

JK Lakshmipat University Jaipur
INSTITUTE OF MANAGEMENT

End Term Examination, May 2026
BBA Semester IV, 2025-26

Roll No.....

FA1108: Principle of Financial Risk Management

Time: 2.5 hours

Max. Marks: 40

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Mention all the assumptions for your answers clearly.
3. A non-memory scientific calculator is allowed.

- Q. 1 Assume that the probability of loss is 3% for two different fleets of trucks. Explain how the risk for both fleets can differ, even when the probability of loss is identical. Justify your answer. Marks4 (CO2, 3)
- Q. 2 What is the difference between Expected Shortfall and Value at Risk (VaR)? Critically examine the theoretical advantage of Expected Shortfall over VaR? Marks4 (CO5)
- Q. 3 To determine expected losses, insurance actuaries apply probability and statistical analysis to loss situations. Explain how the Law of Large Numbers supports the insurance mechanism. Marks4 (CO3)
- Q. 4 Two business owners own identical storage buildings valued at ₹250,000 each. Assume there is a 12% probability each year that a building will be destroyed by a peril, and losses are independent events. With the given information, If the owners decide to pool (combine) their risks instead of bearing them individually, calculate how much risk is mitigated through pooling. Marks4 (CO3,5)
- Q. 5 The change in the value of a portfolio over three months is normally distributed, with a mean of ₹500,000 and a standard deviation of ₹3 million. Calculate the Expected Shortfall at a 99% confidence interval for a three-month time horizon. (Given: 99% C.I. = 2.56 and value of Investment ₹ 2cr) Marks4 (CO3,4)
- Q. 6 Insurer A offers coverage with an annual premium of ₹115,000 and a ₹6,000 per-claim deductible. Insurer B offers coverage with an annual premium of ₹35,000 and a per-claim deductible structure based on expected losses: Marks5 (CO5)

<i>Expected number of losses</i>	<i>Expected Size of losses</i>
12	₹ 2000
8	₹ 10,000
3	₹ 15,000
N= 23	

Which insurance coverage should be selected based on the expected number and magnitude of the claims?

Consider the assumptions as below:

- Premiums are paid at the beginning of the year
- Losses and deductibles are paid at the end of the year
- The appropriate discount rate is 5.5%

- Q. 7 Consider a portfolio consisting of three stocks: SHL Ltd., ALP Ltd., and SHM Ltd., with investment values of ₹2 Cr, ₹3.4 Cr, and ₹4.2 Cr, respectively. The daily standard deviations are 1.5%, 2.1%, and 2.3%, respectively, and the correlation Marks 5 (LO1, 5)

coefficients between the stocks are 0.35, 0.22, and -0.38 .

Calculate the Value at Risk (VaR) of the portfolio at a 99% confidence interval for 10 days.

(Given: 99% C.I. = 2.57)

- Q. 8 Discuss in risk management, volatility is an important measure for the time-based assessment of risk. If given that, the asset price is ₹1,120, and the volatility is 8.5% per annum. Calculate the 10-day volatility at a 95% confidence interval. Marks 5 (CO2, 4)
- (Given: 95% C.I. = 1.96)

- Q. 9 Workers' compensation claims are related to the employee payroll. Estimate the number of claims when the payroll is ₹3,800 (in thousands), based on the following data: Marks 5 (CO1.5)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Payroll in thousands	400	520	710	840	1200	1500	1630	1980	2300	2900
Workers Compensation claims	18	26	48	96	110	150	228	250	260	300

all the best!