QP CODE: D2BBA2403	(Pages: 2)	Reg. No	:	....
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SECOND SEMESTER FYUGP EXAMINATION, APRIL 2025

MAJOR COURSE

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 Descriptive Analytics with an example.	BL1	CO1
2.	State the three axioms of probability.	BL1	CO2
3.	What is a Poisson Distribution?	BL1	CO2
4.	What is the mean and variance of a Standard Normal Distribution?	BL1	CO2
5.	Define population parameter and statistic.	BL1	CO3
6.	Define correlation .	BL2	CO5
7.	What factors affect the required sample size for estimating a population mean?	BL2	CO3
8.	Define sampling error in the context of index numbers.	BL2	CO6
9.	Define logarithmic trend.	BL2	CO6
10.	Explain the significance of index numbers in business and finance.	BL2	CO6

Section B

Answer the following questions. Each carries 6 marks (Ceiling: 36 Marks)

11.	Differentiate between mutually exclusive and exhaustive events with suitable examples.	BL2	CO2
12.	A university finds that 70% of students pass Mathematics and 60% pass Science. If the subjects are independent, what is the probability that a student passes both subjects? How can this insight help in curriculum planning?	BL3	CO2, CO3
13.	Define the chisquare-Distribution and explain its key properties.	BL2	CO3

(PTO)

14. What do you understand by probability sampling? Describe stratified and cluster sampling designs. — BL2 CO3

15. Differentiate between the Binomial Distribution and the Normal Distribution with suitable examples. — BL2 CO3

16. A real estate agent wants to predict house prices based on square footage. Given the following data, find the linear regression equation. — BL3 CO4

Square Footage (sq ft)	1500	1800	2100	2500	3000
Price ($1000s)	240	280	310	360	420

17. For the following data calculate chain base index numbers. — BL3 CO5

Year	Price
2000	4
2001	5
2002	6
2003	7
2004	8
2005	10
2006	9
2007	10

18. Illustrate with examples a) Secular trend, b) Seasonal variation, c) Irregular variation, d) Cyclical variation — BL2 CO6

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 CO3

(b) A factory produces 60% of its products in Plant A and 40% in Plant B. The defect rate is 3% for Plant A and 5% for Plant B. If a randomly selected product is found to be defective, what is the probability that it came from Plant A?

20. Discuss the key characteristics of various probability distributions and their real world applications. — BL2 CO2

CO : Course Outcome

BL : Bloom's Taxonomy Levels (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)