

F.Y.B.Com. (SEM-I)

Course: Mathematical And Statistical Techniques-I

Topic: Unit-I: Shares & Mutual Fund

Assets:

Liabilities:

Net Asset Value of a unit (N.A.V.):

Entry load:

Exit load:

NAV= (Current Value of all assets- Liabilities)/ total no. of units outstanding

N.A.V. change in Absolute terms = NAV at the end of period — NAV at the beginning of the period

Percentage Change in NAV = Absolute change in NAV * 100 / NAV at the beginning

Annualised Change in NAV = Percentage Change* 12 / NO. of months

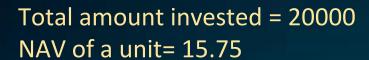
Total Percentage Returns = (Dividends + Absolute Change in NAV)*100 / NAV at the beginning of the periods

Hitesh invested 20000 in Mumbai funds with NAV 15.75.

Find the number of units acquired by him if

a. There is no entry load b.

b.The entry load is 2%



a. If there is no entry load

Then Total no.of unit acquired= 20000/ 15.75

=1269.84 ~ 1270

$$= 15.75 + (2x15.75)/100$$

Total No. of unit acquired = 20000/16.065 =

~ 1245



2. An investor sold his 157.4 units of a mutual funds when NAV was 20.5.

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- Find the amount received by him if
- a. There was no exit load
- b. The exit load was 1.5%

Total units of MF= 17.4 NAV of 1 unit = 20.5

a. If there is no exit load:

The amount received in this transaction = 157.4 x 20.5

= 3226.7

b. if there is an exit load of 1.5%

NAV of 1 unit = 20.5 - 1.5% of 20.5

= 20.5 - 0.3075

= 20.1925

The Amount received in this transaction = 157.4 x 20.1925

= 3178.2995



3) Karan sold his Mutual Funds units at NAV 175 with exit load at 0.5%. If he received 35591.15, find the number of units sold.

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NAV= 175
Exit load @ 0.5%
Total investment= 35591.15
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NAV after exit load= 175 - 0.5% of 175 = 175-0.875 =174.125

NO. of units sold out= Total investment / NAV after exit load = 35591.15/ 174.125

= 204.4

4) Sunita invested 60180 in ICICI Mutual Funds when NAV was 236. She sold all the units when the NAV touched 320. if the entry load is 2% and there is no exit load, find her gain in the transaction

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Total investment = 60180

NAV = 236

Entry load @ 2%

NAV on which units sold out= 320

NAV after entry load = 236 + 2% of 236 = 236 +4.72

= 240.72
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NO. of unit purchased = Total investment / NAV after entry load = 60180 / 240.72 = 250

Total Amount received after selling = 320 x 250 = 80000



5) Mr. Deshmukh invested Rs. 25,000/- to purchase 2,500 units of ICICI MF - B plan on 4th April 2007. He decided to sell the units on 14th Nov. 2007 at NAV of Rs. 16.4 /-. The exit load was 2.5 %. Find his profit (Calculations are upto 2 decimal points)

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No. of units =2500
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purchase cost = Rs. 25,000/-

NAV on the date of sale = RS. 16.4/-

exit load =2.5% = of 16.4 = 0.41

selling price of 1 unit = 16.4 - 0.41 = 15.99

sale value = 2500×15.99

= Rs. 39,975/-

Profit = 39,975 - 25,000 = Rs. 14,975.



Narendra Purchased 200 units of SBI M.F. on 2nd May 2012, when N.A.V. of Rs. 45. His NAV on 30th Dec. 2012 was Rs.50 and he sold all the units. The fund had 2% entry load and 2.5% exit load. Find amount invested and his net profit.

Amount paid to buy 1 unit of MF= 45 + 2% of 45 = 45 + 0.9 = 45.9

Amount paid to buy 200 unit of MF= 45.9 x 200= **9180**

Amount received after selling 1 unit of MF= 50 - 2.5 % of 50 = 50 - 1.25 = 48.75

Amount received after selling 200 unit of MF= $48.75 \times 200 = 9750$

Profit=selling price – purchase price = 9750 - 9180 = 570



Mr. Kamble invested Rs. 20000 in mutual fund on 1st October 2005 when NAV was 65.28. On 5th May 2006 he redeemed all units of mutual funds at an NAV of Rs. 67.18. Find the total gain of Mr. kamble?

Solution:

Investment = 20000

On 1st October: NAV= 25.18

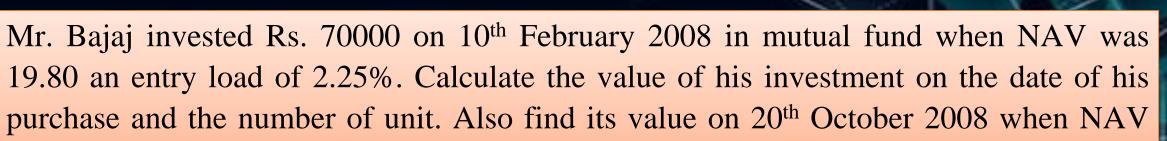
On 5th may: NAV=27.18

No. of units of MF purchased = Total investment / NAV of per unit of MF =

= 20000/25.18 = **794.28**

Amount received after selling all units of MF= $27.18 \times 794.28 = 21588.53$

Gain = 21588.53 - 20000 = 1588.53





Solution:

was Rs. 32.8.

Investment= 70000

NAV=19.80

Entry load= 2.25%

On 20 October: NAV=32.8

Amount paid to buy 1 unit of MF= 19.80 + 2.25% of 19.80 = 19.80 + 0.44 = 20.24

No. of unit of MF purchased = 70000/20.24 = 3458.49

On 20 October;

Total investment = $32 \times 3458.49 = 110671.68$

Mr. Rustam invested ₹ 6000 per month in an S.I.P. for four months when the NAV's were ₹ 23.48, ₹ 16.90, ₹ 17, and ₹ 19.67 respectively.



- a. Find the average unit cost occurred to him using the Rupee Coast Averaging Method.
- b. If he has sold all the units of MF after 4 months at NAV ₹ 25.12 then find the gain or loss in this transaction.

Months	Investment	NAV	Units of MF
1	6000	23.48	255.54
2	6000	16.9	355.03
3	6000	17	352.94
4	6000	19.67	305.03
TOTAL	24000		1268.54

By Rupee Cost Averaging Method:

The Average Unit Cost of MF = Total Investment / Total Unit of MF = 24000/ 1268.54 = 18.92

Total Sales amount = $1268.52 \times 25.12 = 31865.22$

Profit = 7865.22

Mr. Desai invested ₹ 7000/- on 1st of every month for 5 months in a SIP of a M.F. with NAV's as ₹ 48.15, ₹ 52.83, ₹ 41.28, ₹ 35.44 & ₹ 32.65 respectively .There was no entry load charged. Find the average price, Mr. Desai paid using the Rupee-cost-Averaging method. After 5 months, he sold all his units, when NAV was Rs. 51.64 with contingent deferred sales charge (CDSC) as 2.25 %. Find his net gain.

Months	Investment	NAV	Units of MF
1	7000	48.15	145.38
2	7000	52.83	132.50
3	7000	41.28	169.57
4	7000	35.44	197.52
5	7000	32.65	214.40
Total	35000		859.37

By Rupee Cost Averaging Method:

The Average Unit Cost of MF = Total Investment / Total Unit of MF = 35000/859.37 = 40.72

Total Sales amount = $859.37 \times (51.64 - 2.25\% \text{ of } 51.64) = 859.37 \times 50.48 = 43380.75$ Profit = 43380.75 - 35000 = 8380.75