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25CMP105

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(First Semester)

Branch – **COMPUTER SCIENCE**

CLOUD COMPUTING AND BIGDATA

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Data center automation using virtualization aims at: a) Increasing manual work b) Reducing scalability c) Efficient resource utilization d) Decreasing service reliability	K1	CO1
	2	Container-based virtualization works at: a) Hardware level b) OS level c) Application level d) Storage level	K2	CO2
2	3	Which component is responsible for storing large volumes of unstructured data in cloud storage? a) Hypervisor b) HDFS c) Router d) Switch	K1	CO1
	4	Name one key advantage of parallel programming in cloud. a) Fault tolerance b) Faster processing c) Higher storage capacity d) Reduced virtualization	K2	CO2
3	5	Semi-structured data is best described as: a) Data with strict schema b) Data with flexible schema c) Only text files d) Images only	K1	CO1
	6	How does cloud computing support Big Data? a) Provides scalable resources on-demand b) Reduces network speed c) Replaces all databases d) Converts data into images	K2	CO2
4	7	A customized big data analysis approach is selected based on: a) Data type and purpose b) CPU speed c) Screen resolution d) User interface	K1	CO1
	8	Big Data can improve: a) CRM and personalization b) Office furniture c) Internet speed d) Electrical circuits	K2	CO2
5	9	Which of the following is a key benefit of Big Data for businesses? a) Reducing storage costs b) Improving decision-making c) Limiting user access d) Slowing data flow	K1	CO1
	10	Which type of analytics is focused on predicting future trends? a) Descriptive b) Diagnostic c) Predictive d) Operational	K2	CO2

Cont...

SECTION - B (35 Marks)

Answer **ALL** question

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Classify cloud services into IaaS, PaaS, and SaaS, with suitable examples for each service model.	K2	CO1
		(OR)		
	11.b.	Explain the concept of virtualization and its importance in cloud computing.		
2	12.a.	Demonstrate how layered architecture can be applied in designing a scalable cloud.	K3	CO2
		(OR)		
	12.b.	Examine the significance of HDFS in managing cloud-based big data storage.		
3	13.a.	Analyze the role of cloud computing in facilitating Big Data processing.	K4	CO3
		(OR)		
	13.b.	Demonstrate the impact of Big Data on traditional data processing systems.		
4	14.a.	How does Big Data Analytics help in decision-making? Give an example.	K5	CO4
		(OR)		
	14.b.	What are the challenges of integrating multiple data sources? Give an example.		
5	15.a.	Create a plan to improve supply chain efficiency in a retail company using Big Data analytics.	K6	CO5
		(OR)		
	15.b.	Construct a sampling strategy to analyze sentiment trends from Twitter using Big Data techniques.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	List and define the five essential characteristics of cloud computing as per NIST.	K1	CO1
2	17	Evaluate the benefits and drawbacks of parallel and distributed programming approaches in cloud computing.	K4	CO2
3	18	Design a Big Data warehouse solution using appliances and distributed processing.	K3	CO3
4	19	Evaluate the impact of predictive, prescriptive, and descriptive analytics on business performance. Provide an example.	K5	CO4
5	20	Analyze applications of R Map Mash Up for spatial data visualization in business analytics.	K6	CO5

Z-Z-Z END