Monthly Return $= \frac{(20.06 - 20) + 0.0375 + 0.03}{20} \times 100$

$= 0.6375\%$

Or, $= 7.65\%$ p.a.

Question – 09

An investor purchased 300 units of a Mutual Fund at ₹ 12.25 per unit on 31st December, 2009. As on 31st December, 2010 he has received ₹ 1.25 as dividend and ₹ 1.00 as capital gains distribution per unit.

Required :

(i) The return on the investment if the NAV as on 31st December, 2010 is ₹ 13.00.

(ii) The return on the investment as on 31st December, 2010 if all dividends and capital gains distributions are reinvested into additional units of the fund at ₹ 12.50 per unit.

(SM TYK – 04)

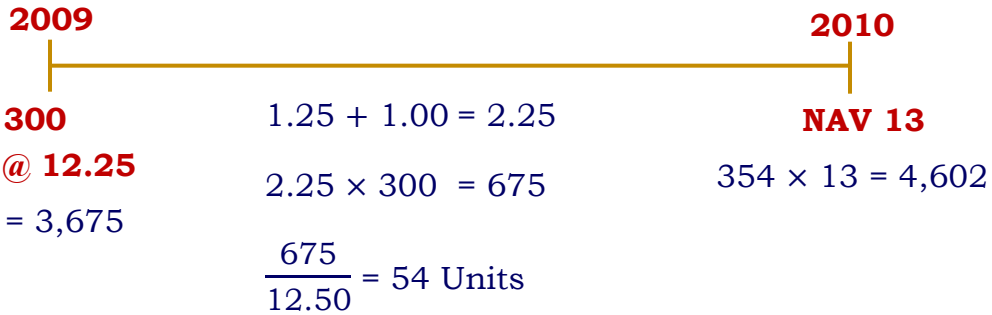
Solution:

(1) Annual Return

$= \frac{(13 - 12.25) + 1.25 + 1.00}{12.25} \times 100$

$= 24.49\%$

(2) Dividend Reinvestment Plan



Investment = 300 units × 12.25 = 3,675

Dividend & Capital Gain Income
(1.25 + 1) × 300 units = 675

Additional units $= \frac{675}{12.50}$ = 54 units

Ending value = [354 units × 13] = ₹ 4,602

Return $= \frac{4,602 - 3,675}{3,675} \times 100$ = 25.22%

Question – 10

The following information is extracted from Steady Mutual Fund's Scheme:

- Asset Value at the beginning of the month - ₹ 65.78

- Annualized return -15 %

- Distributions made in the nature of Income & Capital gain (per unit respectively). - ₹ 0.50 and ₹ 0.32

You are required to:

(i) Calculate the month end net asset value of the mutual fund scheme (limit your answers to two decimals).

(ii) Provide a brief comment on the month end NAV.

(SM TYK – 06)

Solution:

(i) Calculation of NAV at the end of month

Annualized Return $= HPR \times \frac{12}{1}$

$15 = HPR \times \frac{12}{1}$

$HPR = 15 \times \frac{1}{12}$

= 1.25%

$$1.25\% = \frac{(x - 65.78) + 0.50 + 0.32}{65.78}$$

$$0.82 = x - 65.78 + 0.82$$

$$x = 65.78$$

(ii) There is no change in NAV.

Question – 11

Mr. A has invested in three Mutual Fund Schemes as per details below:

Particulars	MF A	MF B	MF C
Date of investment	01/12/2009	01/01/2010	01/03/2010
Amount of investment	₹ 50,000	₹ 1,00,000	₹ 50,000
Net Assets Value (NAV) at entry date	₹ 10.50	₹ 10	₹ 10
Dividend received upto 31/03/2010	₹ 950	₹ 1,500	Nil
NAV as at 31/03/2010	₹ 10.40	₹ 10.10	₹ 9.80

Required:

What is the effective yield on per annum basis in respect of each of the three schemes to Mr. A upto 31/03/2010?

(SM TYK – 10)

Solution:

Effective Yield

		MFA	MFB	MFC
(a)	Investment	50,000	1,00,000	50,000
(b)	NAV	10.50	10	10
(c)	No of units $\left(\frac{a}{b}\right)$	4761.90	10,000	5,000
(d)	NAV (31.03.2010)	10.40	10.10	9.80
(e)	Ending value (c × d)	49,524	1,01,000	49,000
(f)	Dividend	950	1500	0
	HPR = $\frac{(e-a)+f}{a} \times 100$	0.95%	2.5%	-2%
	No. of days	121 days	90 days	31 days
	E.Y. = HPR × $\frac{365}{N}$	2.87%	10.13%	-23.55%

Question – 12

Mr. Y has invested in the three mutual funds (MF) as per the following details:

Particulars	Scheme X	Scheme Y	Scheme Z
Amount of Investment (₹)	2,00,000	4,00,000	2,00,000
NAV at the time of purchase (₹)	10.30	10.10	10
Dividend Received up to 31.03.2018 (₹)	6,000	0	5,000
NAV as on 31.03.2018 (₹)	10.25	10	10.20
Effective yield per annum as on 31.03.2018 (percent)	9.66	-11.66	24.15

Assume 1 Year = 365 days

Mr. Y has misplaced the documents of his investment. Help him in finding the date of his original investment after ascertaining the following:

(i) Number of units in each scheme;

(ii) Total NAV;

(iii) Total Yield; and

(iv) Number of days investment held.

(SM TYK – 12, MTP Oct – 2020 & Exam May – 2018)

Solution:

(i) Number of Units

Mutual Fund X $= \frac{2,00,000}{10.30} = 19,417.47$

Mutual Fund Y $= \frac{4,00,000}{10.10} = 39,603.96$

Mutual Fund Z $= \frac{2,00,000}{10} = 20,000$

(ii) Total NAV

Mutual Fund X $= [19,417.47 \times 10.25] = 1,99,029$

Mutual Fund Y	= [39,603.96 × 10]	= 3,96,040
Mutual Fund Z	= [20,000 × 10.20]	= 2,04,000
		= 7,99,069

(iii) Total Yield

$$= \frac{(7,99,029 - 8,00,000) + 11,000}{8,00,000} \times 100$$

= 1.25%

(iv) Number of Days

Mutual Fund X

$$HPR = \frac{(1,99,019 - 2,00,000) + 6,000}{2,00,000} \times 100 = 2.51\%$$

$$E.Y. = HPR \times \frac{365}{n}$$

$$9.66 = 2.51 \times \frac{365}{n}$$

$$n = \frac{2.51 \times 365}{9.66}$$

= 95 days

Mutual Fund Y

$$HPR = \frac{(3,96,040 - 4,00,000) + 0}{4,00,000} \times 100 = -0.99\%$$

$$E.Y. = -0.99 \times \frac{365}{n}$$

$$-11.66 = -0.99 \times \frac{365}{n}$$

$$n = \frac{-0.99 \times 365}{-11.66}$$

$$= 31 \text{ days}$$

Mutual Fund Z

$$HPR = \frac{(2,04,000 - 2,00,000) + 5,000}{2,00,000} \times 100 = 4.5\%$$

$$E.Y. = HPR \times \frac{365}{n}$$

$$24.15 = 4.5 \times \frac{365}{n}$$

$$n = \frac{4.5 \times 365}{24.15}$$

$$= 68 \text{ days}$$

Date of Investment [31.03.2018]

Mutual Fund X = 31.03.2018 – 95 days

= 26.12.2017

Mutual Fund Y = 31.03.2018 – 31 days

= 28.02.2018

Mutual Fund Z = 31.03.2018 – 68 days

= 22.01.2018

Question – 13

Mr. D had invested in three mutual funds (MF) as per the following details:

Particulars	MF 'A'	MF 'B'	MF 'C'
Amount of Investment	2,00,000	5,00,000	4,00,000
NAV at the time of purchase	10.00	25.00	20.00
Dividend Yield up to 31.03.2022	3%	5%	4%
NAV as on 31.03.2022	10.50	22.80	20.80
Annualized Yield as on	9.733%	-11.185%	15%

31.03.2022			

Assume 1 Year = 365 Days.

Mr. D has misplaced the documents of his investments.

You are required to help Mr. D to find out the following:

(i) Number of units allotted in each scheme,

(ii) Value of his investments as on 31.03.2022,

(iii) Holding period of his investments in number of days as on 31.03.2022

(iv) Dates of original investments

(v) Total Return on investments,

(vi) Assuming past performance of all three schemes will continue for next one year, what action the investor should take? What will be the expected return for the next one year after the above action?

(vii) Will your answer as above point no. (vi) changes if the Mutual fund charges exit load of 5% if the investment is redeemed within one year? If so, advise the investor what and when the action to be taken to optimize the returns.

(Exam May – 2022)

Solution:

(i) No. of Units

$$A = \frac{2,00,000}{10} = 20,000$$

$$B = \frac{5,00,000}{25} = 20,000$$

$$C = \frac{4,00,000}{20} = 20,000$$

(ii) Value of investment as on 31st March 2022

A = [20,000 × 10.25] = 2,10,000

B = [20,000 × 22.80] = 4,56,000

C = [20,000 × 20.80] = 4,16,000

= 10,82,000

(iii) No. of days

	MFA	MFB	MFC
No. of unit	20,000	20,000	20,000
NAV (31/03/2022)	10.50	22.80	20.80
Investment (31/03/2022)	2,10,000	4,56,000	4,16,000
Dividend	6,000	25,000	16,000
HPR	8%	-3.8%	8%
E.Y.	9.733%	-11.185%	15%
E.Y. = HPR × $\frac{365}{n}$	300 days	124 days	195 days

(iv) Dates of Original Investment

Mutual Fund A = 31/03/2022 – 300 days = 04/06/2021

Mutual Fund B = 31/03/2022 – 124 days = 27/11/2021

Mutual Fund C = 31/03/2022 – 195 days = 17/09/2021

(v) Total Return

$$\text{Total Return} = \frac{(10,82,000 - 11,00,000) + 47,000}{11,00,000} \times 100$$

= 2.64%

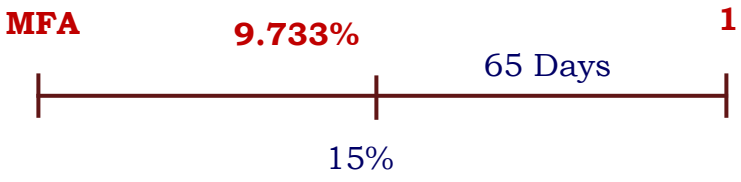
(vi) Unit of Mutual Fund A & Mutual Fund B should be redeemed & invested in Mutual Fund C.

Expected Return of next year = 15% p.a.

(vii)

Extra Return = 15 – (-11.85) = 26.185%

Extra Return for 241 days $= 26.185 \times \frac{241}{365}$ = 17.29%



Extra Return = 15 – 9.733 = 5.267%

Extra Return for 65 days $= 5.267 \times \frac{65}{365}$ = 0.94%

If Mutual Fund charges exit load 5% then of Mutual Fund B should be redeemed now & unit of Mutual Fund A should be redeemed after 65 days.

Question – 14

Sun Moon Mutual Fund (Approved Mutual Fund) sponsored open-ended equity oriented scheme "Chanakya Opportunity Fund". There were three plans viz. 'A' – Dividend Re-investment Plan, 'B' – Bonus Plan & 'C' – Growth Plan.

At the time of Initial Public Offer on 1.4.1999, Mr. Anand, Mr. Bacchan & Mrs. Charu, three investors invested ₹ 1,00,000 each & chosen 'B', 'C' & 'A' Plan respectively.

The History of the Fund is as follows:

Date	Dividend%	Bonus Ratio	Net Asset Value per Unit (F.V. ₹ 10)		
			Plan A	Plan B	Plan C
28.07.2003	20		30.70	31.40	33.42
31.03.2004	70	5 : 4	58.42	31.05	70.05
31.10.2007	40		42.18	25.02	56.15
15.03.2008	25		46.45	29.10	64.28
31.03.2008		1 : 3	42.45	20.05	60.12
24.03.2009	40	1 : 4	48.10	19.95	72.40
31.07.2009			53.75	22.98	82.07

On 31st July all three investors redeemed all the balance units.

Calculate annual rate of return to each of the investors.

Consider:

1. Long-term Capital Gain is exempt from Income tax.

2. Short-term Capital Gain is subject to 10% Income tax.

3. Security Transaction Tax 0.2 per cent only on sale/redemption of units.

4. Ignore Education Cass.

(SM TYK – 17)

Solution:

Plan A: Dividend Re-Investment Plan

Date	Dividend Rate	Dividend Amount	NAV	Additional Unit	Balance Unit
01/04/1999	-	-	10.00	-	10,000
28/07/2003	20%	20,000	30.70	651.47	10,651.47
31/03/2004	70%	74,560	58.42	1,276.28	11,927.75
30/10/2007	40%	47,711	42.18	1131.13	13,058.88
15/03/2008	25%	32,647	46.45	702.85	13,761.73
24/03/2009	40%	55,047	48.10	1144.43	14,906.16

Redemption (31/07/2009)

Redeemable Value (14,906.16 × 53.75)	8,01,206
(-) STT @ 0.2 %	1,602
Net Amount Received	7,99,604
(-) Short Term Capital Gain Tax 1,144.43 (53.64* – 48.10) × 10%	634
Net Amount	7,98,970

*53.64 = 53.75 – 0.2%

$$\text{HPR} = \frac{7,98,970 - 1,00,000}{1,00,000} \times 100 = 698.97\%$$