

QP CODE: D2BBA2408 (S1)	(Pages: 2)	Reg. No :
		Name :
SECOND SEMESTER FYUGP EXAMINATION, APRIL 2026 (Improvement/Supplementary - 2024 Admissions) Discipline Specific Core (DSC) Courses - Major BBA2CJ103 : Foundations for Business Analytics (Credits: 4)		
Time: 2 Hours	Maximum Marks: 70	
Section A		
Answer the following questions. Each carries 3 marks (Ceiling: 24 marks)		
1. Define Business Analytics.	BL1	CO1
2. State the Axioms of Probability.	BL2	CO3
3. What are the assumptions of a Binomial experiment?	BL1	CO2
4. What is a random variable? Give an example.	BL2	CO2
5. What is the F-Distribution?	BL1	CO2
6. What are the limitations of correlation analysis?	BL2	CO5
7. Why is regression important in predictive modeling?	BL2	CO5
8. What is Method of Least Squares?	BL2	CO6
9. How do index numbers help in comparing economic performance over time?	BL2	CO6
10. What are the main challenges in constructing index numbers?	BL2	CO6
Section B		
Answer the following questions. Each carries 6 marks (Ceiling: 36 Marks)		
11. A speaks truth in 70% cases and B in 85% cases. In what percentage of cases are they likely to contradict each other in stating the same fact.	BL3	CO2
12. Why are the axioms of probability important in probability theory? Explain with illustrations.	BL2	CO2
13. Explain the key properties of Normal Distribution.	BL1	CO3
14. If X and Y are independent Poisson variates such that $P(X=1) = P(X=2)$ and $P(Y=2) = P(Y=3)$. Find the variance of $X+2Y$.	BL3	CO2
15. A market research firm wants to estimate the average monthly expenditure on groceries by households in a city. The firm wants the estimate to be within \$20 of the actual mean with a 95% confidence level. From previous studies, the standard deviation of household grocery expenditure is \$100. Determine the minimum sample size required for the study.	BL2	CO3
(PTO)		

16.	Define parameter and statistic. Distinguish between population and sample with suitable examples.						BL2	CO3
17.	Explain fixed base method and chain base method						BL2	CO5
18.	Fit the quadratic trend for the following time series						BL3	CO6
	Year	1961	1971	1981	1991	1993		
	Population	30	45	55	62	80		
Section C								
Answer any one question. Each carries 10 marks (1 x 10 = 10 Marks)								
19.	(a) State and derive Bayes' Theorem using conditional probability.						BL3	CO2 CO3
	(b) The contents of the three urns are given below. Urn I - 4 black balls, 4 red balls, Urn II - 3 black balls, 5 red balls, Urn III-5 black balls 3 red balls. An urn is chosen at random and a ball is drawn from it. If the chosen ball is red find the probability that it is from urn III.							
20.	"Probability sampling is more significant in sampling".Explain.						BL2	CO3
CO : Course Outcome								
BL : Bloom's Taxonomy Levels (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)								