25CMP102 / 22CMP102N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(First Semester)

Branch – **COMPUTER SCIENCE**

PYTHON AND R PROGRAMMING FOR DATA SCIENCE

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	Who was the father of artificial intelligence? a) Ray Tomlinson b) Alan Turing c) Herbert Simon d) Ada Lovelace	K1	CO1
	2	Which variable declaration is NOT invalid in python. a)X = "python" b) y,z = "python" c)X=y=z = "python" d) None of the above	K2	CO1
2	3	Continuous variables are _____ variables. a)quantitative b) qualitative c)categorical d) structured	K1	CO2
	4	How many rows will display when the head() command used? a) 12 b) 6 c) 18 d)10	K2	CO2
3	5	Data Visualization identifies a) Relationship in data b) Plot in data c) Noise in the data d) Trend and pattern	K1	CO3
	6	In _____, bars for each category of the categorical variable on the x-axis are kept together. a) grouped bar chart b) Blended bar chart c) Stacked bar chart d) Piled bar chart	K2	CO3
4	7	Which of the following gives the degree and strength of relationship between variables? a) Correlation b) Regression c) Factor analysis d) Classification	K1	CO4
	8	Which of the following is a conglomeration of varied types of data and stored in their native format? a) Structured data b) Unstructured data c) Semi-structured data d) No structured data	K2	CO4
5	9	AI as the science of training machines to perform _____. a) human tasks b) to automate c) speed process d) solving problems	K1	CO5
	10	What is the main reason data becoming valuable? a) It's in large amount b) data security c) meaningful inferences d) data is private	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

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

Module No.	Question No.	Question	K Level	CO
1	11.a.	Describe data science and its related terminologies.	K2	CO1
		(OR)		
	11.b.	Explain the data types in R with example.		
2	12.a.	Analyse the understanding data and key steps Involved in EDA using R Programming.	K4	CO2
		(OR)		
	12.b.	Explain the concept of visualization and discuss the purpose of Histogram, Countplot and Boxplot in data analytics.		
3	13.a.	Illustrate data visualization for machine learning and techniques.	K3	CO3
		(OR)		
	13.b.	Explain the usage and application of pie chart and area chart in data visualization.		
4	14.a.	Explain the dimensionality reduction.	K5	CO4
		(OR)		
	14.b.	Interpret unstructured data in text analysis.		
5	15.a.	Generalize the applications of Artificial Intelligence.	K6	CO5
		(OR)		
	15.b.	Enhance Deep learning and its applications in the field of AI.		

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	Write about NumPy and Pandas library with suitable example.	K1	CO1
2	17	Illustrate various steps in Data Preprocessing.	K3	CO2
3	18	Explain about the data visualization using Ggplots in R.	K4	CO3
4	19	Enhance the application of Factor analysis using R programming.	K6	CO4
5	20	Explain Reinforcement learning with real-time example.	K5	CO5

Z-Z-Z END