Program: T.Y.B.Sc IT | Semester: V | Program Code: UGIT01

Course: Data Science and Analytics | Course Code: NUIT508

Duration: 1 Hour | Examination Pattern: NEP-Autonomous- External | Max. Marks: 30

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat diagrams wherever necessary.
4. CO (Course Outcome), KL (Knowledge Level).

Examination:

REGULAR

Q. 1		**Attempt any THREE of the following.**	[15]	CO's	KL's
	(a)	Define Apache Spark and state its primary purpose in data processing.		CO1	L1
	(b)	Explain cause-and-effect analysis (fishbone diagram). Describe the procedure to construct a fishbone diagram.		CO2	L2
	(c)	Apply your knowledge of manual, mechanical, and electronic data processing to a real-life organization and explain which type would be most suitable for processing its data.		CO3	L3
	(d)	Analyze the importance of data visualization in business decision-making with suitable real-world examples.		CO4	L4
	(e)	Evaluate the importance of data lakes for businesses and justify how they can support better decision-making and data management.		CO5	L5
Q. 2		**Attempt any THREE of the following.**	[15]	CO's	KL's
	(a)	Machine learning is like having a superpower. Why?		CO1	L1
	(b)	Explain the concept of underfitting in Machine Learning. Discuss its causes and explain the relationship between high bias and low variance in underfitting.		CO2	L2
	(c)	Define Image Recognition and list the major steps involved in the Image Recognition process.		CO3	L1
	(d)	Differentiate between Linear Regression and Logistic Regression.		CO4	L4
	(e)	Explain importance of neural networks in machine learning. Examine how neural networks contribute to solving complex problems.		CO5	L3

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