MUTUAL FUNDS CLASS 3 HOME WORK SUPPORT COVERAGE

Question			Answer			Lecture Time
Q. No	Page no.	Book	Q. No	Page no.	Book	
8	51	HW Q BOOK	8	144	HW ANS BOOK	00:00:33 - 00:19:04
17	54	HW Q BOOK	17	152	HW ANS BOOK	00:19:05 - 00:47:33
7	50	HW Q BOOK	7	144	HW ANS BOOK	00:47:34 - 00:49:04
9	51	HW Q BOOK	9	145	HW ANS BOOK	00:49:05 - 00:50:02
18	55	HW Q BOOK	18	153	HW ANS BOOK	00:50:03 - 00:53:04
6	50	HW Q BOOK	6	143	HW ANS BOOK	00:53:05 - 01:06:14

PART II: LOAD AND RETURN CALCULATION

Topic 9 EFFECTIVE YIELD

Question 8: SSEI HW Book Page No. 51

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 Asset 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

What is the effective yield on per annum basis in respect of each of the three schemes to Mr. A upto 31.03.2010?

(Source: ICAI)

ANSWER:

Scheme	Investment	Unit Nos. (Investment/NAV at entrydate)	Unit NAV 31.3.2010	Total NAV 31.3.2010 (Unit Nos. X UnitNAV as on 31.3.2010)
	₹		₹	₹
MF A	50,000	4761.905	10.40	49,523.812
MF B	1,00,000	10,000	10.10	1,01,000
MF C	50,000	5,000	9.80	49,000

Scheme	NAV (+) / (–) (NAV as on 31.3.2010 –Investment)	Dividend Received	Total Yield Change in NAV +Dividend	Numberof days	Effective Yield(% P.A.) (TotalYield/ Investment) X (365/No. of days) X 100
	₹	₹	₹		
MF A	(–)476.188	950	473.812	121	2.858%
MF B	(+)1,000	1,500	2,500	90	10.139%
MF C	(–)1,000	Nil	(–)1,000	31	(–)24%

PART III: VARIOUS TYPES OF PLAN

Topic 13 SUMS BASED ON BACK CALCULATION

Question 17: SSEI HW Book Page No.54

On 01-07-2016, Mr. X Invested ₹ 50,000/- at initial offer in Mutual Funds at a face value of ₹ 10 each per unit. On 31-03-2017, a dividend was paid @ 10% and annualized yield was 120%. On 31-03-2018, 20% dividend and capital gain of ₹ 0.60 per unit was given. Mr. X redeemed all his 6271.98 units when his annualized yield was 71.50% over the period of holding. Calculate NAV as on 31-03-2017, 31-03-2018 and 31-03-2019.

For calculations consider a year of 12 months.

(Source: ICAI)

ANSWER:

Yield for 9 months (120% x 9/12) = 90%

Market value of Investments as on 31.03.2017 = ₹ 50,000/- + (₹ 50,000x 90%)= ₹ 95,000/-

Therefore, NAV as on 31.03.2017 = (₹ 95,000 - ₹ 5,000)/5,000 = ₹ 18.00

Since dividend was reinvested by Mr. X, additional units acquired = ₹5,000/ ₹ 18 = 277.78 unit

Therefore, units as on 31.03.2017 = 5,000 + 277.78 = 5,277.78

Alternatively, units as on 31.03.2017 = (₹ 95,000/₹18) = 5,277.78

Dividend as on 31.03.2018 = 5,277.78 x ₹ 10 x 0.2	₹10,555.56
Capital Gain (5277.78 x ₹ 0.60)	₹ 3,166.67
	₹13,722.23

Let X be the NAV on 31.03.2018, then number of new units reinvested will be ₹13,722.23/X. Accordingly, 6,271.98 units shall consist of reinvested units and 5277.78 (as on 31.03.2017). Thus, by way of equation it can be shown as follows:

$$6,271.98 = \frac{₹\,13,722.23}{X} + 5,277.78$$

Therefore, NAV as on 31.03.2018 = ₹ 13,722.23/(6,271.98 – 5,277.78) = ₹ 13.80

NAV as on 31.03.2019 = ₹ 50,000 (1+0.715x33/12)/6,271.98 = ₹23.656

PART II: LOAD AND RETURN CALCULATION

Topic 9 EFFECTIVE YIELD

Question 7: SSEI HW Book Page No. 50

Mr. K has invested in three Mutual fund schemes as per details below:

	Scheme A	Scheme B	Scheme C
Date of Investment	01-12-2018	01-01-2019	01-03-2019
Amount of Investment	₹ 5,00,000	₹ 10,00,000	₹ 5,00,000
Net Asset Value at entry date	₹ 10.50	₹ 10.00	₹ 10.00
Dividend received upto 31-03-2019	₹ 9,500	₹ 15,000	₹ 5,000
NAV as at 31-3-2019	₹ 10.40	₹ 10.10	₹ 9.80

You are required to calculate the effective yield on per annum basis in respect of each of the three schemes to Mr. K upto 31-03-2019, taking the year consisting of 365 days.

Provide a brief comment on the course of action he should take for future period.

(Calculation should be upto three decimal places)

(Source: ICAI)

ANSWER:

Calculation of effective yield on per annum basis in respect of th ree mutual fund schemes to Mr. K up to 31-03-2019:

Particulars	Scheme A	Scheme B	Scheme C
(a) Investments	₹ 5,00,000	₹ 10,00,000	₹ 5,00,000
(b) Opening NAV	₹ 10.50	₹ 10.00	₹ 10.00
(c) No. of units (a/b)	47,619.048	1,00,000	50,000
(d) Unit NAV on 31-3-2019	₹ 10.40	₹ 10.10	₹ 9.80
(e) Total NAV on 31-3-2019 (c x d)	₹ 4,95,238.099	₹ 10,10,000	₹ 4,90,000
(f) Increase / Decrease of NAV (e - a)	(₹ 4,761.901)	₹ 10,000	(₹ 10,000)
(g) Dividend Received	₹ 9,500	₹ 15,000	₹ 5,000
(h) Total yield (f + g)	₹ 4,738.099	₹ 25,000	(₹ 5,000)
(i) Number of Days	121	90	31
(j) Effective yield p.a. (h/a x 365/i x 100)	2.859%	10.139%	(-) 11.774%

Comments: Since the Effective Yield in Scheme C is negative and that of Scheme A is much lower than Scheme B, it is advised that Mr. K should redeem the investments in Scheme A and Scheme C and the proceeds should be invested in Scheme B in the next period.

PART II: LOAD AND RETURN CALCULATION

Topic 9 EFFECTIVE YIELD

Question 9: SSEI HW Book Page No. 51

A mutual fund that had a net asset value of Rs.16 at the beginning of a month, made income and capital gain distribution of Rs. 0.04 and Rs. 0.03 respectively per unit during the month, and then ended the month with a net asset value of Rs.16.08. Calculate monthly and annual rate of return.

ANSWER:

Calculation of monthly return on the mutual funds:

$$r = \frac{(NAV_t - NAV_{t-1}) + I_t + G_t}{NAV_{t-1}}$$

$$\text{Or, } r = \frac{(₹\,16.08 - ₹16.00) + (₹\,0.04 + ₹\,0.03)}{16}$$

$$= \frac{0.08 + 0.07}{16} = 0.009375 \quad \text{or, } r = 0.9375\% \text{ or } 11.25\% \text{ p.a.}$$

PART III: VARIOUS TYPES OF PLAN

Topic 13 SUMS BASED ON BACK CALCULATION

Question 18: SSEI HW Book Page No. 55

Mr. X on 1.7.2012, during the initial public offer of a Mutual Fund (MF) invested ₹ 1,00,000 at Face Value of ₹ 10. On 31.3.2013, the MF declared a dividend of 10% when Mr. X calculated that his holding period return was 115%. On 31.3.2014, MF again declared a dividend of 20%. On 31.3.2015, Mr. X redeemed all his investment which had accumulated to 11,296.11 units when his holding period return was 202.17%.

Calculate the NAVs as on 31.03.2013, 31.03.2014 and 31.03.2015.

(Source: ICAI)

ANSWER:

Yield for 9 months = 115%
Market value of Investments as on 31.03.2013 = 1,00,000/- + (1,00,000x 115%) = ₹ 2,15,000/-
Therefore, NAV as on 31.03.2013 = (2,15,000 -10,000)/10,000 = ₹ 20.50
(NAV would stand reduced to the extent of dividend payout, being (₹100,000 x 10%) = ₹ 10,000)
Since dividend was reinvested by Mr. X, additional units acquired = ₹ 10,000/ 20.50 = 487.80 units
Therefore, units as on 31.03.2013 = 10,000+ 487.80 = 10,487.80
[Alternately, units as on 31.03.2013 = (2,15,000/20.50) = 10,487.80]
Dividend as on 31.03.2014 = 10,487.80 x 10 x 0.2 = ₹ 20,975.60
Let X be the NAV on 31.03.2014, then number of new units reinvested will be ₹ 20,975.60/X. Accordingly 11296.11 units shall consist of reinvested units and 10487.80 (as on 31.03.2013). Thus, by way of equation it can be shown as follows:

$$11296.11 = \frac{20975.60}{X} + 10487.80$$

Therefore, NAV as on 31.03.2014 = 20,975.60/(11,296.11- 10,487.80) = ₹ 25.95
NAV as on 31.03.2015 = ₹ 1,00,000 (1+2.0217)/11296.11 = ₹ 26.75

PART II: LOAD AND RETURN CALCULATION

Topic 9 EFFECTIVE YIELD

Question 6: SSEI HW Book Page No. 50

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

Particulars	MF 'X'	MF 'Y'	MF 'Z'
Amount of Investment (₹)	2,00,000	4,00,000	2,00,000
Net Assets Value (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.

(Source: ICAI)

ANSWER:

i. Number of Units in each Scheme

MF 'X'	₹ 2,00,000/ ₹ 10.30	19,417.48
MF 'Y'	₹ 4,00,000/ ₹ 10.10	39,603.96
MF 'Z'	₹ 2,00,000/₹ 10.00	20,000.00

ii. Total NAV on 31.03.2018

MF 'X'	= 19,417.48 x ₹ 10.25	₹ 1,99,029.17
MF 'Y'	= 39,603.96 x ₹ 10.00	₹ 3,96,039.60
MF 'Z'	= 20,000.00 x ₹ 10.20	₹ 2,04,000.00
Total		₹ 7,99,068.77

iii. Total Yield

	Capital Yield	Dividend Yield	Total
MF 'X'	₹ 1,99,029.17- ₹ 2,00,000	₹6,000	₹ 5,029.17
	= - ₹970.83		
MF 'Y'	₹ 3,96,039.60 - ₹ 4,00,000	Nil	- ₹ 3,960.40
	= - ₹ 3,960.40		
MF 'Z'	₹ 2,04,000 - ₹ 2,00,000	₹5,000	₹ 9,000.00
	= ₹4,000		
Total			₹ 10,068.77

$$\text{Total Yield} = \frac{₹10,068.77}{₹\ 8,00,000} \times 100 = 1.2586\%$$

iv. No. of Days Investment Held

	MF 'X'	MF 'Y'	MF 'Z'
Let No. of days be	X	Y	Z
Initial Investment (₹)	2,00,000	4,00,000	2,00,000
Yield (₹)	5,029.17	-3,960.40	9,000.00
Yield (%)	2.5146	- 0.9901	4.5
Period of Holding (Days)	$\frac{2.5146}{9.66} \times 365$	$\frac{-0.9901}{-11.66} \times 365$	$\frac{4.5}{24.15} \times 365$
	= 95 Days	= 31 Days	= 68 Days

Date of Original Investment 27.12.17 01.03.18 23.01.18

Alternatively following dates can also be considered:

Date of Original Investment 26.12.17 28.02.18 22.01.18