSINESS INTELLIGENCE AND ANALYTICS

(*For Regular 2021 Admission*)

Time: Three Hours   Max. Weightage: 30

PART A

Answer any 8

1. Define an Artificial Neural Network. List any 4 business problems that can be solved
    using ANN.   (U)

2. Define operational control, managerial control, and strategic planning. Provide
    two examples of each.   (An)

3. List the three V's in Big data.   (R)

4. Define the term bigdata.   (R)

5. List the characteristics of KPI.   (U)

6. Define TDM.   (U)

7. Give examples of BI in cloud.   (An)

8. Define a scenario.   (U)

9. Data is the new natural resource. Give reasons.   (An)

10. Define Information Gain and Gini Index in the context of decision trees.   (R)

                                                                                          (1 x 8 = 8 Weight)

PART B

Answer any 6

11. With the help of a diagram explain the high-level architecture of BI.   (An)

12. Describe the four steps managers take in making a decision.   (An)

13. Discuss the various big data technologies.   (U)

14. Explain the three types of web mining.   (U)

15. Write short note on KPIs.   (U)

16. Explain the applications of BI in customer relationship management,
    health care and banking.   (An)

17. Define an association rule. Create a model that performs association rule mining.   (Cr)

18. Given below is a dataset that helps a company to predict monthly sales revenue ($1000s) based
    on their advertising budget ($1000s).

ID	1	2	3	4	5	6	7	8	9	10
Advertising Spend($1000s)	1.5	2.0	2.8	3.3	3.9	4.5	5.2	5.8	6.1	6.7
Sales Revenue ($1000s)	7.8	10.2	10.5	12.8	13.9	16.7	17.5	18.3	20.0	22.1

Predict the Sales Revenue if the next advertising budget spent would be 7.0.   (Cr)

(2 x 6 = 12 Weight)

PART C

Answer any 2

19. Explain the design phase in decision making.   (An)
20. Discuss the features of bigdata in detail.   (U)
21. With the help of a diagram describe the major components of a data warehouse framework.
                                                                                                                        (An)
22. Write the algorithm to implement the decision tree induction. Given below is the dataset of Customer Credit Card Approval. Form the decision tree based on the best splitting attribute.

ID	Income (in $1000s)	Credit Score	Defaulted Loan (Yes=1, No=0)
1	30	600	1
2	50	650	0
3	40	700	0
4	60	720	0
5	35	630	1
6	70	750	0
7	25	580	1

                                                                                                                        (Cr)

(5 x 2 = 10 Weight)