JAIPURIA INSTITUTE OF MANAGEMENT
LUCKNOW NOIDA JAIPUR INDORE

**JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA**

**PGDM / PGDM (M) / PGDM (SM)**

**FOURTH TRIMESTER (Batch 2022-24)**

**END TERM EXAMINATION, OCTOBER 2023**

**SET – 1 (MAIN)**

| Course Name | **Investment Management** | Course Code | **FIN10222** |
|---|---|---|---|
| Max. Time | **2 Hours** | Max. Marks | **40 MM** |

## INSTRUCTIONS:

a. **Open book examination. Only the prescribed text book, calculator, pen, pencil, scale and eraser are allowed.**

b. **Hand written note / paper / any other material, mobile phone, and scientific watch are strictly prohibited during the examination. Disciplinary action will be taken if any examinee is found to carry / use any such material.**

c. **All parts of the same question must be answered in the same place. For example if the question 2 contains 3 parts – (a), (b ) and ( c), the answers to each part must be given sequentially in the same place. No marks will be awarded for the part written elsewhere even if the answer is correct.**

d. **Exchange of calculator is strictly prohibited.**

e. **Step by step all workings must be shown clearly without which marks will not be awarded.**

f. **Extreme caution has been taken in making the questions. There is no ambiguity in the question paper. Hence do not ask for any explanation from the invigilator. Still if you feel that there exists room for any assumption then write the same clearly. However, illogical assumptions will be ignored.**

## Answer all the questions

**CLO: 3 RBT: IV**

1. Mrs. Twinkle Agarwal has a fully diversified portfolio of Rs 9 crore ( original portfolio). Upon her father's death she inherits ITC's common stock worth Rs1 crore. She extracts the following information from the databases and records.

| Particulars | Monthly Return | SD of the monthly returns |
|---|---|---|
| Original portfolio | 0.67 % | 2.37% |
| ITC stock | 1% | 2.50% |

The correlation coefficient between the ITC stock and the original portfolio is 0.40.

The inheritance changes Mrs. Agarwal's portfolio character, as such, she is analyzing from various angles whether to keep ITC stock. Assume she keeps the stock, examine –

a)

i) Expected return of the portfolio which includes the ITC stock

ii) Covariance of ITC stock returns with the original portfolio return

iii) SD of the new portfolio that includes ITC stock

b) If she sells the ITC stock, she can invest the sale proceeds in risk free Govt. T-bills yielding 0.50% return per month. Assume she sells ITC stock and replaces with the T-bills, examine :

i) Expected return of the portfolio which includes the T bills

ii) Covariance of the T-bills with the original portfolio.

iii) SD of the new portfolio that includes T- bills.

c) Mrs. Agarwal is herself a holder of PGDM ( finance) from JIM- Noida. Her husband who is also a PGDM (finance) from a very high ranking B-school advises her to invest in another blue chip company that has the same monthly return and SD as that of ITC. He comments – ' It is immaterial whether you invest in ITC or in the company I suggest, as both the companies have the same return and SD'.
Mrs, Agarwal thinks for a moment and replies – 'Are you sure ? I am doubtful ….'
There appears to be something more …. '
Conclude briefly with to the point reasoning.

Marks :3 +3 +4

**CLO:3 RBT: IV**

2.Karan Shah an equity analyst uses CAPM for recommending stocks to his client. He and his team develop the following information through research :

| Stock | Return % | SD % | Beta |
|---|---|---|---|
| Jai Hanuman Ltd | 14 | 36 | 0.8 |
| Jai Gomata Ltd | 17 | 25 | 1.5 |
| Sensex | 14 | 15 | 1.00 |

Risk free rate is 5%.

a) Examine the expected return and alpha of each stock.

b) Analyze which stock would be more appropriate for an investor to –

i) Add to a well-diversified portfolio

ii ) hold a stock as a single stock portfolio using appropriate performance ratio.

Marks : 4 + 6

**CLO:3 RBT: IV**

3.

a) Examine which security has a higher effective annual yield ?

i) A three month T bill with a face value of $100,000 is currently selling at $97,645. (day count 30/360)

ii) A coupon bond selling at par and paying a 10% coupon annually.

b)You purchase a bond that pays a coupon semiannually, rate is10% per year when the market interest rate is 4% per half-year. The bond has 3 years until maturity. Examine –

i) The bond's price you have to pay today, and bond's price after the next coupon is paid.

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ii) If you actually sell the bond after the next coupon payment, examine the holding period return of the bond.

Marks : 3 + 7.

**CLO:3 RBT: IV**

4. (a) The current yield curve for a zero coupon bonds is as follows :

| Maturity (Years) | YTM |
|---|---|
| 1 | 10% |
| 2 | 11% |
| 3 | 12% |

a)Examine 1X1 FRA (implied forward rate for 1 year after 1 year) and 2X1 FRA ( that is, implied 1 year forward rate after 2 year).

(b.) There are 2 bonds A and B of 3 years' maturity each. Bond A gives annual coupon of 8% on face value of Rs.1000. But bond B (same FV) pays the same coupon but it is a zero coupon bond. Current YTM is 9%. Compare the duration and modified duration of both the bonds. If there takes place 25 basis point increase in yield, examine the price change of both the bonds. Analyze which bond has more interest rate risk ?

Marks : 4 + 6

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