

# Compilation of Exam-5 Case Study Released by FPSB-India

## Year-2010

(upto Feb'10)

For



By



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**Case Study Released By FPSB India**

<b>For the Month of</b>	<b>Case -1</b>	<b>Case-2</b>
January'10	Anjuman Hansraj	Dr.Darshan Arora
February'10	Vanisha Lohia	Kunal Goswami

Case Study – Anjuman Hansraj (Reference date 23<sup>rd</sup> January, 2010)

Anjuman Hansraj, aged 42 years, a Chartered Accountant is working as Director in Bilaspur unit of a Multinational company, engaged in cement manufacturing. He is presently residing in a township of the company situated near Bilaspur in Chhattisgarh. His wife Vaishnavi, aged 38 years, is also a Chartered Accountant. She took up a job in a private consultancy firm in April, 2009 which gives her an annual all-inclusive package of Rs. 7.50 lakh. She expects her income to rise every year by 10% p.a. They have a school going daughter Ananti, aged 8 years.

Financial details of Anjuman:

Income for the Financial Year 2008-09:

Basic Salary	:	Rs. 10,80,000
Dearness Allowance (forming part of Salary)	:	20% of Basic Salary
Bonus	:	30% of basic salary
Transport Allowance	:	Rs. 13,200
Commission	:	Rs. 1,20,000
Short Term Income from Share trading	:	Rs. 3,56,000

Expenses

Household Expenses	:	Rs. 4,75,000
Child School/Tuition	:	Rs. 50,200

Assets valued as of today (or as specified in footnotes)

Cash/Bank	:	Rs. 2,50,000
Government Bonds & Debt MF	:	Rs. 12,00,000
PPF <sup>1</sup>	:	Rs. 5,56,000
Gold Ornaments	:	Rs. 8,95,000
Car	:	Rs. 4,45,000
National Savings Certificate <sup>2</sup>	:	Rs. 4,50,000
Shares & Equity MF <sup>3</sup>	:	Rs. 25,00,000
Residential House <sup>4</sup>	:	Rs. 20,00,000
Plot of land	:	Rs. 25,00,000
Unit Linked Pension Plan <sup>5</sup>	:	Rs. 91,300

<sup>1</sup> in the name of Anjuman, Maturing on 1<sup>st</sup> April 2017. There has been no investment in this account in this financial year till date. Balance as on 31<sup>st</sup> March, 2009.

<sup>2</sup> Amount invested on 1<sup>st</sup> Jan 2009.

<sup>3</sup> Includes XYX Equity MF (Dividend Payout option) with 11025.2356 units and present NAV of Rs. 66.324.

<sup>4</sup> Situated at his native Bilaspur and used as a holiday home.

<sup>5</sup> Twenty years plan, started on 15<sup>th</sup> Dec 2002 and Premium is Rs. 10,000 p.a. Next premium is due on 15<sup>th</sup> Dec 2010.

Liabilities : Nil

You, in consultation with the couple ascertain their life Goals and methodology about their achievement.

- 1) Buy a house for investment purpose – Immediately – The cost of the house Rs. 60 lakh – By selling the plot of land and taking a bank loan repayable over 10 years @ 12% p.a. interest on monthly reducing balance basis
- 2) Start a Consultancy Firm for the couple – After Anjuman quits his current job at the age of 50 years – Through conversion of his Equity portfolio and Debt portfolio along with a Systematic Investment Plan.
- 3) Retirement corpus – On Anjuman’s age of 65 years – Vaishnavi to invest 10% of her annual salary in Equity and Debt in ratio of 90:10 and rebalance the accumulated amounts periodically when the allocation to these asset classes changes.
- 4) Ananti’s Higher Education abroad – 10 years from now – Rs. 10 lakh per annum (current charges) for 4 years – Through Systematic Monthly Investments in Nifty ETF and Gold ETF Scheme in the ratio 90:10 in the first three years, 75:25 in the next three years, 60:40 in the further three years and 100% in Liquid Fund in the final year.
- 5) Ananti’s Marriage cost – at the age of 25 years– Rs. 25 lakh (current charges) – Through Systematic Monthly Investments in Gold ETF scheme and Equity MF Scheme.
- 6) World Tour – Anjuman’s age of 60 years – Rs. 18 lakh (current charges) – Through investing PPF maturity amount to generate suitable returns.

#### Assumptions

- |                     |   |             |
|---------------------|---|-------------|
| 1) Risk free return | : | 6.50% p.a.  |
| 2) Inflation        | : | 5.50% p.a.  |
| 3) Equity           | : | 11.00% p.a. |
| 4) Debt             | : | 7.00% p.a.  |
| 5) Liquid Funds     | : | 5.50% p.a.  |
| 6) Gold             | : | 7.50% p.a.  |
| 7) Life expectancy  |   |             |
| a. Anjuman          | : | 85 years    |
| b. Vaishnavi        | : | 87 years    |

## Questions

- 1) Anjuman, after seeing the use of CFP<sup>CM</sup> mark with your name, wants to know which entity in India is licensed to award CFP<sup>CM</sup> Certification. You tell him the name of organization as \_\_\_\_\_ . (2)
- A) Financial Planning Standards Board India or FPSB India**  
 B) Financial Planning Standards Board of India  
 C) Financial Planning Standards Board or FPSB  
 D) Financial Planning Standards Board, India
- 2) While preparing Financial Plan for Anjuman you have ensured that all the significant recommendations are made in writing. If any significant recommendations are given orally, then confirmations have been given in writing. You have complied with Rule that relates to the Code of Ethics of \_\_\_\_\_ . (2)
- A) Fairness  
**B) Diligence**  
 C) Professionalism  
 D) Compliance
- 3) For the world tour of the couple at Anjuman's age of 60 years, you suggest Anjuman to accumulate funds by continuing investment in his PPF A/c. to the extent of maximum permissible limit on the first working day of every financial year, such subscription in the current financial year to be deposited on 1<sup>st</sup> February, 2010. He should go for extension of his PPF A/c. twice after its due maturity and should continue to invest amounts as suggested above every financial year. The final maturity proceeds would be invested in a Liquid Fund until its utilization for world tour. Anjuman wants to know what maximum level of average annual increase in such travel and associated costs during this period would see the amount thus accumulated covering his goal of world tour. (Assume that the current regime in PPF A/c. would continue) (5)
- A) 5.60% p.a.  
 B) 5.83% p.a.  
 C) 6.05% p.a.  
**D) 6.14% p.a.**
- 4) Anjuman wants to accumulate funds for Ananti's higher education abroad. You suggest, apart from monthly investments to be allocated in the ratio as proposed in individual years, the accumulated balances in individual asset class to be rebalanced in the beginning of the 'block' of years in line with the allocation for that 'block' of years. The investments should begin on 1<sup>st</sup> Feb, 2010 for a period of 10 years. The yearly withdrawals, when due, in lump sum amount nearing closest 'Lakh of Rupees' are effected on 1<sup>st</sup> February every year. What monthly amount in the nearest 'Hundred Rupees' should be invested? (Please ignore the impact of taxes and charges) (5)
- A) Rs. 34,800  
**B) Rs. 35,300**  
 C) Rs. 34,500  
 D) Rs. 33,500
- 5) You have advised Anjuman to buy a Term Insurance for his life and also for the life of Vaishnavi, he wants to know the importance of waiver of premium rider? (3)
- A) It is useless as there will not be any amount to be received from the Insurance Company at the time of maturity of the policy

- B) **It is very useful as all future premiums would be waived by the Insurance Company in case the Life Assured becomes totally and permanently disabled**
- C) It is same as Permanent Disablement rider hence need not be mentioned separately
- D) It is inbuilt with all the Term Insurance plans and thus need not be mentioned separately
- 6) You have mentioned to Anjuman that as you increase the tenure of insurance coverage, the premium charged per year will also increase. You are referring to which type of Life Insurance coverage? (2)
- A) Whole Life Insurance Plan
- B) Endowment Plan
- C) Unit Linked Insurance Plan
- D) **Term Plan**
- 7) For Anjuman's Consultancy Firm at the age of 50 years, he would require an estimated sum of Rs. 3.25 crore then, towards office premises, equipment and provision of first 2 years' salary of employees to be recruited. You suggest him to take a loan of Rs. 2 crore at that time for office premises and renovation, repayable over a 10-year term. You further suggest him to liquidate his entire Equity portfolio and Debt portfolio and invest the proceeds in a Balanced Mutual Fund scheme yielding 8.5% p.a. in the next 8 years. You estimate monthly investment required w.e.f. 1<sup>st</sup> February, 2010 for a period of 8 years in the same scheme to build the required differential corpus for his proposed venture. The monthly investment in the nearest 'Hundred Rupees' required is computed as \_\_\_\_\_. (Ignore taxes payable on transactions) (4)
- A) Rs. 12,500
- B) Rs. 64,800
- C) **Rs. 39,700**
- D) Rs. 92,000
- 8) You have suggested Systematic Monthly Investments in Gold ETF scheme and Equity MF Scheme in the ratio 30:70 for accumulating funds for Ananti's marriage. What approximate total monthly investments should be made in suitable instruments as above starting from 1<sup>st</sup> Feb 2010 to accumulate the required funds? (4)
- A) **Rs. 12,000**
- B) Rs. 13,750
- C) Rs. 11,450
- D) Rs. 12,325
- 9) You, in consultation with Vaishnavi and Anjuman estimate that the couple would require 50% of their current household expenses adjusted for inflation post-retirement at Anjuman's age of 65 years. The corpus to sustain such inflation-adjusted expenses to last till Vaishnavi's currently estimated lifetime should be invested in risk free instruments. Vaishnavi desires to invest 10% of her current annual salary on 1<sup>st</sup> February, 2010 and thereafter on 1<sup>st</sup> February every year the same portion of her increased salary to achieve this goal. You compute the accumulated corpus by mapping investments in a ratio of 90:10 in Equity & Debt for the first five years. You alter this ratio in favour of Debt by 15% every 5 years and also rebalance the portfolio accordingly. Your analysis shows \_\_\_\_\_ in the corpus to be thus accumulated. (5)
- A) Surplus of 6.61 lakh
- B) **Shortfall of Rs. 47.36 lakh**
- C) Shortfall of Rs. 30.71 lakh

- D) Almost Meeting the Target
- 10) Anjuman had invested Rs. 4 lakh on 25<sup>th</sup> Jun 2003 in XYX Equity MF. He opted for dividend payout option and received dividends paid by the scheme at 12% each on 16/Jun/2004, 29/Dec/2005, 13/Feb/2007 and on 6/Apr/2008. Anjuman wants to know the rate of return obtained by him on this investment. The same is \_\_\_\_\_.
- (4)
- A) 9.00% p.a.  
 B) 10.09% p.a.  
**C) 11.35% p.a.**  
 D) 10.54% p.a.
- 11) Anjuman has identified a second house in his native Bilaspur which he can buy for Rs. 60 lakh. He wants to dispose of the plot of land for Rs. 25 lakh. He would take a bank loan for the differential amount available at 12% p.a. (on monthly reducing balance basis) and repayable over a 10-year period. The property tax and maintenance outgoings for the house would be annually Rs. 43,000. What rental income he should expect in the first year to completely offset his expenses including interest on loan to be incurred on account of his second home? He does not intend to avail of Section 80C benefit from this property. The complete transaction including disbursement of bank loan and renting of property may be considered to begin on 1<sup>st</sup> April, 2010.
- (4)
- A) Rs. 7,18,748  
 B) Rs. 4,59,355  
 C) Rs. 5,14,000  
**D) Rs. 4,52,616**
- 12) Anjuman has paid till date 7 premiums in his Unit Linked Pension Plan. He has intimated you that the premium allocation charge was 20% in the first year, 10% in the second year, 5% from 3<sup>rd</sup> year to 5<sup>th</sup> year, and 2% in all subsequent years to date. He wants to know his return on investment before paying the 8<sup>th</sup> premium which he is allowed to pay till 31<sup>st</sup> January, 2010 without any penalty. He also wishes to know the annual rate of return on his invested amount after premium allocation charge to assess how the scheme has actually performed. You compute the same as \_\_\_\_ & \_\_\_\_.
- (4)
- A) 2.93% p.a. & 5.60% p.a.  
 B) 3.87% p.a. & 5.23% p.a.  
 C) 4.77% p.a. & 7.43% p.a.  
**D) 6.65% p.a. & 8.47% p.a.**
- 13) Anjuman is seriously considering surrendering his policy of Unit Linked Pension Plan. What would be the tax implications of the surrender value received by him?
- (3)
- A) Any amount received will be tax free  
 B) Amount received less the total premiums paid will be taxable at 10%  
**C) Any Amount received will be added to his income and will be taxed accordingly**  
 D) Amount received less the index value of the premiums paid will be taxable at 20%
- 14) Anjuman wants to know the tax deduction on reinvestment of Interest on NSC.
- (3)
- A) Accrued interest (which is deemed as reinvested) also qualifies for deduction for 6 years.  
**B) Accrued interest (which is deemed as reinvested) also qualifies for deduction for first 5 years.**  
 C) Accrued interest (which is deemed as reinvested) does not qualify for deduction.  
 D) Accrued interest (which is deemed as reinvested) also qualifies for deduction for first 3 years.

Case Study – Dr. Darshan Arora (Reference date 16<sup>th</sup> Jan, 2010)

Dr. Darshan Arora and his wife Dr. Shweeta, residents of Ahmedabad contacted you today to prepare a Financial Plan for their family which will provide them a clear direction for achieving their financial goals. You have gathered the couple's personal and financial data to analyze their financial position.

Dr. Darshan Arora, aged 37 years, is a Gynecologist and partner in a nursing home run by three partners. As per partnership deed all three are working partners, drawing equal salary and share profits from nursing home in equal ratio. His wife Dr. Shweeta, age 36 years, is an Anaesthesiologist and associated with different Hospitals. The Couple has two children, daughter Iravati aged 9 years and son Nishant, aged 5 years. Dr. Darshan's father passed away few years ago. The couple is supporting Dr. Darshan's mother, aged 66 years, currently to the extent of Rs 12,000 p.m. Dr. Darshan's mother stays in a house at Nasik with her younger son Pardeep Arora.

For the Financial Year 2008-09:

## Net Income

Dr. Darshan (Share of Profit from Partnership Firm)	:	Rs. 9.00 lakh
Dr. Darshan (Salary receipt from Partnership Firm)	:	Rs. 3.40 lakh
Dr. Shweeta (Consultancy fees)	:	Rs. 6.50 lakh

## Expenses

Household	:	Rs. 5.40 lakh
Children's Education	:	Rs. 1.80 lakh

Assets valued closest to 16<sup>th</sup> Jan, 2010 (or as specified otherwise)

Particulars		Amount (in Rs.)
Residential House	Present Market Value	45,00,000
Equity Shares	Present Market Value	4,50,000
Equity Mutual Funds	Present Market Value	1,80,000
Debt Mutual Funds	Present Market Value	2,25,000
Public Provident Fund( A/c opened as on 28 March 2005)	Balance as on 1 <sup>st</sup> April 2009	4,15,000
Gold Ornaments	Present Market Value	7,50,000
Cash & Bank Balance		3,22,000
Car	Present Market Value	5,50,000
Zero coupon Bonds#	Face Value	5,00,000
ULIP Policy (First premium paid as on 1 <sup>st</sup> Feb 2002)	Premium paid	4,80,000

# 5 Year term; 500 bonds of Face Value Rs. 1,000 each, maturing on 15/01/2012.

Outstanding Liabilities closest to 16<sup>th</sup> Jan, 2010

Particulars		Amount (in Rs.)
Car Loan	Principal	2,02,500
Personal Loan	Principal	2,80,000

Dr. Arora has also been investing Rs. 60,000 p.a. in a Unit Linked Insurance Plan for the last 8 years. The sum assured is Rs. 15 Lakh under this policy and the term is 20 years. He opted for “growth fund” in this policy for first four years and “balance fund” for remaining term of the policy. As per terms of ULIP policy in case of death, sum assured plus outstanding fund value is given to beneficiary.

You, in consultation with the couple, arrive at their Life Goals and give the following roadmap to achieve the same.

- 1) The couple wants to start a nursing home of their own after 5 years from now. They wish to buy a ready commercial property immediately which is available for Rs. 1 crore. They want to take a loan for a term of 5 years for this and rent out the property as soon as the possession is secured. The current rent for similar property in the area is Rs. 35,000 p.m. After 5 years, they wish to demolish the structure in order to build their nursing home at the spot. The nursing home entails a current construction cost of Rs. 2 crore.
- 2) For Medical education of their children, they would need funds on the date children complete 18 years of their age for a term of four years of Graduation and further term of two years of Post Graduation. Present cost of Graduation per child is Rs. 8 lakh in the first year and 2 lakh p.a. for the next three years. For Post Graduation current cost is Rs. 4 lakh p.a. for two years.
- 3) Shift to a bigger Residential House worth Rs.80 Lakh in present terms after five years.
- 4) Accumulate Rs. 15 Lakh (in present terms) for Iravati’s Marriage expenses at the age of 25 years through regular contribution in his existing PPF account.
- 5) Build a retirement corpus till Dr. Darshan completes 58 years, for household expenses in his post retirement period which would be equal to 60% of pre-retirement household expenses.

#### Assumptions

- |                                 |   |              |
|---------------------------------|---|--------------|
| 1) Risk free return             | : | 6.50% p.a.   |
| 2) Inflation                    | : | 5.50% p.a.   |
| 3) Return on Equity/ Equity MF  | : | 11.00% p.a.  |
| 4) Return on Debt/ Debt MF      | : | 7.00% p.a.   |
| 5) Return on Liquid Funds       | : | 6.00 % p.a.  |
| 6) Return on ULIP- Growth fund  | : | 10.00 % p.a. |
| 7) Return on ULIP- Balance fund | : | 8.00% p.a.   |
| 8) Gold                         | : | 7.50% p.a.   |
| 9) Life expectancy              |   |              |
| a. Darshan                      | : | 80 years     |
| b. Shweeta                      | : | 80 years     |

## Questions

- 15) Dr. Darshan is not satisfied with the returns generated by his ULIP. He wants to surrender his ULIP to use the proceeds to pre-pay his Personal Loan. A premium allocation charge applicable in the policy is 20% for the first year, 10% for the next 2 years and 5 % for the remaining term of the policy. Mortality Charge of Rs. 1.95 per thousand Sum Assured and administrative charges Rs. 480 p.a. charged in the beginning of the year from the fund value and is fixed for the whole term of the policy. Fund management charges 1.75% of closing fund value is deducted at the end of every year. He wants to know from you, what should be the surrender value of his policy if no surrender charges are applicable? (4)
- A) **Rs. 5.55 Lakh**  
 B) Rs. 6.04 Lakh  
 C) Rs. 5.23 Lakh  
 D) Rs. 6.12 Lakh
- 16) You have advised Dr. Darshan to purchase an insurance policy on his residential property. Dr. Darshan purchased the plot of land 5 years ago for Rs. 14 Lakh. He incurred Rs. 15 Lakh on construction of this house three years ago. The land prices in that area have appreciated by 20% p.a. over the five year period and the cost of construction over the last three years has gone up by 8% year-on-year. The rate of depreciation on building is 6 % p.a. You have advised him to insure his house property. You compute the value for which Dr. Darshan should insure his house property on reinstatement basis as \_\_\_\_\_. (4)
- A) Rs. 15.70 Lakh  
 B) **Rs. 18.90 Lakh**  
 C) Rs. 10.16 Lakh  
 D) Rs. 45.00 Lakh
- 17) You have advised Dr. Darshan to use his PPF account exclusively for accumulating part of the funds for the marriage of his daughter Iravati. For this purpose, you have advised him to contribute the maximum permissible investment limit in PPF A/c. on the last working day of every financial year from now onwards till the original term expires in this PPF account. After the original maturity, the account should be extended for a term of 5-year block but without any contribution in the extended period. Dr. Darshan wants to know what maturity amount he will get from this account at the end of the extended period. No contribution has been made till date in the account for this financial year. Assume that the current PPF A/c. regime continues for the whole period. (5)
- A) **Rs. 31.33 Lakh**  
 B) Rs. 28.06 Lakh  
 C) Rs. 27.19 Lakh  
 D) Rs. 26.05 Lakh
- 18) What would be the correct sequence to perform six steps of Financial Planning process to prepare a Financial Plan for Dr. Darshan?
1. Developing and Presenting the Financial plan
  2. Analyzing and evaluating the client's financial status
  3. Implementing the Financial Plan
  4. Monitoring the Financial Plan
  5. Establishing Client-Planner Relationships

6. Gather client data and determining Goals and Expectations (3)
- A) 1, 3, 4, 5, 2, 6  
 B) 6, 2, 5, 4, 3, 1  
 C) 6, 5, 2, 1, 3, 4  
**D) 5, 6, 2, 1, 3, 4**
- 19) The bonds included in the family's portfolio were issued at Rs. 670 per bond. The bond also has an inbuilt option that after 3 years the investor can ask for repayment and company shall refund Rs. 840 on each bond. Dr. Darshan wants to know the yield if he asks for repayment after three years. (2)
- A) Yield to call is 8.34% p.a.  
**B) Yield to put is 7.83 % p.a.**  
 C) Yield to put is 8.34% p.a.  
 D) Yield to call is 7.83% p.a.
- 20) Dr. Darshan saw your name with CFP Marks. He wants to know the different ways in which the CFP Marks in India can be used with the name of professional. (2)
- i) Certified Financial Planner<sup>CM</sup>  
 ii) CFP<sup>CM</sup>  
 iii) CFP<sup>cm</sup>  
 iv) C.F.P.  
 v) CFPCM  
 vi) CERTIFIED FINANCIAL PLANNER<sup>CM</sup>
- A) i) ,ii),v) & vi)  
**B) ii) & vi)**  
 C) iv), v) & vi)  
 D) ii), v) & vi)
- 21) Dr. Darshan wants to know from you, what is his tax liability for AY 2009-10. You have observed that taxable Income from other sources is Rs. 85,000 and he has made investments/payments to claim maximum deduction u/s 80C. Dr. Darshan has not purchased any mediclaim policy. According to you his Income Tax liability for AY 2009-10 would be \_\_\_\_\_. (5)
- A) Rs. 23,690  
**B) Rs. 20,600**  
 C) Rs. 3,08,740  
 D) Rs. 41,200
- 22) Dr. Darshan wants a monthly investment to achieve the goal of his children's higher education. For accumulation of fund you recommend Dr. Darshan to invest in an investment vehicle which invests in the ratio of 30:70 in Debt MF scheme and Equity MF scheme. If Dr. Darshan starts investing from 1<sup>st</sup> Feb 2010, what approximate amount he should invest every month till they individually complete 18 years of age, for each child to achieve that goal? Dr. Darshan maintains separate investment accounts for Iravati and Nishant. You further advise him to redeem corpus of each account when the time child completes 18 years of age and invest the combined sum of Equity scheme and Debt scheme into a Liquid mutual fund scheme. (5)

- A) **Rs. 20,655 and Rs. 14,166 respectively**  
 B) Rs. 22,870 and Rs. 16,310 respectively  
 C) Rs. 13,000 and Rs. 7,200 respectively  
 D) Rs. 18,590 and Rs. 13,015 respectively
- 23) Dr. Darshan has informed you that post interest (at the rate of 12% p.a.) and salary to the partners (as stipulated in the partnership deed) his professional firm has earned a net profit before tax of Rs. 38.60 lakh in FY 2008-09. To get an idea of optimum tax planning for future years, Dr. Darshan wants to know the maximum salary allowable in FY 2008-09 as per the provisions of Income Tax Act, 1961? (4)
- A) Rs. 6,68,170  
 B) **Rs. 6,74,000**  
 C) Rs. 5,32,170  
 D) Amount specified in partnership deed is allowed
- 24) You have advised Dr. Darshan to accumulate his retirement corpus by investing an equal amount every month in Equity Mutual Fund scheme and Debt Mutual Fund scheme. You further advise to rebalance the accumulated funds across both the schemes in equal proportion after every seven years. After his retirement at the age of 58 years, he would switch the accumulated corpus of Equity scheme into Debt scheme in order to generate an inflation-linked monthly annuity till his expected lifetime. He would require the annuity amount, in the first month after retirement, equal to 60% of pre-retirement expenses. What equal monthly amount should he invest in each of Equity and Debt schemes starting from today? (5)
- A) Rs. 7,505  
 B) Rs. 12,375  
 C) **Rs. 13,055**  
 D) Rs. 13,773
- 25) Dr. Darshan took personal loan at 16% p.a. rate of interest (reducing monthly balance basis) for tenure of 42 months. The installments are payable on the 15th of every month. Seven installments are yet to be paid. The foreclosure charges are 3% of the outstanding amount. You suggest him to pre-pay the loan at this stage by surrendering his ULIP Policy. Dr. Darshan wants to know from you what would be the amount (net of penalty charges) he can save by pre-paying his personal loan. (Please ignore taxes on charges, if applicable) (3)
- A) **Rs. 6,731**  
 B) Rs. 15,131  
 C) Rs. 12,500  
 D) Rs. 10,400
- 26) For the deal of commercial property for their proposed Nursing Home in future, Dr. Darshan wishes to avail of a Bank Loan for Rs. 90 Lakh after arranging Rs. 10 lakh for down payment by disposing of his Equity and Debt Portfolio and balance from his bank account. The loan at 9.5% p.a. fixed rate of interest (reducing monthly balance basis) is to be taken for 5 years. What percentage of interest expended in the first year on such a loan is to be offset by the expected rental receipts? (3)
- A) 19%  
 B) 48%  
 C) **53%**

- D) 49%
- 27) In the initial stage of Financial Plan preparation, you told Dr. Darshan and also mentioned in the Financial Plan prepared that you would charge fixed fee for the Financial Plan construction and you would also earn commission on sale of recommended financial products, if the same is accepted. Which code of ethics binds the CFP<sup>CM</sup> Practitioner to disclose conflict of interests? (3)
- A) **Objectivity**  
B) Fairness  
C) Integrity  
D) Professionalism
- 28) Dr. Darshan wants to know what the After Tax Real Rate of Return is in case of investment in an Equity MF scheme and Debt MF scheme, if the investment is withdrawn after completion of one year. Take assumptions on absolute rates on individual asset classes and inflation as given, and consider without indexation tax rates. (2)
- A) Equity 5.50% p.a., Debt 0.80% p.a.  
B) **Equity 5.21% p.a., Debt 0.76% p.a.**  
C) Equity 5.50% p.a., Debt 1.50% p.a.  
D) Equity 5.21% p.a., Debt 1.42% p.a.

Case: Anjuman

1) <b>A)</b>			
2) <b>B)</b>			
3) <b>D)</b>	PPF Balance as on 31st March, 2009	556000	
	Contribution on 1st February, 2010	70000	
	Interest accrued till 31st March, 2010	45413	$(556000 * 0.08) + (70000 * 0.08 * 2 / 12)$
	Balance as on 31st March, 2010	671413	$556000 + 70000 + 45413$

Now, amounts of Rs. 70,000 is contributed every year in April from 2010 to 2016

No. of installments of Rs. 70,000 7

Interest carried by these contributions till end of

respective financial years	5600	$70000 * 0.08$
Financial year-wise addition in PPF A/c	75600	$70000 + 5600$
Maturity of PPF A/c. as on 1st April, 2017	1,825,248	$FV(0.08, 7, -75600, -671413, 0)$
Maturity of PPF A/c. as on 1st April, 2027	5,035,759	$FV(0.08, 10, -75600, -1825248, 0)$

This maturity proceed is then invested in a Liquid Fund for 10 months @ 5.5% p.a.

Amount available for utilization at the end of January, 2028	5,265,528	$5035759 * (1.055)^{(10/12)}$
Cost of World tour at current prices	1,800,000	

Inflation in such cost affordable to cover the accumulated amount

**6.14% RATE(18,0,-1800000,5265528,0)**

4) <b>B)</b>	Inflation adjusted cost of education	Closest amount for withdrawal	PV of amount on 1st withdrawal
1-Feb-2020	$FV(5.5\%, 10, 0, -1000000, 0)$ 1708144	1700000	1700000
1-Feb-2021	$FV(5.5\%, 11, 0, -1000000, 0)$ 1802092	1800000	$1706161$
1-Feb-2022	$FV(5.5\%, 12, 0, -1000000, 0)$ 1901207	1900000	$1707060$
1-Feb-2023	$FV(5.5\%, 13, 0, -1000000, 0)$ 2005774	2000000	$1703227$
	PV of full cost of higher education on 1-Feb-2020		$6816448$
	Nifty ETF	11% p.a.	$(1+11\%)^{(1/12)} - 1$
		0.8735% p.m.	



8) **A)** Equity Returns  $11\%$  p.a.  $0.8735\%$  p.m.  $\frac{(1+11\%)^{12}-1}{(1+7.5\%)^{12}-1}$   
 Gold ETF Returns  $7.50\%$  p.a.  $0.6045\%$  p.m.  $\frac{(1+7.5\%)^{12}-1}{(1+7.5\%)^{12}-1}$   
 Present cost of marriage 2,500,000  
 Cost at age 25  $6,212,005$   $FV(5.5\%, 25-8, 0, -2500000, 0)$

If invest Rs. 100 p.m.  
 Gold ETF  
 Equity MF  
 $12079$   $FV(0.6045\%, 17*12, -(100*0.3), 0, 1)$   $39572$   $FV(0.8725\%, 17*12, -(100*0.7), 0, 1)$   
 $51652$   $12079+39572$   $12027$   $100*6212005/51652$   
 If by investing Rs. 100 we get Rs. 51652 to get 6212005 we need to invest

9) **B)** Current annual household expenses 475,000  
 Such expenses 23 years from now (At Anjuman's age of 65)  $1,627,422$   $475000*(1+5.5\%)^{23}$   
 Monthly expenses required in the first month after Anjuman's age of 65 years  $67,809$   $(1627422/12)*50\%$   
 Vaishnavi's age when Anjuman is 65 61 years  
 Vaishnavi's Life expectancy 87 years  
 Retirement corpus to last 26 years  $87-61$

The size of such corpus to sustain inflation-adjusted annuity for the desired period, if such corpus is invested in risk-free instruments  
 Risk free rate  $6.50\%$  p.a. =  $0.5262\%$  p.m. effective  
 Inflation  $5.50\%$  p.a. =  $0.4472\%$  p.m. effective  
 Inflation-adjusted rate of return  $0.0786\%$  p.m. effective

Thus, the Corpus or the PV of such expenses when Anjuman attains 65 years  $18,768,929$   $PV(0.0786\%, 26*12, -67809, 0, 1)$

To accumulate this corpus, 10% of salary as increased annually is invested per month in the following manner for the next 23 years.  
 10% of annual salary to be invested in February, 2010  $75,000$   $750000/10$   
 Rate of Return on Equity instruments  $11.00\%$  p.a.  
 $7.00\%$  p.a.

Investment allocated in the 1st year of period	Allocation		Accumulated at the end of period		Total Accumulation	
	Equity	Debt	Equity	Debt	Debt end of period	Total end of period
First 5 years	75,000	10%	558,552	7,500	55,629	614,181
Years 6 - 10	120,788	75%	1,525,826	30,197	439,332	1,965,158
		Rebalanced	460,636	153,545		
Years 11 - 15	194,531	60%	2,952,670	77,812	1,679,642	4,632,312
		Rebalanced	1,179,095	786,063		
Years 16 - 20	313,294	45%	4,679,177	172,311	4,851,446	9,530,624
		Rebalanced	2,084,540	2,547,772		
Years 21 - 23	504,562	30%	4,525,784	353,194	9,507,563	14,033,347
		Rebalanced	2,859,187	6,671,436		
Shortfall expected in meeting the Required Corpus			<b>4,735,581</b>			
10) C)						
Equity MF	11025.2356	Units				
NAV	66.324					
25-Jun-2003	-400,000					
16-Jan-2004	13,230	$(10*0.12)*11025.2356$				
29-Dec-2005	13,230	$(10*0.12)*11025.2356$				
13-Feb-2007	13,230	$(10*0.12)*11025.2356$				
6-Apr-2008	13,230	$(10*0.12)*11025.2356$				
19-Jan-2010	731,238	$11025.2356*66.324$				

XIRR

11.35% p.a.

11)

D)

Cost of second house to be purchased	6,000,000
Plot of land would give net of tax proceeds of	2,500,000
Balance to be arranged by way of bank loan	3,500,000
Rate of Loan on monthly reducing balance basis	12%
Tenure of Loan	120 months
EMI of the loan	50,215
Interest for the first year 1-Apr.'10 to 31-Mar.'11	PMT(12%/12,120,-3500000,0,0)
	12*10

Balance loan outstanding after 1 year = PV of outstanding installments after 1 year

=	3307038	PV(12%/12,108,-50215,0,0)
Loan repaid in one year	=	192,962
Total amount of installments in 1 year	=	602,578
Hence, interest repaid in 1 year	=	409,616
Expenses to be incurred on taxes & maintenance		43,000
Total expenses		452,616
		43000+409616

Hence, rent to be fixed to offset these expenses

452,616

12)

D)

Total investment from 15th Dec'02 to 15 Dec'08	70,000
Value of units outstanding	91300
Rate of return obtained on investment	6.65%
	RATE(7,-10000,0,91300,1)

Premium on Premium invested

15-Dec-02	-8000	(-10000)*(1-20%)
15-Dec-03	-9000	(-10000)*(1-10%)
15-Dec-04	-9500	(-10000)*(1-5%)
15-Dec-05	-9500	(-10000)*(1-5%)
15-Dec-06	-9500	(-10000)*(1-5%)
15-Dec-07	-9800	(-10000)*(1-2%)
15-Dec-08	-9800	(-10000)*(1-2%)
23-Jan-10	91300	
		8.47%

XIRR

13)

C)

14)

B)

Case: Dr. Darshan Arora

Policy Year	Annualised Premium	Prm Alloc Chg	Amount Invest	Policy Admin Chg	Mortality Chg	Fund value after charges	Investment Return %	Fund Value c/f (before FMC)	FMC charges	Outstanding Fund value
1	60000	12000	48000	480	2925	44595	10.00%	49055	858	48196
2	60000	6000	54000	480	2925	98791	10.00%	108670	1902	106768
3	60000	6000	54000	480	2925	157363	10.00%	173100	3029	170071
4	60000	3000	57000	480	2925	223666	10.00%	246032	4306	241727
5	60000	3000	57000	480	2925	295322	8.00%	318947	5582	313366
6	60000	3000	57000	480	2925	366961	8.00%	396318	6936	389382
7	60000	3000	57000	480	2925	442977	8.00%	478415	8372	470043
8	60000	3000	57000	480	2925	523638	8.00%	565529	9897	555632

15) **A)** Present value of house on reinstatement basis

Cost of construction three years before 1500000  
 Increase in cost of Construction 8.00%  
 Present value of Insurance on reinstatement basis  $1,889,568 \times (1.08)^{-3}$   
**18.90 Lakh**

**Note:** The value of Insurance on reinstatement basis the depreciation of the property is not considered

16) **A)**

Account opening date 3/28/2005  
 Maturity date 1/4/2020  
 Bal as on 01/04/09 415000  
 Rate of interest 8%

As he is advised to contribute Rs. 70,000/- in the end of every financial year, the number of installments to be contributed before maturity

11 Year 2010 to 2020, March every year

Maximum permissible contribution

70000

Accumulated funds in A/c. before due maturity  
 This account is extended without further contribution for 5 years, hence maturity value after extended period

2,132,814  
 $FV(8\%, 11, -70000, -415000, 0)$   
 3,133,804  
 $2132814 * 1.08^5$

17) **D)**



Nishant	7523	FV(0.5654%,13*12,-30,0,1)	23309	FV(0.8735%,13*12,-70,0,1)	30831	7523+23309
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Age	Amount needed at the age of 18	Age	Amount needed at the age of 18
19	1,295,275	19	1,604,619
20	341,629	20	423,218
21	360,418	21	446,495
22	380,241	22	471,053
23	802,310	23	993,921
	846,437		1,048,587

NPV at age 18 of amounts needed in subsequent years and invested in liquid fund

2,230,332	2,762,990
3,525,607	2762990+1604619
4,367,609	

To accumulate these, monthly investments required till age 18

20,655	(3525607/17069)*100
	14,166

**B)** Net Profit as Per Profit & Loss A/c

Salary paid to working partners:	3,860,000
Book Profit	1,020,000
Maximum Remuneration Allowed to working partners in the case firm carried specified profession u/s 40 (b)=	340000*3
On first 100000@90%=	3860000+1020000
Next 100000@60%=	90,000
on balance @40%=	100000*0.9
	60,000
	1,872,000
	(4880000-200000)*0.4
Total	2,022,000
Max allowable remuneration divided equally in all working partners=	90000+60000+1872000
	674,000
	2022000/3

**C)**

Present Age	37 Years
Retirement Age	58 years
Expected Life of Dr. Darshan	80 Years
Present annual expenses	54000

Inflation	5.50% p.a.	0.4472%	p.m.	$(1+5.5\%)^{(1/12)}-1$
Equity	11% p.a.	0.8735%	p.m.	$(1+11\%)^{(1/12)}-1$
Debt	7% p.a.	0.5654%	p.m.	$(1+7\%)^{(1/12)}-1$
Inflation linked Debt	1.4218% p.a.	0.1177%	p.m.	$(1+0.5654\%)/(1+0.4472\%)-1$

House Hold Exp on Retirement 83112  $FV(5.5\%,21,0,-540000,0)*0.6/12$

Required Corpus at age 58 years 18,872,287  $PV(0.1177\%,(80-58)*12,-83112,0,1)$

Suppose he invests Rs. 100 in each of Equity and Debt MF Schemes

	At the end of	At the end of
	7 years	14 years
		21 years
Equity	12428	36515
Debt	10775	29404
Accumulated Balance	23203	65918
		144557

**13055**  $(18872287/144557)*100$

25)

A)

Rate of interest 16% p.a. monthly compounding

Outstanding tenure (EMIs from Feb 2010 to July 2010) 7 months

Outstanding principal (as on 15th Jan,2010) 280,000

This outstanding amount is the Present Value of 7 future EMIs @ 16% p.a. compounded monthly

Hence, the EMI	42,162
Pre-closure charges (1.5% of outstanding principal)	8,400
Total amount paid by EMI's	295,131
Total interest to be paid if loan is not prepaid	15,131
Amount of interest to be saved net of closure charges	<b>6,731</b>

26)

C)

Loan Amount 9,000,000

Rate of Interest 9.50% p.a.

Tenure of Loan 60 months

EMI	189,017
Principal outstanding after 12 EMIs	7,523,613
Principal repaid over 12 months	1,476,387
Total amount of EMIs	2,268,201
Interest element of EMIs	791,814
Rental receipts expected in 1st year	420,000
%age coverage of interest by rent	<b>53%</b>

27)

A)

28)

**B)**

Inflation

5.50% p.a.

Return on Equity/ Equity MF

11.00% p.a.

Return on Debt/ Debt MF

7.00% p.a.

There is no capital gains tax on Equity Mutual Funds after a holding period of one year, hence post tax return

Real Return on Equity MF scheme

11.00% p.a.

$$\frac{(1+11\%)}{(1+5.5\%)}-1$$

Capital Gains tax on Debt Mutual Funds after a holding period of one year, without indexation is 10%, hence post tax return

Real Return on Debt MF scheme

6.30% p.a.

$$7\%*(1-10\%)$$

$$\frac{(1+6.3\%)}{(1+5.5\%)}-1$$

**0.76%** p.a.

Case Study – Vanisha Lohia (Reference Date: 20<sup>th</sup> February, 2010)

Vanisha Lohia, aged 24 years (born on 12 February 1986) has approached you, a CFP<sup>CM</sup> certificant to prepare a financial plan for her. She is working in a tax consultancy firm in Mumbai. She resides with her parents (father aged 50 years, a businessman and mother, aged 45 years, a homemaker). Vanisha also supports her younger sibling Megha, aged 20 years to the extent of her pocket expenses. She earns an income of Rs 450,000 p.a. She expects her salary to rise every year by 10%.

Expenses

Yearly expenditure on self	:	Rs. 120,000
Yearly expenditure incurred on sibling	:	Rs. 25,000

Annual Salary Components

Basic	:	Rs. 204,000
HRA	:	Rs. 102,000
Transport Allowance	:	Rs. 9,600
Special Allowance	:	Rs. 48,920
Bonus	:	Rs. 37,000
Medical Reimbursement	:	Rs. 15,000
Meal coupons	:	Rs. 9,000
Provident Fund	:	Rs. 24,480

Assets valued as of today (or as specified in footnotes)

Cash/ Bank	:	Rs. 200,000
PPF <sup>1</sup>	:	Rs. 70,000
National Savings Certificate <sup>2</sup>	:	Rs. 6,490
Shares and Mutual Fund <sup>3</sup>	:	Rs. 400,000
Plot of land <sup>4</sup>	:	Rs. 100,000

Vanisha plans to get married at the age of 26. Vanisha has purchased a Whole Life Insurance Cover of Rs 9 Lakh. The annual premium paid is Rs. 16,000.

Liabilities	:	Nil
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You in consultation with Vanisha, arrive at her life goals:

1. To acquire a residential house at a hill station 10 years from now. The cost is Rs 15.50 Lakh today. She plans to make a down payment to the extent of half the prevailing cost of the house at that time, while availing a loan for the balance.
2. To buy a car in five years worth Rs 6 Lakh today by redeeming the required amount from XYZ Equity Fund, the required amount to be accumulated through this fund only.
3. Plan for retirement at the age of 55. Corpus at that time to suffice an inflation-adjusted monthly annuity till the expected life of Vanisha equivalent to Rs. 15,000 monthly expenses at current prices.
4. To buy a suitable cover for health and disability insurance.
5. To invest in Gold ornaments (100 gm) at the time of her marriage approximately 2 years from now.

<sup>1</sup> Account opened on 3<sup>rd</sup> April, 2009 with Rs. 70,000.

<sup>2</sup> Amount invested on 1<sup>st</sup> Jan 2009.

<sup>3</sup> Includes investment in XYZ Equity Fund with 2654.780 units and present NAV of Rs 59.500

<sup>4</sup> Gifted by Grandfather on her 16<sup>th</sup> birthday when market value was Rs. 4 lakh; Cost of Purchase as on 1 January 1986

6. To undertake a trip abroad after five years from now. Create a corpus in such a manner that it lasts for a total of six years. The trip currently costs Rs. 150,000 while the relevant cost escalation is 8% p.a.

Assumptions:

The assumed rate of return on various asset classes is as follows:

Equity & Equity MFs, ETF	:	11% p.a.
Debt, Bonds, Income MFs	:	8% p.a.
Balanced MF scheme	:	9.75% p.a.
Risk free return	:	6.50% p.a.
Inflation	:	5.50% p.a.
Life expectancy of Vanisha	:	80 years

Questions

- 1) Vanisha had earlier approached a CERTIFIED FINANCIAL PLANNER <sup>CM</sup> who suggested investment in certain financial products rather than earning minimal returns in a Savings bank account. The Financial Planner recommended such investments as he would earn commission on sale of such products. Which Code of Ethics binds a CFP<sup>CM</sup> practitioner to disclose conflict of interests?
  - A) Objectivity
  - B) Professionalism
  - C) Integrity
  - D) Fairness
  
- 2) Vanisha wants to accumulate the expected cost of her proposed house at a hill station to the extent of down payment. She wants to know the amount should she invest from today in an Equity Mutual Fund scheme every month for the next nine years? You make a study of the real estate development and potential of the place of investment and therefore assume that property prices there would escalate annually by 7% p.a. in the said period.
  - A) Rs. 7,633
  - B) Rs. 8,473
  - C) Rs. 7,177
  - D) Rs. 6,628
  
- 3) Vanisha weighs the option to buy the house at hill station straight away by utilizing her bank balance and liquidating her investments to the extent of Rs. 4.5 lakh while availing a housing loan @ 8.75% p.a. (on reducing monthly balance basis) for 10 years tenure. She wishes to give the house to an individual who would pay a lump sum of Rs. 80,000 p.a. Maintenance would be taken care of by the individual but annual property tax to the extent of Rs. 6,000 p.a. would be borne by Vanisha. If she goes for this option, what would be the income from house property for FY 2010-11 assuming that the relevant Income tax provisions for the Financial Year 2009-10 will be applicable in the next year also? You assume that renting of house and loan disbursement take place on 1<sup>st</sup> April, 2010 and EMIs are payable on the last day of the month.
  - A) Income of Rs. 10,843
  - B) Loss of Rs. 41,607
  - C) Loss of Rs. 19,407
  - D) Income of Rs. 1,976
  
- 4) Vanisha's father during the financial year 2009-10 has paid medical insurance premium of Rs. 20,000 on his health and on the health of his wife. Further, he has also paid Rs. 20,000 to keep in force an insurance policy on the health of his parents, who are Senior Citizens. The eligible deduction under section 80D for his father would be \_\_\_\_\_.
  - A) Rs. 40,000
  - B) Rs. 35,000
  - C) Rs. 30,000
  - D) Rs. 20,000
  
- 5) Vanisha has an option to invest in the house (at hill station) immediately. She wishes to sell the plot of land for Rs. 9,00,000 and invest the proceeds for buying the new house. For the balance amount she

would avail a loan for the cost of house. She wants to know the eligible amount of exemption under section 54F of the Income-tax Act, 1961, for the FY 2009-10. (C.I.I- 1985-86 : 133, 2000-01 : 406, 2001-02 : 426, 2008-09 : 582; 2009-10 : 632)

- A) Rs. 4,24,812  
 B) Rs. 7,51,463  
 C) No exemption available as the asset transferred is not a residential house  
 D) Rs. 7,63,380
- 6) Vanisha wants to know her tax liability for AY 2010-11.
- A) Rs. 10,830  
 B) Rs. 11,550  
 C) Rs. 10,500  
 D) Rs. 11,910
- 7) For buying gold ornaments on her marriage, Vanisha wants to accumulate funds while not getting exposed to factors other than those affecting gold prices. You suggest her to accumulate funds in the next one year in a Gold ETF scheme by buying units, representing  $\frac{1}{2}$  gram of pure gold in suitable quantity every month. On selling such accumulated units after two years should leave her with enough money, net of capital gains tax, to buy the desired quantity of gold. While she can get the quality of gold for ornaments at 4% cheaper price than the prevailing Gold ETF prices, she needs to provide for 5% of the cost of that quality gold towards making prices. You presume that the prices of gold will appreciate 1% sequentially every month, taking the current price of a unit of such Gold ETF as Rs. 812. She wants from you to calculate how many units of Gold ETF are required to be purchased every month by Vanisha to accumulate gold for her marriage? (Assume 10% applicable capital gains tax on disinvestment)
- A) 17 units in first month and 16 units in the next 2 months, repeat the same every quarter  
 B) 9 units and 8 units in alternate month  
 C) 18 units in first month and 17 units each in subsequent months  
 D) 17 units each in first two months and 16 units in the third month, repeat the same every quarter
- 8) Vanisha wants to accumulate part of the funds through her PPF A/c. for her proposed retirement at her age of 55 years. She intends to accumulate Rs. 40 lakh till March in the year of retirement. She would extend her PPF A/c. after its due maturity in three block periods of 5 years, and would park the final maturity proceeds in risk free instruments till her retirement. She would invest the maximum permissible amount every year in the beginning of April but only in the extended block of periods. She asks from you, what minimum amount she should invest every year in the beginning of April till PPF Account's due maturity before the extension period.
- A) Rs. 9,380  
 B) Rs. 12,756  
 C) Rs. 10,135  
 D) Rs. 18,310

- 9) Vanisha wants to invest systematically every month in an Equity Mutual Fund scheme with immediate effect for five years, so as to create a corpus for her proposed foreign trip starting from the year after 5 years from now. Such corpus is withdrawn and reinvested in a Balanced Mutual Fund scheme. She proposes to contribute 40% of the expenses from her regular savings for her first trip, while drawing the balance from the corpus. The same amount as drawn in the first year is drawn every year from the corpus for 5 more years and balance from her regular savings. She asks you to calculate the amount of monthly investment required to achieve that goal
- A) Rs. 6,999  
 B) Rs. 7,159  
 C) Rs. 7,849  
 D) Rs. 8,048
- 10) Vanisha proposes to liquidate shares worth Rs. 1.5 lakh and invest in an equity MF and to start investing from today till she retires, on a monthly basis in the same equity mutual fund to accumulate her retirement corpus. She also expects to accumulate separately through her PPF A/c. a sum of Rs. 40 lakh to partly build the proposed corpus. The corpus would be invested in risk free instruments post-retirement to generate an inflation linked annuity till her expected lifetime. She wants to know how much she should invest monthly to accumulate for sufficient retirement corpus.
- A) Rs. 1,990  
 B) Rs. 4,710  
 C) Rs 6,130  
 D) Rs. 1,470
- 11) Vanisha's father had suffered loss from house property and loss from business and profession for the previous year 2008-09 and has delayed in filing his return of income before the due date. Will her father be eligible to carry forward losses at the time of filing his belated return of income? (Assuming he does not have any corresponding income to set off of losses)
- A) Yes, can he carry forward both  
 B) No, cannot carry forward both  
 C) Can carry forward only loss from house property  
 D) Can carry forward only loss from business and profession
- 12) Vanisha wants to understand the extent of correlation between the gold prices internationally and the gold prices in India. You opine that foreign exchange fluctuations play a major role here. Interestingly, the rise in gold prices internationally is accompanied by a weakening dollar, thereby smoothening out to a large extent Rupee price appreciation in gold. Currently, the price of gold per troy ounce is US\$ 1,113 and price in India for the same quality of gold is Rs. 1,650 per gram. Current exchange rate is: 1US\$ = INR 46.22. She presumes a scenario where the price of gold after 6 months is US\$ 1,250 per troy ounce but US\$ depreciates against Rupee to 1US\$ = INR 44.00. She wants to know what percentage appreciation happen in Rupee prices as per above situation. (Assume no other factor affect price of gold) (1 troy ounce = 31.1035 gram).
- A) 7.17%  
 B) 6.91%  
 C) 7.51%

D) 12.31%

- 13) Vanisha wants to know which types of insurance she should buy, considering the assets, liabilities and her future goals. In the order of importance, which insurance should she ideally purchase?
1. Life Insurance
  2. Health Insurance
  3. Disability Insurance
  4. Property Insurance
- A) 3, 1, 2, 4  
B) 1, 3, 2, 4  
C) 4, 3, 1, 2  
D) 3, 2, 1, 4
- 14) Vanisha wants to buy her residential house today at a hill station as she has received a fabulous offer for a home loan. According to you, which types of insurance she should buy to cover that risk.
- A) Life Insurance and disability Insurance  
B) Disability Insurance and Accidental Insurance  
C) Householder's Policy and Home loan Protection plan  
D) Health Insurance and Life Insurance

Case – Kunal Goswami (Reference date 23<sup>th</sup> January, 2010)

Kunal Goswami aged 39 years, has approached you, a practicing CFP<sup>CM</sup> certificant, for a critical evaluation of his finances and making a Financial Plan for his family. During your discussion with him, he has disclosed factors which would help you in restructuring his current portfolio and recommending a change in course, if required.

Kunal is a Software Engineer. He has returned to India in April, 2009 after working in New York for four years in a leading IT company's US based venture. He has now settled in Delhi in the same company. His wife Reshmi, aged 38 years is a housewife. They have two daughters Ananya and Nayana, aged 13 and 10 years, respectively. Both the daughters are in school presently and want to pursue MBA from a US based institute. Kunal is staying in a rent free accommodation provided by his employer at Delhi. Kunal's father Parmeshwar Goswami, aged 65 years and mother Janki Devi, aged 62 years, are staying at their native place and are not dependent on him.

Kunal's monthly salary for the FY 2009-10:

1.	Basic Salary	Rs. 1,20,000
2.	D A (forming part of Salary)	50% of Basic Salary
3.	Transport Allowance	Rs. 2,000
4.	Children Education Allowance	Rs. 1,000 per child
6.	Medical Allowance	Rs. 4,000

His employer has also provided him a Laptop. His household monthly expenses at present are Rs. 80,000. Kunal is expecting a year on year increase in his Basic Salary in the beginning of financial year at the rate of 10% till retirement.

His Assets and Liabilities as on 23<sup>rd</sup> Jan 2010 are as follows:

Assets	Amount (in Rs. Lakh)
Equity Oriented Mutual Fund Schemes	30.00
Equity shares	20.00
Car	6.00
PPF (Maturity on 1 <sup>st</sup> April, 2011)	12.00 (Balance as on 31.03.2009)
Gold Jewellery	17.00
Bank FD	18.00 (Maturing on 23th Feb, 2011)
Cash in hand	2.00
Money Market Mutual Fund	8.00
PO MIS	3.00 (Maturing on 20.03.2010)
ULIP (Market value)	4.35 (no. of units 15,310)

Liabilities Nil

Life Insurance

He bought a Term Insurance five years ago with a sum assured of Rs. 50 lakh for which he pays premium of Rs. 21,000 p.a. He also has a ULIP plan which he bought on 20<sup>th</sup> July 2004 with a sum assured of Rs. 15 Lakh, term of 20 years for which he pays yearly premium of Rs. 55,000.

Kunal has the following goals:

1. He wants to purchase a flat immediately costing Rs. 50 Lakh, 30% of the cost is realized by sale of equity shares and remaining by home loan for a term of 20 years.
2. He wants Rs. 30 lakh for higher education of each of his daughters when they individually attain 21 years of age. He would segregate 55% and 45% of his Equity MF schemes Portfolio, as it stands today, for Ananya and Nayana for the purpose. Additionally, he would invest a certain equal amount every month in a Debt MF scheme to accumulate the required amount when needed.
3. He would require Rs. 20 lakh each for the wedding of his daughters at their respective age of 25 years. He would invest his Bank FD maturity amount when due, in a balanced MF scheme. He will immediately redeem his Money Market MF scheme and invest the proceeds in this Balanced MF scheme.
4. He wants to retire at 62 years of age. He wants an inflation-linked monthly annuity equivalent to 80% of his pre-retirement monthly household expenses till the expected life time of Reshmi. He would extend his PPF A/c when it matures for two successive terms of 5 years each and would invest the maximum permissible amount every year in the beginning of every financial year, while contributing the same amount on 3<sup>rd</sup> March, 2010 in the current financial year. Additionally, he would invest 5% of his Basic Salary every year in a Balanced MF scheme till retirement and move his PPF A/c. maturity (as extended) proceeds in this scheme.
5. He wishes to purchase a new car worth Rs. 12 lakh.

Assumptions

- |                            |             |
|----------------------------|-------------|
| 1) Risk free return        | 6.50% p.a.  |
| 2) Inflation               | 5.50% p.a.  |
| 3) Equity Share/ Equity MF | 11.00% p.a. |
| 4) Debt                    | 7.00% p.a.  |
| 5) Liquid Funds            | 5.50% p.a.  |
| 6) Balance mutual fund     | 9.75 %p.a.  |
| 7) Life expectancy         |             |
| a. Kunal                   | : 80 years  |
| b. Reshmi                  | : 82 years  |

- 15) Kunal wants, as a contingency measure, a cover provision for his family's household monthly expenses till the expected life of Reshmi, such expenses reduced to 75% of current household monthly expenses inflation linked. What approximate amount of life insurance cover is required by him? Assume the proceeds of such a cover would be invested in a Debt Mutual Fund scheme.
- A) Rs. 236 Lakh  
 B) Rs. 309 Lakh  
 C) Rs. 100 Lakh  
 D) Rs. 224 Lakh
- 16) Kunal has tied up with a bank for housing loan at fixed rate of interest of 9.5% p.a. Payment to the Builder is to be made in parts after specified intervals. Of the total loan amount, 20% to be taken from bank and paid to builder along with realization from equity Shares as First installment on 28 Feb, 2010; 40% of loan amount to be paid as Second installment on 30<sup>th</sup> Sep, 2010 and remaining 40% of loan amount to be paid as final installment on 31st March, 2011 when the possession can be taken. The loan has to be arranged in such a way to pay the installments when scheduled. The EMI increases with the receipt of each fresh disbursement by the Bank so as to repay the new outstanding loan amount equally by way of monthly installments in the remaining tenure of the loan. He wants to know what would be the final EMI payable after the full disbursement of loan amount. EMI is paid on the last date of month.
- A) Rs. 33,012  
 B) Rs. 31,725  
 C) Rs. 32,625  
 D) Rs. 37,232
- 17) Kunal wants to know the approximate monthly amount he should invest in a Debt Mutual Fund scheme to achieve the goal of higher education of his daughters, in addition to the proposed segregated amount in Equity Mutual Fund scheme portfolio. The required higher education expenses are stated at today's cost. The amounts are invested in separate investment accounts till one month prior to their due withdrawal.
- A) Ananya Rs. 6,275; Nayana Rs. 5,859  
 B) Ananya Rs. 10,655; Nayana Rs. 12,120  
 C) Ananya Rs. 11,530; Nayana Rs. 13,205  
 D) Ananya Rs. 4,560; Nayana Rs. 5,565
- 18) Kunal shall be accumulating the funds for marriage of his both daughters in a Balanced Mutual Fund scheme and proposes to transfer in the same Scheme immediately the amount of his Money Market Mutual Fund scheme, while the maturity amount of his Fixed Deposit in bank will be transferred in the Scheme a year later. He wants to know excess/shortfall in the Scheme at the time of marriage of his younger daughter Nayana. The marriage expenses are stated at today's cost. Assume Interest on Bank Deposits are paid quarterly and is used for consumption.
- A) Excess of Rs.3.59 lakh  
 B) Shortfall Rs. 8.15 lakh  
 C) Excess Rs. 7.60 lakh  
 D) Excess Rs. 2.71 lakh

- 19) Kunal wants to know the shortfall/surplus in the required retirement corpus to sustain his post-retirement expenses with the proposed investment option. Assume Post-retirement, he should invest the retirement corpus in risk free investments.
- A) Shortfall of Rs. 221 Lakh
  - B) Shortfall of Rs. 19.75 Lakh
  - C) Surplus of Rs. 38.78 Lakh
  - D) Surplus of Rs. 45.95 Lakh
- 20) Kunal wants to know his taxable value of Rent Free Accommodation is for FY 2009-10. His employer is paying monthly rent of Rs. 30,000 for this accommodation with furniture worth Rs. 2 Lakh also provided by employer.
- A) Rs. 3,56,600
  - B) Rs. 3,80,000
  - C) Rs. 3,36,600
  - D) Rs. 2,44,400

- 21) Kunal's Mutual Fund investments consist of four different funds. Performances of these funds are as follows:

Mutual Fund	Fund Return of 1 year	Standard Deviation
A	25.33%	12.15
B	35.54%	21.15
C	18.25%	10.78
D	40.06%	32.58

He wants to know whether the returns on these Mutual Funds are due to smart investment decisions or a result of excess risk. How would you rank these funds from the best to worst on the basis of Sharpe Ratio?

- A) A,B,C,D
  - B) D,A,B,C
  - C) B,C,A,D
  - D) B,C,D,A
- 22) Kunal plans to buy a car by making a down payment of Rs. 4 Lakh from his personal funds and remaining Rs. 8 Lakh by taking a car loan for 5 years. A Car financing firm ABC Ltd. offers a flat rate of 6% p.a. and processing fee of 2% recovered upfront. Another firm XYZ Ltd. offers 10.25% p.a. on monthly reducing balance basis and adds a processing fee of 1.5% in the loan amount to be recovered in EMIs over years. According to you, which firm's offer is better for Kunal, and the difference in terms of total interest and charges paid?
- A) XYZ Ltd., Rs. 14,841 lower
  - B) XYZ Ltd., Rs. 30,227 lower
  - C) XYZ Ltd., Rs. 24,728 lower
  - D) Both offers nearly match up

- 23) Kunal wants to invest in a new ULIP, but he wants to be cautious before entering a long period of contract. As Per IRDA (ULIP) Guidelines, if he wants to return the policy within 15 days free look period what amount would be refunded to him?
- A) He shall be refunded the fund value subject to deduction of expenses towards medical examination, stamp duty and proportionate risk premium for the period of cover.
  - B) Full Premium paid is returned back to him.
  - C) Premium paid less commission paid to intermediary is refunded to him.
  - D) He shall be refunded the fund value.
- 24) As per current IRDA guidelines for ULIP products, you advise Kunal to invest in his ULIP policy through top up without increasing the sum assured. What maximum amount can be put as top up by Kunal today? (Assume Kunal has not paid any top up premium in this policy from beginning)
- A) Rs. 55,000
  - B) Rs. 82,500
  - C) Rs. 1,65,000
  - D) No such cap on top up amount is prescribed
- 25) While entering into a relationship with you, Kunal assumed that you being a CERTIFIED FINANCIAL PLANNER<sup>CM</sup> practitioner, you are fully able to take care of the execution of all aspects of his Financial Plan, i.e. Taxation, Insurance, Investments, etc. As per FPSB India Code of Ethics, what is the best proposition in this context?
- A) This is the right assumption which can be made about all CERTIFIED FINANCIAL PLANNER<sup>CM</sup> professionals.
  - B) The scope and limitations of the services of the CERTIFIED FINANCIAL PLANNER<sup>CM</sup> practitioner needs to be disclosed in the beginning, specifically in writing, by the professional to the client.
  - C) A CERTIFIED FINANCIAL PLANNER<sup>CM</sup> practitioner can never take care of all aspects of a Financial Plan.
  - D) A CERTIFIED FINANCIAL PLANNER<sup>CM</sup> practitioner is concerned with only making a Financial Plan and not its execution.
- 26) Recently in an unfortunate event, one of Kunal's brothers died in a road accident at the age of 32. He was a bachelor and he died intestate. Kunal's parents were living with his deceased brother. Apart from Kunal there are three other siblings of the deceased. Kunal wants to know the applicable order of priority as per Hindu Succession Act for the disposition of his deceased brother's property.
- A) Both parents will get the priority over all siblings of Kunal, including Kunal himself.
  - B) All siblings of Kunal will get the priority over their parents.
  - C) Kunal's mother will get priority over her husband and sons.
  - D) All of them will have equal right over the property of the deceased.
- 27) Kunal wants to know relative advantages of having exposure to Gold as an asset class through Gold Exchange Traded Funds (Gold ETFs) which can be purchased and traded as units through the Demat A/c. Which of the following is not appropriate in this context?
- A) In Gold ETF, Long Term Capital Gains tax is levied after one year of purchase against 3 years in case of physical Gold.

- B) In case of an investor holding physical Gold, he has to pay Wealth tax after the net wealth crosses a certain limit.
  - C) Most of the Gold ETF schemes available in India reflect international prices of Gold and are insulated from local demand-supply factors.
  - D) Securities Transaction Tax (STT) is applicable on purchase and sale of Gold ETF.
- 28) Kunal has informed you that his Post Office MIS account is maturing next month. He wants to know whether this account can be extended further and, if so, for what duration?
- A) Cannot be extended.
  - B) Can be extended for 24 months.
  - C) Can be extended for 60 months.
  - D) Can be extended for 72 months.

**Solutions – Vanisha Lohia**

1) **A)**

2) **A)**

Current cost of acquiring house	1,550,000	
Cost escalated after 10 years	3,049,085	$1,550,000 * 1.07^{10}$
Down payment proposed	1,524,542	$3049085/2$
Returns expected from Equity	11% p.a.	
Monthly return	0.8735% apr	$(1+11\%)^{(1/12)}-1$
Amount to be accumulated in Investments to be made up to	9 years	
Accumulations up to 9 years	108 months	
Monthly investments	1,373,462	$1,524,542/1.11$
	(7,633)	$PMT(0.8735\%,108,0,1373462,1)$
	<b>Rs. 7,633</b>	

3) **B)**

Loan availed for the house	1,100,000	$1550000-450000$
Rate of interest	8.75% p.a.	
Tenure of loan	120 months	
EMI of the loan	13,786	
Loan outstanding as on 1st April, 2011 (= PV of remaining EMIs as on date)	1,027,976	$PV(8.75\%/12, 108, -13786, 0, 0)$
Loan (principal component) to be repaid in one year	72,024	$1100000-1027976$
Interest component to be repaid	93,407	$12 * 13786 - 72024$
Calculation of Income from house property		
Actual rent	80,000	
Less : Property taxes paid	6,000	
Net annual value	74,000	$80000-6000$
Less : Standard deduction @ 30%	22,200	$74000 * 0.3$
Less : Interest on self occupied property	93,407	
Loss from house property	<b>(41,607)</b>	$74000 - (22200 + 93407)$

4) **B)**

5) **B)**

Cost of land on 1.01.1986 100,000

Date of gift as on 12.2.2002

Cost of acquisition = cost to the previous owner

As per Section 49(1) in case of gift of capital asset, Cost of acquisition is cost to previous owner and indexation is done from the year in which gift is made.

However, since asset acquired is long term indexed cost of acquisition needs to be computed

Sale consideration	900,000	
Indexed cost of acquisition	148,357	$100000 * (632/426)$
Capital gains	<u>751,643</u>	
Exemption under section 54F=	<b>751,643</b>	

6) **C)**

Basic 204,000

HRA 102,000

- 102,000

Transport 800\*12

Exemption= 800 p.m 800\*12 -

Bonus 37,000

Special 48,920

Gross total income 391,920  $204000+102000+37000+48920$

Less: 80C max dedn 100,000 (100,000) an amount of Rs 110,480 qualifies for deduction however maximum of 100,000

Net total taxable income 291,920

Tax liability: tax @ 10% 10,192  $(291920-190000)*10\%$

add: education cess @3% 306

**10,498**

7) **C)**

Funds required to buy 100 grams of gold after 2 years

Expected price of gold 2 years from now	per 1/2 gram of Gold ETF	1,031	$812 * (1.01)^{24}$
Price of ornament quality gold	per gram	1,980	$1031 * 2 * (1-4\%)$
Price of ornaments including making charges	per gram	2,079	$1980 * (1+5\%)$
Price of 100 gms. of ornaments		207,855	$2079 * 100$

This amount is required to be accumulated net of Taxes

Suppose, one unit of Gold ETF representing 1/2 gram gold is bought every month beginning immediately

Total price paid for buying Gold ETF units in one year	10,298	$812 * ((1.01)^{12} - 1) / (1.01 - 1)$
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However, these units bought would also appreciate at the same rate for one more year before disinvestment

Disinvestment price	per gram of Gold ETF purity	1,031
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Amount received on selling 12 gold units after 2 years	12,372	$12 * 1031$
Capital Gains	2,074	$12372 - 10298$
Tax on Capital Gains	207	$2074 * 0.1$
Net proceeds after tax	12,165	$12372 - 207$

Therefore, units to be purchased every month **17.09**  $207855 / 12165$

**This can be accumulated by buying 18 units in the first month and 17 units each in subsequent months**

8) C)

Amount targeted to be accumulated till retirement (year Mar.'41)	4,000,000
Due Maturity date of PPF A/c.	1st April, 2025
Three extended blocks maturity	1st April, 2040

Final maturity proceeds are parked in risk free instruments for 1 year, till Mar., 2041

Risk free rate of return	6.50% p.a.
Amount required to be accumulated in PPF A/c. till 31st Mar.'40	3,755,869 $4000000 / (1+0.065)$

Amount required to be accumulated till 31st	536,910 $-PV(0.08, 15, -75600, 3755869, 0)$
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The corpus is required to be accumulated to yield inflation linked monthly annuity till her 80 years of age when invested in risk free instruments

Rate - Risk Free	6.50% p.a.	
Risk free - Monthly effective rate	0.5262%	$(1+6.5\%)^{(1/12)}-1$
Inflation	5.50% p.a.	
Inflation - Monthly effective rate	0.4472%	$(1+5.5\%)^{(1/12)}-1$
Real Rate of Return - monthly	0.079%	$(1+0.5262\%)/(1+0.4472\%)-1$
No. of monthly annuity payments	300	$12*(80-55)$
Corpus reqd for retirement	21,086,341	$PV(0.078647846\%,300,-78871,0,1)$
PPF A/c contribution in Corpus	4,000,000	
Net Corpus to be accumulated	17,086,341	$21086341-4000000$
Investment today shifted to Equity MF	150,000	
Monthly effective rate of Equity MF	0.8735%	$(1+11\%)^{(1/12)}-1$
Monthly investment required in equity	(4,708.87)	$PMT((1.11)^{(1/12)}-1,(55-24)*12,-150000,17086341,1)$
	<b>Rs. 4710</b>	

11) C)

12) A)

1 troy ounce	=	31.1035	
<u>Today</u>			
Cost per troy ounce in US\$	=	1,113 US\$	
Cost per gram in USD		35.78 US\$	$1113/31.1035$
Cost per gram of gold in INR		1650.00 INR	
<u>After six months</u>			
Cost per troy ounce in US\$	=	1,250 US\$	
Cost per gram in USD		40.19 US\$	$1250/31.1035$
Cost per gram of gold in INR		1768.29 INR	$40.19*44$
Appreciation of Gold prices in INR		<b>7.17%</b>	$1768.29/1650-1$

13) D)

14) C)

**Solutions-Kunal Goswami**

15) A)

Term	44	$82-38$	Till Reshmi is 82 years	
inflation	5.50% p.a.	0.4472%	p.m.	$(1+5.5\%)^{(1/12)}-1$

Returns	7.00% p.a.	0.5654%	p.m.	$(1+7\%)^{(1/12)}-1$
Real rate of return	1.4218% p.a.	0.1177%	p.m.	$(1+1.4218\%)^{(1/12)}-1$
Requirement for household expenses		60000	p.m.	$80000*.75$
PV of future monthly requirement		<b>23610866</b>		$PV(0.1177\%,44*12,-60000,0,1)$
		<b>236 lakh</b>		

16) A)

Value of flat	5,000,000
Down payment made by sale of equity shares	1,500,000
Outstanding payment to be made by taking loan from Bank	3,500,000 $5000000-1500000$
1st Installment received from Bank on 28-Feb-2010	700,000 $3500000*0.2$
2st Installment received from Bank on 30-Sep-2010	1,400,000 $3500000*0.4$
Final Installment received from Bank as on 31st March, 2011	1,400,000 $3500000*0.4$
Total Loan amount	3,500,000

Rate of interest 9.50%  
 Tenure of Loan 20 years 240 months

	Disbursed 1- Feb-09	Loan o/s	Interest	Prin. Repaid
EMI with the 1st Installment of Loan	28-Feb-10	700000		
Disbursed 25 Feb 2010	31-Mar-10	699017	5542	983
700000	30-Apr-10	698026	5534	991
6,524.92	31-May-10	697027	5526	999
$PMT(0.095/12,240,-700000,0,0)$	30-Jun-10	696020	5518	1007
EMI with the 2nd Installment of Loan	31-Jul-10	695005	5510	1015
Disbursed 30-Sep-10	31-Aug-10	693982	5502	1023
1,400,000	30-Sep-10	2092951	5494	1031
Total loan outstanding =	31-Oct-10	2089813	16569	3138
19707	30-Nov-10	2086651	16544	3163
$PMT(9.5\%/12,233,-2092951,0,0)$	31-Dec-10	2083463	16519	3188
EMI with the 3rd Installment of Loan	31-Jan-11	2080250	16494	3213
Disbursed 31-March-2011	28-Feb-11	2077012	16469	3238
140000	31-Mar-11	3473748	16443	3264
Total loan outstanding =	30-Apr-11	3468236	27501	5511
<b>33012</b>	31-May-11	3462681	27457	5555
$PMT(9.5\%/12,227,-3473748,0,0)$				

Continue till EMI-240

17) A)

Fund required for higher education of Ananya at the age of 21	4,604,060	$FV(0.055,8,0,-3000000,1)$
Fund required for higher education of Nayna at the age of 21	5,406,277	$FV(0.055,11,0,-3000000,1)$
Return on debt fund	7% p.a.	
Monthly Return	0.56541% p.m.	

Investment Period for Ananya (in months)	96	$8*12$
Allocation of Equity MF Portfolio		
Ananya		
Equity MF Portfolio	55%	$1650000$
Value of Portfolio at the age of 21	3,802,487	$3000000*0.55$
Shortfall	801,572	$FV(11\%,8,0,-1650000,1)$
		$4604060-3802487$

Monthly Investment required in debt fund	6,275	$PMT(0.56541\%,96,0,-801572,1)$
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Investment Period for Nayana (in months)	132	$11*12$
Allocation of Equity MF Portfolio		
Nayana		
Equity MF Portfolio	45%	$1350000$
Value of Portfolio at the age of 21	4,254,872	$3000000*0.45$
Shortfall	1,151,405	$FV(11\%,11,0,-1350000,1)$
		$5406277-4254872$

Monthly Investment required in debt fund	5,859	$PMT(0.56541\%,132,0,-1151405,1)$
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18) A)

Fund required for wedding of Ananya at the age of 25	3,802,415	$FV(0.055,12,0,-2000000,1)$
Fund required for wedding of Nayna at the age of 25	4,464,953	$FV(0.055,15,0,-2000000,1)$

PV for fund required for wedding of Ananya at the age of 25	1,245,103	$PV(0.0975,12,0,-3805415,1)$
PV for fund required for wedding of Nayna at the age of 25	1,105,984	$PV(0.0975,15,0,-4464953,1)$
Total	2,351,087	$1245103+1105984$

Allocation of Bank Deposits after maturity to balanced fund		
Present value of bank deposits discounted at balance mutual fund rate	1640091	$1800000/1.0975$
Redemption value of Money Market mutual fund	800000	

Total	2440091	$1640091+800000$
Excess amount in today's value to achieve the goal	89004	$2440091-2351087$
Excess value in the scheme at the time of marriage of Nayana	359317	$89004*(1.0975)^{15}$
	<b>3.59 Lakh</b>	

19) A)

Retirement corpus required at the time of retirement age of 62			
Post retirement monthly expenses in the first month of retirement	219,274	$FV(0.055,23,0,-80000*0.8,0)$	
No. of months expenses required till Reshmi Age 82	252	$21*12$	
Real rate of return post-retirement	0.9479% p.a.	$((1+0.065)/(1+0.055))-1$	0.0786% p.m. $(1+0.9479\%)^{(1/12)-1}$
Retirement corpus required	50,147,322	$PV(0.0786\%,252,-219274,0,1)$	
PPF Balance as on 31-03-2009	1200000		
contribution as on 3 Mar 2010	70000		
Interest on PPF Balances	96467	$(1200000*8\%)+(70000*8\%*1/12)$	
Balance as on 1st April 2010	1366467	$1200000+70000+96467$	
Balance as on 1st April 2021	4444506	$FV(0.08,11,-70000,-1366467,1)$	
Balance as on retirement (12 years in Balanced MF)	13573062	$FV(0.0975,12,0,-4444506,1)$	
Annual Basic Salary	1440000	$120000*12$	
Increase in salary	10% p.a.		
Annual Investment	72000	$1440000*5\%$	
Return on Balanced MF Scheme	9.75%		
Accumulated value at the time of retirement	200.4246725	$((1+r)^n-(1+g)^n)/(r-g)*(1+r)$	$((1+9.75\%)^{23}-(1+10\%)^{23})/(9.75\%-10\%)*1.0975$
	14,430,576	$72000*200.4246725$	
Total Accumlated corpus at retirement	28,003,638	$13573062+14430576$	
Shortfall in corpus	-22143684	$28003638-50147322$	
	<b>221 Lakh</b>		

20) A)

<b>Taxable value of Rent Free Accomodation</b>		
Basic Salary	1,440,000	$120000*12$
DA	720,000	$1440000*0.5$
Transport Allowance	14,400	
Children Edu	21,600	
Medical Allowance	48,000	
Gross Taxable Salary	2,244,000	

RFA	336,600	$2244000 * 0.15$
Actual rent paid by employer	360,000	$30000 * 12$
Whichever is lower	336,600	
Add. 10% cost of furniture	20,000	$200000 * 0.1$
<b>Taxable Value</b>	<b>356,600</b>	$336600 + 20000$

21) A)

Mutual Fund	Return	SD	Sharpe Ratio		Rank
A	25.33%	12.15	1.5498%	$(25.33\% - 6.5\%) / 12.15$	1
B	35.54%	21.15	1.3730%	$(35.54\% - 6.5\%) / 21.15$	2
C	18.25%	10.78	1.0900%	$(18.25\% - 6.5\%) / 10.78$	3
D	40.06%	32.58	1.0301%	$(40.06\% - 6.5\%) / 32.58$	4

22) A)

option -1	Flat Rate	6%	
Loan Amount	800,000		
No. of EMI	60		
Processing Fee	16,000	$800000 * 0.02$	
Interest	240,000	$800000 * 6\% * 5$	
Total interest & charges paid	256,000	$16000 + 240000$	
option - 2	Reducing balance Interest rate	0.1025	
Loan Amount	800,000		
No. of EMI	60		
Processing Fee	12,000	$800000 * 0.015$	
Total loan amount	812,000	$800000 + 12000$	
EMI	17,353	$PMT(10.25\% / 12, 60, -812000, 0, 0)$	
Total interest & charges paid	241,159	$(17353 * 60 - 800000)$	
XYZ is less by	<b>14,841</b>	$256000 - 241159$	

23) A)

24) B)

Annual Premium paid per annum	55,000	
Total premium paid : 6 installments till date	330,000	$55000 * 6$
Maximum top up permissible as per IRDA guidelines, as a percentage of total regular premia paid till date without increasing the sum assured	25%	
Hence, maximum Top Up amount to be invested today	<b>82,500</b>	$330000 * 25\%$

25) **B)**

26) **C)**

27) **D)**

28) **A)**