2211E795

Candidate's Seat No :_____

M.Sc Sem-3 Examination
503
AMS

Time : 2-30 Hours]   November-2024   [Max. Marks : 70

Instructions: All questions are compulsory. Use of non-programmable scientific calculator is allowed.

Q.1 **(a)** Explain in detail the comparison of NPV and IRR with suitable example. (07)

(b) Define Net Present Value (NPV). (07)
Compute the Net Present Value for a project with a net investment of Rs. 1,00,000 and net cash flow in year one is Rs. 55,000; for year two is Rs. 70,000 and for year three it is Rs. 15,000. Further, the company's cost of capital is 10%. (PVIF 10% for three years are 0.909, 0.826 and 0.751)

OR

(a) Explain with suitable example the Principal of Consistency. (07)
(b) Calculate the following cash flow for a project. (07)

Year	Net cash flows (Rs.)
0	-100
1	10
2	60
3	80

Find out the modified internal rate of return for the project. The project cost of capital is 10%.

Q.2 **(a)** Explain in detail: The Theory of Expectations. (07)
(b) 7-year bond with Rs.1000 face value and an annual coupon rate of 5%. The current market rate of interest is 5.5%. Calculate the Macaulay duration. (07)

OR

(a) Explain in brief the Macaulay duration of the bond and write an expression that establishes the relation between Macaulay duration and Modified duration of the bond. (07)
(b) The price of a Rs.1,000 par bond carrying a coupon rate of 8 percent and maturing after five years is Rs.1020. (07)
  a) What is the approximate YTM?
  b) What will be the realized YTM if the reinvestment rate is 7 percent?

Q.3 **(a)** Find Treynor Ratio and explain which manager is preferable and why? (07)

Managers	Average Annual Return	Beta
Manager A	10%	0.90
Manager B	14%	1.03
Manager C	15%	1.20

(b) Write detailed theory on: The Capital Asset Pricing Model (CAPM) (07)

OR

(P.T.O)

(a) Explain the Markowitz theory indicating its assumptions, Efficient Portfolio, Efficient (07)
Frontier and the limitations of the theory.

(b) Explain Security Market Line (SML) and Capital Market Line (CML) with its graphical (07)
representation.

Q.4 **(a)** Derive the Black-Scholes-Merton formula for a European put option by using the put- (07)
call parity formula.

(b) In usual notations explain and derive the derivative price formula by the method of (07)
Replicating portfolio.

OR

(a) Define: Put-Call Parity. Explain with suitable example the concept of put-call parity (07)
formula for a European option.

(b) Using the following data, compute the price of the associated European call option by (07)
Black-Scholes formula. $S_0 = 1500, X = 1650, r = 0.065, T = 6$ month, $\sigma = 0.30$
(Use the tabulated value: $N(d_1) = 0.4246$, $N(d_2) = 0.3438$)

Q.5 Attempt any **SEVEN** out of **TWELVE:** (14)
   (1) State interpretation of Profitability Index.
   (2) What is accrued interest?
   (3) What is Present Value and Future Value for an Annuity?
   (4) Explain: Diversification
   (5) Define: Efficient Frontier
   (6) Define: Sharpe Ratio
   (7) Define: Term Structure of Interest Rate
   (8) Define: Minimum Variance Portfolios
   (9) Define: Implied Volatility
   (10) State the difference between Forwards and Futures contracts.
   (11) Define: Yield Curve
   (12) Write the expression representing expected value and variance of Log-normal
distribution.

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