

MOCK TEST PAPER
FINAL (NEW) COURSE: GROUP – II
PAPER – 6B: FINANCIAL SERVICES AND CAPITAL MARKETS
SOLUTIONS

ANSWERS TO CASE STUDY: 1**Solution to Question 1:**

It is true that a factor not only finance trade debts but also performs various other functions. These functions include:

- (i) **Maintenance/administration of sales ledger:** The factor maintains the clients' sales ledgers. On transacting a sales deal, an invoice is sent to the customer and a copy of the same is sent to the factor. The factor also gives periodic reports to the client.
- (ii) **Collection facility:** The factor undertakes to collect the receivables on behalf of the client relieving him of the problems involved in collection, and enables him to concentrate on other important functional areas of the business. It also enables the client to reduce the cost of collection by way of savings in manpower, time and efforts.
- (iii) **Credit Control and Credit Protection:** Assumptions of credit risk is one of the most important functions of the factor. This service is provided where debts are factored without recourse. The factor in consultation with the client fixes credit limits for approved customers.
- (iv) **Advisory Services:** By virtue of their specialized knowledge and experience in finance and credit dealings and access to extensive credit information; factors can provide the following information services to the clients:
 - a. Customer's perception of the client's products, changing in marketing strategies, emerging trends etc.
 - b. Audit of the procedures followed for invoicing, delivery and dealing with sales returns.
 - c. Introduction to the credit department of bank/subsidiaries of banks engaged in leasing, hire-purchase, merchant banking.

Solution to Question 2:

We need to perform two distinct calculations - one which calculates the cost of factoring and one which calculates the cost without factoring. Then, the difference between the two calculations will be the cost /benefit of factoring.

A. Cost of factoring

Credit Sales for last year	6,40,00,000
Expected New credit sales level	7,68,00,000
Expected average collection period	30
Average level of receivables (7,68,00,000*30/360)	64,00,000
Receivables advanced by factor (80%)	51,20,000
Factoring Commission (64,00,000*2%)	1,28,000
Amount available for advance (51,20,000-1,28,000)	49,92,000

Factoring interest @12% (49,92,000*12%*30/360)	49,920
20% still financed by overdraft	12,80,000
Overdraft interest (12,80,000*11%*30/360)	11,733
Annual cost	
Factoring Commission (1,28,000*360/30)	15,36,000
Factoring Interest charges (49,920*360/30)	5,99,040
Overdraft charges (11,733*360/30)	1,40,800
Total (A)	22,75,840

B. Cost of not factoring

Credit Sales for last year	6,40,00,000
Expected New credit sales level	7,68,00,000
Expected average collection period	45
Average level of receivables (7,68,00,000*45/360)	96,00,000
Overdraft interest	10,56,000
Credit admin cost	13,00,000
Total (B)	23,56,000

Since the cost of factoring is less than cost of not factoring, it is financially beneficial to employ the services of a factor.

Solution to Question 3:

Summary of the distinct advantages of factoring over other methods of finance/facilities provided to an exporter:

- (i) Immediate finance up to a certain percentage (say 75-80 percent) of the eligible export receivable. This pre-payment facility is available without a letter of credit – simply on the strength of the invoice(s) representing the shipment of goods.
- (ii) Credit checking of all the prospective debtors in importing countries, through own databases of the export factor or by taking assistance from his counterpart(s) in importing countries known as import factor or established credit rating agencies.
- (iii) Maintenance of entire sales ledger of the exporter including undertaking asset management functions. Constant liaison is maintained with the debtors in importing countries and collections are effected in a diplomatic but efficient manner, ensuring faster payment and safeguarding of financial costs.
- (iv) Accordingly, bad debt protection up to full extent (100 percent) on all approved sales to agreed debtors ensuring total predictability of cash flows.
- (v) Efficient and fast communication system through letters, e-mail, and telephone or in person in the buyer's language and in line with the national business practices.
- (vi) Consultancy services in areas relating to special conditions and regulations as applicable to the importing countries.

Solution to Question 4:**(i) d**

To determine the correct answer, we need to compute working capital limit under the given methods.

Under the **Turnover method**, 25% of the projected sales is the working capital requirement. Turnover method also says that 5% of the sales would be the net working capital. The limit would be 20% of the sales. Therefore, the working capital limit under turnover method would be computed as follows:

Projected sales	8,00,00,000
Working capital requirement (25% of sales)	2,00,00,000
Minimum margin money (5% of sales)	40,00,000
Fund based working capital limit (20% of sales)	1,60,00,000

Hence, Statement a is incorrect.

Under **method 1 of maximum permissible banking finance**, the borrower has to arrange 25% of working capital gap as margin. Therefore, the working capital limit would be computed as follows:

Projected current assets	5,00,00,000
Projected current liabilities	2,00,00,000
Working capital gap (X)	3,00,00,000
25% of X (Y)	75,00,000
Maximum Permissible banking finance (X-Y)	2,25,00,000

Hence, Statement b is incorrect.

Under **method 2 of maximum permissible banking finance**, the borrower has to arrange 25% of Total Current Assets (TCA) as margin. Therefore, the working capital limit would be computed as follows:

Estimated current assets	5,00,00,000
Estimated current liabilities	2,00,00,000
Working capital gap (X)	3,00,00,000
25% of total current assets (Y)	1,25,00,000
Maximum Permissible banking finance (X-Y)	1,75,00,000

Hence, statement c is incorrect.

Statement d is correct.

(ii) d

A company's investment in total current assets signifies the Working Capital. So, Gross working capital is equal to total current assets. Gross Working Capital for Vrikshya is computed as follows:

Trade receivables	40,00,000
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Cash and cash equivalents	5,00,000
Total current assets/Gross working Capital	45,00,000

Option a is incorrect as it reduces trade payables from total current assets. Option b is incorrect as it reduces trade payables and short term provisions from total current assets.

Option c is incorrect as it represents net working capital

(iii) d

financing upon the financing standing of the availing bank happens in forfaiting.

(iv) c

The calculation is as under:

Annual credit sales	1,20,00,000
Average collection period	50
Average level of receivables $(1,20,00,000 \times 50/365)$	16,43,836
Receivables advanced by factor (80%) (A)	13,15,068
Factoring Commission @2% of 16,43,836 (B)	32,877
Amount available for advance $(13,15,068 - 32,877)$	12,82,191
Factoring interest @10% $(12,82,191 \times 10\% \times 50/365)$ (C)	17,564
Amount remitted to Vrikshya (A-B-C)	12,64,627

(v) b

The calculation is as under:

Amount remitted to Vrikshya as calculated above (X)	12,64,627
Factoring cost for 50 days:	
Factoring Commission	32,877
Factoring interest	17,564
Total	50,441
Factoring cost for the year $(50,441 \times 365/50)$ (A)	3,68,219
Less: Costs saved	
Bad debts (2% of 1,20,00,000) (B)	2,40,000
Administration costs (C)	50,000
Net factoring cost (A-B-C)	78,219
Net factoring cost (%) $(78,219/12,64,627 \times 100)$	6.19

Option a is incorrect as it calculates net factoring cost on 80% of receivables and not the amount remitted to client.

Option c is incorrect as it nets annual costs of bad debts and administration against the factoring cost for 50 days.

Option d is incorrect as it nets bad debt cost for 50 days and annual administration costs against the factoring cost for 50 days.

ANSWERS TO CASE STUDY: 2

Solution to Question 1:

It is true that just like other financial products, Collateralized Loan Obligations (CLO) are also subject to various types of risk. These risks include:

1. *Default Risk:* Also called 'credit risk', it emanates from the default of underlying party to the instruments. The prime sufferers of these types of risks are equity or junior tranche.
2. *Interest Rate Risk:* Also called Basis risk and mainly arises due to different basis of interest rates. For example, asset may be based on floating interest rate but the liability may be based on fixed interest rates.
3. *Liquidity Risk:* Another major type of risk by which CDOs are affected is liquidity risks as there may be mismatch in coupon receipts and payments.
4. *Prepayment Risk:* This risk results from unscheduled or unexpected repayment of principal amount underlying the security. Generally, this risk arises in case assets are subject to fixed rate of interest and the debtors have a call option.
5. *Reinvestment Risk:* This risk is generic in nature as the CDO manager may not find adequate opportunity to reinvest the proceeds when allowed for substitutions.
6. *Foreign Exchange Risk:* Sometimes CDOs are comprised of debts and loans from countries other than the country of issue. In such a case, in addition to above mentioned risks, CDOs are also subject to the foreign exchange rate risk.

Solution to Question 2:

A Credit default swap (CDS) can be structured as follows:

1. ABC Bank Limited buys Credit Default Swap (CDS) from MNC Bank for the 10 year, unsecured 8% corporate bond of DEF Limited amounting Rs 10 crores.
2. Here, ABC Bank Limited is the buyer of CDS as it needs protection against default by DEF Limited on its corporate bond. DEF Limited is the reference entity, the entity owing the bond obligation and MNC Bank is the writer or seller of the CDS.
3. ABC Bank Ltd will pay periodic premium to MNC Bank.
4. In case DEF Limited defaults on bond, ABC Bank Limited will receive one time payment and CDS contract is terminated

Solution to Question 3:

With respect to 10 year 8% corporate bond of DEF Limited, the three categories of credit risk can be explained as under:

1. Default Risk

Default risk is the risk that borrowers default, meaning that they fail to comply with their obligations to service debt. Default triggers a total or partial loss of any amount lent to the counter party. Default Risk can be measured by probability of default. It depends on credit worthiness of a borrower which in turn depends upon various factors such as management of organization, size of business, strength and reputation of promoters etc.

In case of 10 year 8% corporate bond of DEF Limited, the rating downgrade indicates greater probability of default by DEF in making the promised payments of interest or principal and hence subject to default risk.

2. Exposure Risk

Exposure risk arises from the fact that future exposures (the size of amount due) are subject to uncertainty. Since only future exposures will trigger losses in the event of default, and since future exposures are uncertain, there is exposure risk.

Bonds usually have a fixed maturity date and fixed interest payment schedules but they are subject to exposure risk since a bond issuer facing financial distress may seek to renegotiate or modify terms of the bond, as part of debt restructuring.

3. Recovery risk

Economically, the amount of recoveries is not known in advance. It depends on the quality of collateral or guarantees backing the instrument and economic conditions of borrowers. Recovery risk refers to such uncertainty that arises at the time of default.

Debt ranks ahead of all types of equity with respect to priority of payment within the debt component of the capital structure, there can be varying levels of seniority. Which bond will have priority of claim in the event of default depends upon the classification of bonds. Higher priority of claim implies higher recovery rate in the event of default.

With respect to priority of claims, secured bonds ranks ahead of unsecured bonds, and within unsecured bonds, senior bonds ranks ahead of subordinated bonds. In the typical case, all of an issuer's bonds have the same probability of default due to cross-default provisions in most indentures.

Since the DEF corporate bond is unsecured, it faces high recovery risk in the event of default.

Solution to Question 4:

(i) d

CAMEL stands for **C**apital, **A**ssets, **M**anagement, **E**arnings, **L**iquidity. Statement a is incorrect because ABC Bank scores highest in terms of Capital adequacy and not credit worthiness

Statement b is incorrect because JKL Bank scores lowest in Earnings and not employment Level

Statement c is incorrect because NGO Bank scores par with ABC in Liquidity and not Leverage.

(ii) b

Statement a is incorrect because fully funded synthetic CDO comprises of CLN only

Statement c is incorrect because partially funded synthetic CDO comprises of CLN and CDS.

(iii) c

The calculation is as under:

Loan outstanding	90,00,000
Amount of exposure (loan to be written off)	90,00,000
Current Home Value	84,00,000
Recovery amount (home to be sold)	84,00,000
Recovery rate (Amount recovered/Loan outstanding*100)	0.9333
Default Probability	0.50
Expected Loss (Default risk*Amount of Exposure*(1-Recovery Rate)	3,00,000

(iv) d

Statement a is incorrect. The cost of CDS that is the premium paid by the buyer has a positive relationship with risk attached with bonds. In case of DEF corporate bond, since the rating has been downgraded and the bond is unsecured, the credit risk is higher and hence, the premium for CDS providing protection against default on such bond will be higher.

Statement b is incorrect. If an investor buys a CDS without being exposed to credit risk of the underlying bond issuer, it is called "naked CDS". In this case, ABC is exposed to credit risk of DEF and hence the CDS purchased will not be a naked CDS.

Statement c is incorrect because by entering into CDS, credit risk is not eliminated but it transfers from bond holder (CDS buyer) to CDS Seller. Statement d is correct. MNC will receive periodic premium payments as long as DEF does not default during the period of swap contract. If it defaults, MNC will pay ABC the stipulated amount and contract will be terminated.

(v) b

Statement a is incorrect as failure by Nigerian Government to make timely payments on the bond issued or actually default on its bond obligations is not liquidity risk but sovereign risk.

Statement c is incorrect because repricing risk is not a country risk but a market risk.

Statement d is incorrect because the risk mentioned is political risk and not transfer risk.

ANSWERS TO CASE STUDY: 3

Solution to Question 1:

Sudeep is not correct. Non-transfer of scan system at the end of lease period does not render the lease in itself as operating lease. In fact, based on the information provided, lease from GE appears to fall under category of **finance lease**. The reasons are as follows:

1. Lease is irrevocable.
2. Lease term covers the full economic life of the system i.e. 12 years
3. Lessee has to bear the insurance and maintenance costs associated with the scan system, though the legal title is not transferred.

Solution to Question 2:

The following points are relevant:

1. Leasing will not lock up own capital is not an advantage which relates only to leasing; any form of finance, including the bank loan, would free up own capital. Leasing does not preserve or conserve a firm's capital any more than borrowing does.
2. It is true that lease rentals are tax deductible but the interest on borrowing is also tax deductible.
3. The rental car is not an appropriate example to use, as it is an example of an operating lease rather than a finance lease.

Solution to Question 3:

To determine the before tax break even lease rental, let us assume the break even lease rental to be BL.

At break even:

Cost of machine - Present Value of Scrap Value - Present Value of Tax shield on Depreciation - Present value of tax benefit on gain on disposal - Present Value of Lease rental + Present Value of Tax benefit on Lease Rental = 0

For computing PV except on lease rentals, rate for discounting should be cost of capital (7.8%). For lease rentals, appropriate rate is cost of debt (10%)

The individual components can be computed as follows:

Present Value of Scrap Value

	Amount in ₹
Scrap Value (A)	5,00,000
Present Value of Scrap Value (PVF (7.8%,12) *A PVF (7.8%,12) from table given in study is 0.4060	2,03,000

Present Value of tax benefit on depreciation

Year	Depreciation for the year @40%	Present Value factor @7.8%	PV
1	40,00,000	0.9276	37,10,400
2	24,00,000	0.8605	20,65,200
3	14,40,000	0.7983	11,49,552
4	8,64,000	0.7405	6,39,792
5	5,18,400	0.6869	3,56,089
6	3,11,040	0.6372	1,98,195
7	1,86,624	0.5911	1,10,313
8	1,11,974	0.5483	61,396
9	67,185	0.5087	34,177
10	40,311	0.4719	19,023
11	24,186	0.4377	10,586
		Total	83,54,723
	PV of Tax benefit	83,54,723*22%	18,38,039

Since the scan system forms a separate block, no depreciation is allowed for year of disposal as block cease to exist.

Present Value of tax benefit on gain or loss on disposal

	Amount in ₹
Written down value at beginning of year 12 (given)	36,280
Scrap value	5,00,000
Short term capital gain	-4,63,720

Tax Benefit(A)	-1,02,018
Present Value (PVF (7.8%,12) *A	-41,419
PVF (7.8%,12) from table given in study is 0.4060	

The capital gain/loss from depreciable assets is always treated as short term irrespective of the holding period.

Present Value of lease rental

Since the lease rentals are payable in advance, we need to consider the present value factors for year 0 to 11.

From the given table, PVIFA for year 0-11 is equal to PVIFA (10%,12)- PVF(10%,12)+PVF(10%,0) = (6.8137 - 0.3186 + 1) = 7.4951

So, PV of lease rental = BL*7.4951

Present Value of Tax shield of lease rental

Tax benefit = BL*0.22

Tax benefit on lease rental will accrue at the end of the year. We need to consider the present value factors for year 1 to 12.

From the given table, PVIFA for year 1-12 is equal to 7.6148

So, PV of tax shield on lease rental = BL*0.22*7.6148

Putting these altogether in the equation discussed before, we get:

$100,00,000 - 2,03,000 - 18,38,039 + 41,419 - BL*7.4951 + BL*0.22*7.6148 = 0$ or

$BL*5.8198 = 80,00,380$ or

BL = 13,74,683

Solution to Question 4:

(i) c

Loan if taken= Rs 100,00,000

Interest rate=11% p.a.

First instalment is payable at the end of the year.

Loan Repayment schedule can be prepared as follows

Year	Principal Outstanding (A)	Instalment (B)	Interest component @11% (C) = A*11%	Principal Component (D) = B-C
1	1,00,00,000	16,98,014	11,00,000	5,98,014
2	94,01,986	16,98,014	10,34,218	6,63,796
3	87,38,190	16,98,014	9,61,201	7,36,813
4	80,01,377	16,98,014	8,80,152	8,17,862
5	71,83,515	16,98,014	7,90,187	9,07,827
6	62,75,688	16,98,014	6,90,326	10,07,688

7	52,67,999	16,98,014	5,79,480	11,18,534
8	41,49,465	16,98,014	4,56,441	12,41,573
9	29,07,892	16,98,014	3,19,868	13,78,146
10	15,29,746	16,98,014	1,68,272	15,29,747
			69,80,145	1,00,00,000

(ii) b

Financial advantage is computed by comparing the cost of machine with the discounted value of lease payments (gross), the rate of discount being the gross cost of debt. In our case, gross cost of debt is 10%

Computation of present value of lease payments: Lease Payment = 12,10,000

PVIFA for year 0-11 as computed in Question 3 = 7.4951

PV = 12,10,000 * 7.4951 = 90,69,071

Financial Advantage (disadvantage) of leasing

Cost of machine	1,00,00,000
Present Value of lease payments	90,69,071
Financial advantage of leasing	9,30,929

Option a is incorrect as it considers PVIFA (10%,12) which would have been appropriate if payments were made at the end of the year.

Option c is incorrect as it correctly considers PVIFA for 0-11 years but at the rate of 7.8%. The correct discounting rate is 10% and not 7.8%.

Option d is incorrect as it considers PVIFA (7.8%,12) which is incorrect with respect to both rate and time period.

(iii) c

Finance leases does not safeguard against risk of obsolescence since they are usually long term arrangements and there are high chances that the lessee will be stuck with obsolete asset during the time of lease. This benefit is offered by operating leases.

(iv) a

Using interpolation formula, IRR comes out to:

$$7\% + \frac{-2,14,703}{-2,14,703 - 1,69,550} * (8\% - 7\%) = 7.55\%$$

(v) d

Incremental tax saving of leasing over borrowing in year 12 can be computed as follows:

Tax benefits associated with leasing	
Lease rental paid at the beginning of year 12	12,10,000

Tax benefit on above lease rental (A)	2,66,200
Tax benefits associated with borrowing and buying	
Depreciation for year 12	0
Tax Benefit on depreciation (B)	0
Short term capital gain on disposal (WDV12-Residual value)	4,63,720
Tax loss on STCG (C)	1,02,018
Total (D=B-C)	-1,02,018
Incremental tax saving on leasing (A-D)	3,68,218

ANSWERS TO CASE STUDY: 4

Solution to Question 1:

The soundness of statements by Amar and Aman relating to their preference for mutual fund schemes are discussed below:

Amar

"Mid-Cap funds are open ended schemes and invests 55% or more of total assets in stocks of companies ranked between 50 and 100 by full market capitalisation. On the other hand, ELSS schemes offer tax benefit with a lock-in period of 5 years."

Amar is **correct** to the extent that Mid-cap funds are open ended schemes.

However:

- Mid cap stocks have been defined as companies ranked **101st to 250th** in terms of full market capitalisation and not between 50 and 100 as what Amar say.
- Mid-Cap funds invests **65%** (not 55%) of total assets in mid-cap stocks.
- ELSS schemes offer tax benefit with a **lock-in period of 3 years** and not 5 years.

Aman

"To me, hybrid schemes are better. They invest equally in equity and debt instruments. A good example is Balanced Hybrid Fund. It allows arbitrage too. Amar, why don't you consider Equity Savings Scheme ? It is similar to ELSS Scheme"

Aman is **correct** when he says that an example of hybrid scheme is Balanced Hybrid Fund.

However:

- Hybrid schemes do invest in both debt and equity **but not necessarily equally** as mentioned by Aman. The percentage varies depending upon the type of hybrid scheme.
- Arbitrage is **not permitted** for Balanced Hybrid Fund.
- Equity Savings Scheme (ESS)(a hybrid scheme) is **not similar** to ELSS Scheme (an equity scheme). ESS invests in equity, arbitrage and debt as against ELSS which invests in equity only. The equity investment in ESS is minimum 65% while in ELSS, minimum investment is 80%. Also unlike ELSS, it does not offer tax benefit.

Solution to Question 2:

- a. **Aman is correct.** Unlike open ended schemes, closed ended schemes do not imply corpus size volatility for AMC.

Open ended schemes, are available for purchase from the AMC and redemption with the AMC on an on-going basis, round the year on all working days, till it is wound up. Fund size increases when investors purchase units from the AMC and fund size comes down when investors redeem units. This implies corpus size volatility.

On the other hand, Close ended funds are available for subscription only during the New Fund Offer (NFO) period and not beyond that. The initial subscription amount is collected from investors and the fund is 'closed' after the NFO closure date i.e. no further purchase is allowed. There is no redemption possible with the AMC. Hence from the AMC's perspective, the fund corpus size is stable.

- b. **Aman is correct** with respect to Infrastructure Investment Trusts. They are similar to ETF to the extent that they are pooled investment vehicles and are listed at the stock exchange.

Solution to Question 3:

Since Mr. Ramen is looking for government securities in money market that offer inflation linked returns, Armaan is likely to suggest **Capital indexed bonds** to Mr. Ramen. Their salient characteristics are as follows:

1. Capital Indexed bonds are issued at face value
2. Interest Rate is reckoned as % over Inflation benchmark may be WPI or CPI at the time of issuance.
3. The tenor of the security is fixed.
4. The security is redeemed at face value on its maturity date.

Solution to Question 4:

- (i) c

The Expense Ratio relates to the extent of assets used to run the Mutual Fund. It is inclusive of travel cost, management consultancy and advisory fees. It however excludes brokerage expenses for trading.

Accordingly expense ratio for ABC and XYZ can be computed as follows:

	ABC Fund	XYZ Fund
Total Expenses	3,47,41,512	3,53,28,306
Less: Brokerage expenses	40,97,740	38,75,497
Expenses for expense ratio (A)	3,06,43,772	3,14,52,809
Net assets as at 01/04/2019 (a)	80,42,10,196	81,50,90,257
Net assets as at 31/03/2020 (b)	1,01,64,96,712	1,01,74,36,911
Average Value of assets during the period (B)=(a+b)/2	91,03,53,454	91,62,63,584
Expense ratio (A/B)	3.3661	3.4327

ABC has outperformed XYZ as its expense ratio is lower. However, expense ratio of DEF is 3.32 which is lower than both ABC and XYZ. Hence DEF has outperformed both ABC and XYZ.

If ABC had assets equal to XYZ, expense ratio of ABC would have been 3.34 and it would have still outperformed XYZ. Hence **statement a is incorrect**

If XYZ had assets equal to ABC, expense ratio of XYZ would have 3.455 and it would have still underperformed ABC. Hence **statement b is incorrect**.

Statement d is incorrect as both a and b are incorrect.

(ii) d

Statement a is correct.

Sharpe ratio is computed using standard deviation which is a measure of total volatility. It is equal to :

$$\text{Sharpe Ratio} = \frac{\text{Annualised Return} - \text{Risk free return}}{\text{Annualised Standard Deviation}}$$

Sortino Ratio uses downside deviation which is a measure of negative volatility. It is equal to :

$$\text{Sortino Ratio} = \frac{\text{Annualised Return} - \text{Risk free return}}{\text{Downside Deviation}}$$

The numerator in both Sharpe and Sortino Ratio is same. Only denominator differs.

Since Sortino Ratio of XYZ (0.42) is less than Sharpe Ratio (0.58), numerator being equal, it implies that denominator is higher in case of Sortino Ratio which is nothing but negative volatility. Hence, Negative volatility of XYZ returns exceeds its total volatility.

Statement b is correct. If the annualised return of both ABC and XYZ is equal, the numerator becomes equal. Higher denominator leads to lower Sharpe Ratio for ABC. Higher denominator is nothing but higher standard deviation which is a measure of total return variability.

Statement c is correct. **Treynor Ratio** measures excess return generated per unit of systematic risk in the portfolio. It is similar to Sharpe ratio except that denominator is portfolio beta which is a measure of systematic risk.

$$\text{Treynor Ratio} = \frac{\text{Annualised Return} - \text{Risk free return}}{\text{Portfolio Beta}}$$

We need to use Jensen Alpha statistics to compute fund beta. Jensen Alpha is the difference between a fund's actual return and those that could have been made on a benchmark portfolio with the same risk- i.e. beta.

Therefore Jensen Alpha = Return of Portfolio - Expected Return where

Expected return = Risk Free Return + Portfolio Beta (Market Return – Risk Free Return)

Accordingly,

	ABC Fund	XYZ Fund
Risk free Rate (given) (A)	5.00	5.00
Market return (given) (B)	8.00	8.00
Excess Return (C) = (B-A)	3.00	3.00
Jensen Alpha (given) (D)	0.40	-0.04
Annualised Return (given) (E)	7.50	7.36
Expected Return (F)=(E-D)	7.10	7.40
Fund Beta (G)=(F - A)/C	0.70	0.80
Treynor Ratio (E-A)/G	3.57	2.95

Since the Treynor Ratio of ABC Fund is higher, ABC fund is more suitable for investment in terms of Treynor ratio.

Statement d is incorrect. Systematic risk is measured by portfolio beta. Beta of ABC fund (0.7) is lower than XYZ fund (0.8), hence systematic risk is lower in case of ABC fund as compared to XYZ.

(iii) c

Statement 3 is incorrect because Commercial Paper are unsecured, though issued by high rated corporate entities.

(iv) d

Statement a is incorrect. Though ETFs allow investors to have exposure to index similar to futures, they trade on cash market of NSE and one can buy ETF units on NSE Capital segment.

Statement b is incorrect. It is true that an individual can invest in INVITs provided the minimum investment amount requirements of SEBI are met. However, REITs invest in revenue generating real estate assets and not infrastructure assets."

Statement c is incorrect. REIT or INVIT do not invest in securities of companies. Rather, they invest in revenue generating real estate assets and or infrastructure assets directly or indirectly through a Special Purpose Vehicle (SPV).

Statement d is correct. It is true that both ETF and closed ended funds trade on exchange intraday.

(v) d

Statement a is incorrect. Money Market Mutual Funds are not closed ended debt schemes. Rather they are **open ended** schemes.

Statement b is incorrect. Its true that money market mutual fund provides principal preservation but they yield a **modest return**. They are very much safer but they are **not entirely risk free**.

Statement c is incorrect. Money market mutual funds offer the advantage of access to **money markets** and not capital markets.

ANSWERS TO CASE STUDY: 5

Solution to Question 1

On an investigation by the market regulator, it was found that the CEO and Managing Director of ABC Ltd., had traded the company's shares while being in possession of UPSI. The reason given was that the consolidated quarterly financial results of ABC Ltd. were communicated to the stock exchanges after the trading hours on November 11, 2016, and ABC shares fell on the immediate succeeding trading day on November 15, 2016. And, the MD traded on the company's shares before they become public i.e. shared to the stock exchanges and avoided loss on account of that.

In view of the above, the charges seems to be tenable. Since Mr. Gehrotra was the managing director and 'a connected person', prima facie, he violated the provisions of PIT (Prohibition of Insider Trading) Regulations. Therefore, it can be said that he engaged in insider trading, which helped him to avoid loss due to a fall in stock prices of the company after its consolidated quarterly report was published.

Solution to Question 2

Mr. Mayank Gehrotra (or, in fact in any insider) could take the following steps to avoid being implicated in a insider trading case:

- (i) An insider shall not communicate or allow anyone access to any unpublished price sensitive information related to a company except where such information is required for legal purpose or fulfilment of any legal obligation.

- (ii) No insider shall trade in securities that are listed or proposed to be listed on a stock exchange when in possession of unpublished price sensitive information
- (iii) An insider shall be entitled to formulate a trading plan and present it to the compliance officer for approval and public disclosure pursuant to which trades may be carried out on his behalf in accordance with such plan.
- (iv) The trading plan once approved shall be irrevocable and the insider shall mandatorily have to implement the plan, without being entitled to either deviate from it or to execute any trade in the securities outside the scope of the trading plan.

Solution to Question 3

Obligations imposed on the CEO and the MD under regulation 7(1) and 7(2) of the SEBI (Prohibition of Insider Trading) Regulations, 2015 are as follows:

- (i) **Initial Disclosure** - Every promoter, member of the promoter group, key managerial personnel and director of every company whose securities are listed on any recognised stock exchange shall disclose his holding of securities of the company as on the date of these regulations taking effect, to the company within thirty days of these regulations taking effect.

Every person on appointment as a key managerial personnel or a director of the company or upon becoming a promoter or member of the promoter group] shall disclose his holding of securities of the company as on the date of appointment or becoming a promoter, to the company within seven days of such appointment or becoming a promoter.

- (ii) **Continual Disclosures** - Every promoter member of the promoter group designated person and director of every company shall disclose to the company the number of such securities acquired or disposed of within two trading days of such transaction if the value of the securities traded, whether in one transaction or a series of transactions over any calendar quarter, aggregates to a traded value in excess of ten lakh rupees or such other value as may be specified.

Every company shall notify the particulars of such trading to the stock exchange on which the securities are listed within two trading days of receipt of the disclosure or from becoming aware of such information.

Solution to Question 4

5.4 (a)

5.5 (d)

5.6 (b)

5.7 (c)

5.8 (c)