Eighth Semester B.Tech Degree Examination

(2013 Scheme)

13.803 FINANCIAL ENGINEERING (N)

Time: 3 Hours   Max.Marks: 100

PART A

Answer *all* questions. Each question carries *two* marks.

1. Explain the concept of future value.
2. Define ideal bank.
3. Give the differences between coupon and zero coupon bond.
4. Why do investors use dividends to value shares ?
5. What is the importance of price earnings ratio ?
6. "Beta is not the sole factor affecting required rate of return". Elucidate the statement.
7. What is the relationship between risk and return for efficient portfolios ?
8. Futures and options are termed as derivatives. Why ?
9. What are swaps ?
10. State the assumptions underlying Black-Scholes model.   (2X10)

PART B

Answer any *one* full question from each module. Each full question carries *twenty* marks

Module I

11. Suppose two competing projects have cash flows of the form $(-A_1, B_1.B_1,....,B_1)$ and $(-A_2, B_2.B_2,....,B_2)$, both with the same length and $A_1, A_2, B_1.B_2$ all positive. Suppose $(B_1/A_1) > (B_2/A_2)$. Show that project 1 will have a higher IRR than project 2.

12. Consider a 7% bond, face value $100 with 3 years to maturity. Assume that bond is selling at 8% yield with semi annual coupon payment. Find the Macaulay duration.

Module II

13. (a) Explain about Gordon growth model for equity valuation and discuss when is it most appropriate for valuing equity ?
    (b) The current dividend D_0 is Rs. 350. Growth is expected to be 10% a year for 3 years and then 5% thereafter. The required rate of return is 15%. Estimate the intrinsic value of the stock.

14. (a) Explain the Whitbeck Kisor model.
    (b) What do you mean by an efficient market ? Discuss the various levels of market efficiency

Module III

15. The returns on the equity stock of ABC Company and the market portfolio over 11 year period are given below:

Year	1	2	3	4	5	6	7	8	9	10	11
Return on equity stock (%)	15	-6	18	30	12	25	2	20	18	24	8
Return on market portfolio (%)	12	1	14	24	16	30	-3	24	15	22	12

   (i)   Calculate the beta for the stock
   (ii) Establish the characteristic line for the stock.

16. Compare the advantages and disadvantages of APT and the CAPM. When would the risk-return relationship of the APT be equivalent to that of the security market line ?

Module IV

17. Explain the following terms with respect to options :
       (i) Option premium
       (ii) Strike price
       (iii) Expiry date and
       (iv) intrinsic value.

18.(a) Explain the payoff of a European call option and put option.

(b) A non- dividend paying stock has a current price of Rs.16/-.What will be the futures price if the risk free rate is 9% and the maturity of the future contract is 1 month ?   (4X20)