

QUICK REVISION OF MUTUAL FUNDS BASED ON PM : Q & A.

PAGE NO: 1

DATE: / /

H^o friends ... This is based on January 2015 edition of practice manual & will be applicable for November 2016 exams. It will help you to revise problems given in PM quickly

Q11.
$$\text{Mutual fund earnings} = \frac{1}{1 - \text{Initial expenses (\%)} + \text{Recurring expenses (\%)}}$$

Logic: If investment = ₹ 100, initial expense = ₹ 5,

Return = 15% & recurring expenses = 2%, then

$$\text{Mutual fund earning} = \frac{95(100-5)}{100} = 15\%$$

By cross multiplication = $\frac{100 \times 15\%}{95} = 15.78 + \text{Recurring exp.}$
 $= 15.78 + 2 = 17.78\%$

Q12. Similar to Q11

Q13. Monthly Return on Mutual fund (x)

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

where NAV_t = Net asset value at time period t

NAV_{t-1} = Net asset value at time period t-1

I_t = Income G_t = Capital gain distribution: at time t

Find monthly return and then multiply by 12 to find annual return / return p.a.

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Q14 Similar to Q13

Q15 Total return = Change in price + Dividend received + Capital gain distribution.

i. Find return as per Q13

ii. $(\text{Dividend} + \text{Capital}) \times \text{No. of units} = \text{Amount Reinvested}$

New number of units = $\frac{\text{Amount Reinvested}}{\text{Reinvestment rate given p.u}}$

Return (%) = $\frac{\text{Old} + \text{New units at closing NAV} - \text{Old units at purchase price}}{\text{Old units at purchase price}}$

Q16. Annualised return is given, convert it into monthly return & then find NAV using formula in Q13.

Q17 Similar to Q15

Q18. i. NAV of fund on 1st date

= $\frac{(\text{No. of shares CoA} \times \text{M.P of CoA on 1st date}) + (\text{No. of shares CoB} \times \text{M.P of CoB on 1st date}) \dots \text{CoN}}{\text{Total Number of units}}$

ii. Client purchases ~~shares~~ units of Mutual fund & fund manager purchases shares of CoA

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$$\text{Increase in number of M.F units} = \frac{\text{Amount of cheque}}{\text{NAV as in (i)}}$$

Position of fund: Increase shares of company x (cox) by number of shares purchased by fund manager, and cheque amount $\Rightarrow$ (No. of shares of cox purchased $\times$ price of cox on 1st date)
 = cash & include it in calculating revised portfolio of fund.

iii NAV of fund on 2nd date = Cash as calculated above
 $+ (\text{No. of shares of cox} \times \text{M.P of cox on 2nd date})$
 $\div (\text{No. of shares (old + new) of cox} \times \text{M.P of cox on 2nd date}) \dots \text{con}$
 No. of old units + units as increased in (ii)

- Q19.
- Investments
 - Opening NAV
 - No. of units (a/b)
 - Unit NAV on entry date
 - Total NAV on entry date (cxd)
 - Increase / Decrease of NAV (a-e)
 - Dividend received
 - Total yield (f+g)
 - Number of days
 - Effective yield p.a. $(h/a \times 365 / \text{No. of days} \times 100)$

Q20 Same as Q19

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Q21 Logic: $\text{YEAR 1 Annualised yield} \times \frac{\text{No. of months}}{12} = \text{yield for (n) months.}$

Finding x: $\text{yield for (n) months} = \frac{(x - F.V) + \text{Dividend} + \text{Capital gain}}{F.V}$

YEAR 2: $\text{More units for year 2} = \frac{\text{Units} \times F.V \times \text{Dividend}}{x \text{ [from (1)]}}$

$\frac{(\text{old units} + \text{New units}) \times \text{Dividend for year 2}}{\text{NAV of year 2 (y)}} = \text{No. of units for year 2.}$

No. of units for year 2

= No. of units for year 3 (-) No. of units for year 1 end.

YEAR 3: $\text{Annualized yield} = 12\%$
 $\therefore (3) : \text{Total months from start}$
 Find by cross multiplication.

$\text{NAV}_3 = \frac{\text{Initial Investment} (1 + 3 \cdot i)}{\text{Total Number of units at end of year 3.}}$

Q22 Similar to Q21

Q23 Similar to Q15

- Q24. Opening cash balance $\{ \text{Inflow on issue} - \text{outflow on expense} - \text{outflow on investments made} \}$
- (+) Proceeds from sale of securities
 - (+) Dividend received
 - (-) Cost of securities purchased
 - (-) Fund management expenses $\{ \text{outstanding don't consider} \}$
 - (-) Capital gain and dividend distributed $\{ \% \text{ distributed} \}$
- = Closing cash / Bank balance

Closing cash / Bank balance

- (+) Closing m.v of portfolio
- (-) Amount of expenses

= Closing NAV per unit.

Rate of earning: find on similar line of Q13.

- Q25. A: Dividend Reinvestment Plan: Calculate dividend on investment made, reinvest it at NAV on date of declaration of dividend. $\text{Dividend} \div \text{NAV} = \text{units reinvested} \dots \text{(repeat)}$

Redeem Total units (cumulative) on last date at NAV on last date

- (-) Security Transaction Tax (STT) 1%

= Net amount received

- (-) STCG $\{ (\text{NAV on last date} - \text{STT } 1\%) - \text{NAV on 2nd last date} \}$
- (-) Investment

= Return

$$\text{Return (\%)} = \frac{\text{Return}}{\text{Investment}} \times \frac{12}{\text{Total number of months}} \times 100.$$

B: Bonus plan: Receive Bonus units in ratio given
Redeem total units & find return as in (A)

C. Growth plan: Redeem initial units invested directly on last day by taking NAV of last day
Find return as in (A)

Q26 Similar to Q25

Difference: NAV on investment date is given.

Q27 Opening Cash balance [inflow on issue - outflow on investment]
(+) Dividend received
(+) Interest on Government securities & Debenture
(-) Operating expenses
= closing cash balance

NAV = closing cash balance

(+) securities [after making adjustments as given]
(+) Equity shares [— " —]
(+) Debentures [— " —]

= Total assets ÷ No. of units = NAV per unit

NAV per unit before dividend (as above) (-) Dividend distributed = NAV per unit

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Q28.
$$\text{NAV} = \frac{\text{Assets} - \text{Liabilities}}{\text{No. of units}}$$
 After giving effect for adjustments

$\therefore \text{No. of units} = \frac{\text{NAV}}{\text{NAV per unit}}$

Q29. Similar to Q28.

Q30. Sharpe's Index = $\frac{R_p - R_f}{\sigma_p}$

Treynor's Index = $\frac{R_p - R_f}{\beta_p}$

Jensen's Index = $R_p - E(R_p)$
ie Actual - CAPM

$\beta_p = \frac{\sigma_p \times \text{correlation}_{pm}}{\sigma_m}$

or Find β_p as : $\text{correlation}_{pm} = \frac{\text{Covariance}_{pm}}{\sigma_p \times \sigma_m}$

$\beta_p = \frac{\text{Covariance}_{pm}}{\sigma_m^2}$

Rank the portfolio assigning Rank 1 to highest ratio ...

ALL THE BEST :)

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