FINANCIAL REPORTing AND ANALYSIS

- **Salient Features of FS :What they reflect?**
  - Useful in helping investors and creditors evaluate firms.
  - Give a snapshot of the firm's assets, liabilities, and equity at a point in time (the balance sheet) as well as a summary of the firm's operating performance over a specified time period (the income statement).
  - Show the firm's operating, investing, and financing cash flows over a specified period (the statement of cash flows) and the amounts of and changes in ownership (the statement of owners' equity).
- **Periodicity**

  Financial reporting is done in periods of time. Companies tend to use the year as the primary length of the period but also report for periods less than a year (e.g., quarterly) on an interim basis.

- Prepared at the end of a uniform period to allow comparisons across time.
- Prepared at the conclusion of each of these accounting periods, summarizing the activities that occurred during the period.

- **Publicity held Companies**
- To report financial statements that meet widely accepted accounting rules. These rules are created by accounting standard-setting bodies.

- IASB-IFRS
- FASB-US GAAP
- Key differences remain between IASB and FASB

Double Entry Accounting: debits and Credits

- Assets = Liabilities + owner's equity

Figure 1: Debits and Credits

Accounts	Debit	Credit
Assets	Increase	decrease
liabilities	decrease	Increase
owner’s Equity	decrease	Increase
Revenues, Gains	decrease	Increase
Expenses, losses	Increase	decrease

❑ **ACCRUAL ACCOUNTING**

- Revenues are recorded when earned, regardless of when cash is collected. likewise, expenses are recorded when incurred, regardless of when they are paid. the cash flow that results from a transaction may occur before, during, or after the transaction.

- An important characteristic of accrual-based financial statements is the matching principle. Matching principle requires revenues to be matched or recorded with the expenses related to generating those revenues.
- Some expenses cannot be specifically identified with particular revenues. These should simply be recorded in the period they are incurred. One example might be the utility bill for office space.

❑ THE BALANCE SHEET

- Shows the company's resources at a point in time, as well as claims to those resources. Claims can be categorized as liabilities (lenders' and creditors' claims) and equity (owners' claims). Also referred to as the statement of financial position.

Balance sheet format as per Schedule III….

- **Classified balance sheet.** “Classified” in this context means organized or sorted. Assets and liabilities are divided into current and long-term categories. Current assets and liabilities are those that will be converted to cash, used up, or satisfied (in the case of liabilities) within one year or within the operating cycle, whichever is longer. they are typically listed in decreasing order of liquidity. those that are most liquid, at the top, will be converted to cash or used up sooner than those below them.
- Classifying the balance sheet in such a way allows users of financial information to quickly determine the firm’s overall level of liquidity.

▪ The difference between current assets and current liabilities is called working capital (or sometimes net working capital). the amount of working capital available is of particular interest to short-term creditors, because it is a measure the firm’s ability to meet current obligations.

- Most businesses must have positive working capital to operate on a day-to-day basis. If working capital is consistently negative, the business must cover the shortfall with long-term debt or additional equity financing. However, positive working capital does not guarantee that short- term obligations will be met.
- Current assets consisting of obsolete inventory or uncollectible receivables would present a deceiving picture of the firm's short-term liquidity. the quality of the firm's current assets is important to short-term creditors.

➢ **Basic overview of some common types of accounts**:-

- Assets are resources that are owned or used by a business to produce a current or future benefit. the overall goal of most any business is to use assets to create more assets or revenues:-

• Cash. this account not only includes cash available for immediate use, but cash equivalents such as certificates of deposit (Cds) and short-term government debt.

- Marketable securities. Securities owned by the firm are classified as available for trading, available for sale, or held to maturity. their classification will determine whether they are shown on the balance sheet at current market value or historical cost.
- Accounts receivable. this account is created when credit sales are made to customers who agree to pay later.
- Inventory. Goods purchased or produced for resale. Inventory is carried on the balance sheet at the lower of cost or realizable value.
- Supplies. Supplies differ from inventory in that they are not for resale, but instead consumed by the business internally. Examples would include pens, pencils, paper, and toner for the copy machine.
- Prepaid expenses. Prepaid expenses are accruals that result when the firm pays in advance for items such as rent, insurance premiums, subscriptions, or fees. Prepaid expenses are an asset because they will bring a future benefit.

- Deferred tax assets. Deferred tax items result from timing differences between financial accounting and tax accounting. A deferred tax asset is created when these differences cause taxes due (on the company's tax form) to be greater than income tax expense (on the company's income statement).
- Long-term fixed assets. long-term fixed assets are commonly referred to as property, plant, & equipment, and are carried on the balance sheet at a net book value.
- Land is typically valued at its historical cost.
- Plant represents the buildings that house the firm's production or selling activities. Plant is typically valued at historical cost less accumulated depreciation. depreciation is an expense the firm recognizes in each period to reflect the fact that plant and equipment wear out over time.
- Equipment is the machinery or fixtures used to produce or sell inventory. Equipment is typically valued at historical cost less accumulated depreciation.

- Liabilities represent the current and future obligations (debts) of the firm. these obligations can be satisfied by payment in cash, but in some cases also by providing goods and services. Following are some common types of liabilities:-

- Accounts payable. Balances due to suppliers for goods and services purchased on trade credit.
- Notes payable. these debts differ from accounts payable in that they represent outright borrowing from lenders. notes payable can be classified as either short or long term, depending upon how soon they must be repaid.
- Unearned revenues. unearned revenues are an accrual account for advance payments made by customers. once the firm provides the goods or services, it will reduce this liability and recognize sales revenue.

- Long-term debt. these are obligations that will not be repaid within the current year. long-term debt is most often used to purchase long-term assets and requires repayment of principal plus interest.
- Deferred tax liabilities. A deferred tax liability is created when timing differences between financial accounting and tax accounting cause income tax expense (on the company’s income statement) to be greater than taxes due (on the company’s tax form). Shareholders’ equity is the owners’ investment and the total earnings retained from the beginning of the business.
- Contributed capital (paid-in-capital) is the amount of the stockholders’ investment in the firm’s equity securities.
- Common stock is the portion of stockholders’ investment valued at par or stated value.
- Other paid-in-capital is the excess of the shareholders’ investment over the stock’s par value.

- Retained earnings is the total net income less the amount distributed to the owners as dividends from the beginning of business. Retained earnings do not represent ready cash; rather, they represent earnings that the firm has reinvested in its business (for example, by buying plant and equipment).

❑ THE INCOME STATEMENT

- The income statement allows the user of financial information to see the results of a company's day-to-day operations for the entire year. A condensed version in the most common format is as follows:-

Format as per Schedule III of Companies Act, 2013

- Revenues primarily include sales of goods and services, but may also include items such as interest and dividend income or rental income. Gains are created when companies sell assets (buildings, equipment, investments, etc.) for more than their book value.

- Expenses represent use of resources. one of the greatest uses stems from the purchase or production of goods for resale. As the costs of producing inventory are incurred, they are recorded in the balance sheet as inventory for as long as the company owns the asset. once the asset is sold, however, its cost is removed from the balance sheet and sent to the income statement as an expense, cost of goods sold. Subtracting cost of goods sold from revenue results in gross profit. This provides information about the company’s primary source of profit—selling goods. Companies that sell services do not have an account called cost of goods sold; all costs incurred for selling services are expensed as incurred.
- Almost all assets are written off to expense at some point, some more quickly than others. For example, when supplies are used up they are written off to supplies expense. other assets may take years to use up. E.g. Depreciation

- Non-recurring items are income (or losses) from outside the company's normal business operations and caused by events or transactions that do not typically occur.
- Unusual or infrequent items are events that are either unusual in nature or infrequent in occurrence, but not both. Some examples of unusual or infrequent items are gains or losses from the sale of assets; impairments; and restructuring costs. unusual or infrequent items are included in income before taxes.
- A discontinued operation is a part of the business that management has decided to dispose of but has not yet done so, or a part that was disposed of in the current year after it had generated income or losses. Any income or loss from a discontinued operation is reported separately in the income statement, net of tax.

- Extraordinary items are events that are both unusual and infrequent. Examples of these include losses from an expropriation of assets or uninsured losses from natural disasters. under u.S. GAAP, extraordinary items are reported separately in the income statement, net of tax, similar to discontinued operations. IFRS, however, does not allow items to be treated as extraordinary.
- Accounting changes include changes in accounting principles, changes in accounting estimates, and prior-period adjustments.
- A change in accounting principle refers to a change from one accounting method to another (e.g., a change from straight-line depreciation to accelerated depreciation). A change in accounting principle requires retrospective application. Any prior- period financial statements the firm presents must be restated to reflect the change.

- By contrast, a change in accounting estimate does not require the restatement of prior financial statements. An example of an accounting estimate is the useful life of an asset. Management may change the estimated useful life of an asset if new information indicates the asset will last longer than (or not as long as) originally expected.
- A prior-period adjustment is a change from an incorrect accounting method to a correct one, or the correction of an error made in previous financial statements. Prior-period adjustments are made by restating results for all prior periods presented in the current financial statements. The company must disclose the nature of the adjustment and its effect on net income.

❑ THE STATEMENT of CHANGES IN EQUITY

- In the balance sheet owners' equity is composed of two parts: contributed capital and retained earnings. the statement of changes in equity shows how these two components changed throughout the year.
- Contributed capital will show changes if the firm issued or repurchased stock. Retained earnings represent all net income to date that the firm has not paid to shareholders as dividends.
- One exception involves inventory accounting. under u.S. GAAP, a firm that changes to "last-in-first-out" from another inventory cost method does not apply the change retrospectively, but instead uses the carrying value of inventory as the first inventory layer.

The basic format of the statement of changes in equity is as follows.

As per Schedule III

❑ The Statement of Cash Flows

- the primary purpose of the statement of cash flows is to provide information about a company's cash receipts and cash payments during an accounting period.
- The statement of cash flows provides information on cash flows from operations, investing activities, and financing activities. Information on noncash activities must also be reported along with the statement.
- Cash flow from operations represents changes in the working capital accounts (e.g., accounts receivable, inventory, and accounts payable) and all items that flow through the income statement (e.g., cash receipts from customers, payments for good sold, wages).
- Cash flow from investing represents the purchase or sale of productive assets (physical assets and investments) for cash. Investing cash flow essentially deals with the items appearing on the lower left-hand portion of the balance sheet (fixed assets).

- Cash flow from financing represents acquiring and dispensing ownership funds and borrowings. Financing cash flow deals with the lower right-hand portion of the balance sheet (long-term debt and equity).
- Noncash investing and financing activities do not flow through the statement of cash flows because they do not require the use of cash. Examples are the following:

a) Retiring debt securities by issuing equity securities to the lender.
b) Converting preferred stock to common stock.
c) Acquiring assets through a capital lease.
d) Obtaining long-term assets by issuing notes payable to the seller.
e) Exchanging one noncash asset for another noncash asset.
f) The purchase of noncash assets by issuing equity or debt securities.

- While these activities do not flow through the statement of cash flows, they should be disclosed in either the footnotes or on a separate schedule as investing or financing events that did not affect cash.

Cash Flow Format of Indirect method as per Schedule III.

❑ Marketable Securities

- Marketable securities are initially recorded at cost (cash price plus any acquisition costs, such as brokerage fees). Let us , assume a company owns a bond with historical cost of Rs.10,000 and current market value of Rs.12,000.

I. If management intends to hold a bond to maturity, then they are reported at their original cost. these are called investments in securities held to maturity. Here, the security's book value is Rs. 10,000.

II. If management classifies the bond as a trading investment (trading investments are always considered to be current assets), then the investment is reported on

III. The balance sheet at its fair market value. Any unrealized holding gains or losses due to the appreciation or depreciation of the investment must be listed as a gain or loss on the income statement. Here, the unrealized holding gain is Rs. 2,000 (Rs.12,000 – Rs.10,000).

IV. If management classifies the bond as an available-for-sale investment, then the investment is reported on the balance sheet at its fair market value. Any unrealized holding gains or losses due to the appreciation or depreciation of the investment must be listed as an adjustment to stockholders' equity, not as a gain or loss on the income statement.

V. Interest or dividends received from these investments are recorded as interest or dividends earned (income).

Accounts Receivable

- Accounts receivable increase when a firm sells goods to customers on credit and decrease when the customers later pay the cash they owe.
- Uncollectible accounts are accounts that customers cannot or will not pay. there are two approaches to accounting for uncollectible accounts: the direct write-off method and the allowance method.

i. In the case of the direct write-off method of accounting for bad debts, bad debt expense is recorded as the accounts are written off as uncollectible.

ii. The allowance method for bad debts requires an estimate of the bad debts, generally made on the basis of the typical relation between either bad debt expense and credit sales or between accounts receivable and the allowance for doubtful accounts.

iii. The allowance for doubtful accounts method is more consistent with the matching principle and is preferred.

- Estimating uncollectible accounts can be done using the percentage of net sales method (i.e., estimate percent of sales that will be uncollectible) or through the aging of accounts receivable (i.e., classifying accounts based on period outstanding and using a different percent from each aged category).
- If a customer pays on an account that has been written off as uncollectible, the write-off is reversed, and the allowance account is credited for the amount (and cash is debited).
- The direct write-off method is used for income tax calculations and by firms with immaterial bad debts. Here the firm does not use an allowance account (accounts receivable on the balance sheet is the amount owed by customers). It recognizes bad debt expense only when a particular account is written off as uncollectible.

Inventory

- The objective of inventory accounting is to determine the value of inventory that best achieves the matching of costs with revenues for the accounting period. the value of inventory determines the cost of goods sold, or CoGS, on the income statement and the carryover of inventory to the next period on the balance sheet.
- Management's choices in accounting for inventories include inventory processing systems and inventory costing methods.
- **Inventory processing systems**:
  - Periodic. Inventory is accounted for at the end of certain periods (e.g., quarterly). only ending inventory is counted and priced, and CoGS is determined by subtracting the cost of ending inventory from the cost of goods available for sale.
  - Perpetual. A continuous record of the quantity and cost of merchandise is maintained as purchases and sales are made. CoGS is accumulated as costs are transferred from inventory to CoGS as sales are made.

- **Inventory costing methods**:
- Specific identification This. units are priced according to the specific cost of each item in ending inventory. This method is mostly used for high-value items that can be identified easily by unit, such as automobiles.
- Average cost. Inventory is priced according to the average cost of the goods available for sale during the period (goods available for sale/number of units).
- First-in, first-out (FIFo). the costs of the first items acquired by the firm are assigned to the first items sold. In other words, the oldest items are assumed to be sold first, and ending inventory reflects the cost of the items acquired most recently.
- Last-in, first-out (lIFo). the costs of the last items acquired by the firm are assigned to the first items sold. In other words, the most recent items are assumed to be sold first, and ending inventory reflects the cost of the oldest items. the lIFo method is permitted under u.S. GAAP but is not permitted under IFRS.

- Regardless of the cost method chosen, a company may not carry inventory on its balance sheet at a higher value than the inventory can be sold for. If the net realizable value (IFRS) or market value (u.S. GAAP) of inventory is less than its value on the balance sheet, the company must take a write down. A write down means the company must reduce the balance sheet value of inventory to its realizable or market value and recognize a loss on the income statement equal to the amount of the write down. If the realizable value of the inventory later recovers, IFRS allows the firm to write its balance sheet value up again, but u.S. GAAP does not.

- **During periods of increasing inventory and rising prices**:

a) The FIFo method will result in the lowest CoGS—first in, which goes to cost of goods sold, is the less expensive—and the highest net income. the higher the net income, the greater the inventories on the balance sheet [under FIFo, the last in (most expensive) goes to inventory]. Higher net income also means the firm will pay higher taxes, which in turn results in lower cash flows.

b) lIFo will result in the highest cost of goods sold (last in is the most expensive) and lowest income. the lower the net income, the smaller the inventories on the balance sheet [under lIFo, the first in (least costly) goes to inventory]. lower net income also means the firm will pay less in taxes, which in turn results in higher cash flows.
c) The average cost method, being an average, is between the FIFo and lIFo valuations.
d) Specific identification cannot be generalized because it depends on the specific units sold.

- Comparison of the effects of lIFo and FIFo in periods of rising prices and stable or increasing inventory quantities.

Comparisons of the Effects of LIFO and FIFO

LIFO results in . . .	FIFO results in . .
higher CoGS	lower CoGS
lower taxes	higher taxes
lower net income	higher net income
lower inventory balances	higher inventory balances
lower working capital	higher working capital
higher cash flows	lower cash flows

- The opposite relationships hold for falling prices. If prices do not change, the income and inventory results are identical under all methods.

- Because management's various inventory accounting choices affect reported net income, they can have a significant impact on the company.

i. External evaluations of the company by investors and creditors may be affected due to the levels of reported net income. typically, higher net income is viewed more favorably than lower net income.

ii. Internal evaluations such as performance reviews that determine management compensation and bonuses may also be affected. In general, higher net income is viewed more favorably.

iii. A company's cash flow is influenced by inventory accounting choices through the amount of income taxes actually paid. Higher CoGS will result in lower net income, which in turn will result in lower taxes payable. Yet, cash inflows and the actual cash cost of inventory acquired during the period are unaffected by the choice of inventory accounting methods. Consequently, because the firm is paying less cash in taxes, it will have higher operating cash flow than an otherwise identical firm choosing a different inventory accounting method and paying more in taxes.

Long-Lived Assets

- A long-lived asset is an asset that is typically employed in the production process of the firm and has a useful life of greater than one year. long-lived assets are not made available for sale to the firm's customers (i.e., they do not represent inventory for sale).
- **long-lived assets are classified in three main categories**:

1. Tangible assets have a physical existence. Examples include land, buildings, and equipment. Allocating the cost of a tangible asset over its useful life is called depreciation.
2. Natural resources are purchased for the economic value that can be taken from the earth and used up over time. Examples include oil fields, timberland, and mines. Allocating the cost of a natural resource according to its use (e.g., cutting timber, pumping oil) is called depletion.

3. Intangible assets have no physical existence, but have a value that is based on rights or advantages that are conferred to the owner. Examples include copyrights, patents, trademarks, and franchises. the cost of most intangible assets is allocated to the periods over which it provides benefits through amortization.

- long-lived assets are generally reported at their carrying value or book value (i.e., historical cost less accumulated depreciation). However, if the asset has lost more of its revenue-generating ability than its accumulated depreciation reflects, it may have to be written down (referred to as impairment, in which case the amount of the write down is recorded as a loss).
- The decision to acquire long-lived assets is based on some type of present value analysis in which the present value of the asset's cash inflows is compared to the present value of the asset's cash outflows (e.g., initial outlay and operating costs).

- Accounting issues pertaining to long-lived assets are how to spread the cost over the useful life, and how to represent the value of the asset each period on the balance sheet.
- The cost of plant assets includes all expenditures (e.g., transportation and installation costs) that are necessary to acquire the assets and ready them for use. If the plant is constructed, capitalized costs (added to the purchase cost of the asset) include expenditures such as materials, labor, reasonable amounts of overhead, and interest cost during the construction period.
- Included in the cost of land are expenditures such as search cost, real estate commissions, title transfer fees, back property taxes paid, surveying, and landscaping costs.
- Depreciation is used to allocate the cost of an asset over a period of time. Depreciation expense is the amount of this allocation for a given period. land is not depreciated. land remains valued at its original cost.

- Plant and equipment, however, have limited lives due to wear-and-tear or obsolescence. Because of this, plant and equipment costs must be allocated to expense over the plant and equipment's estimated economic life. there are several different methods of depreciation.
- The straight-line method of depreciation allocates the depreciable cost of an asset evenly over the asset's estimated useful economic life.
- Useful life of an asset is an accounting estimate by management. let's assume that after three years of use (accumulated depreciation is Rs.3,000), management determines that the machine can only be used for two more years. to revise the depreciation schedule, the net book value of the machine (Rs.12,000 – Rs.3,000 = Rs.9,000) less the salvage value of Rs.2,000 will be depreciated over the remaining two years of useful life:

Straight-line depreciation = Net book value – salvage value useful life

= Rs.9,000 – 2,000 = Rs.3,500 per year 2

- The units-of-production method allocates the depreciable cost of the asset as a function of the asset's use rather than time. the following is an example of the units-of-production method of calculating depreciation:

- A truck costs Rs.920,000.
- It has an estimated life of 300,000 miles.
- Salvage value is Rs.20,000.
- Cost of the truck per mile driven is:

Depreciation = cost − salvage value = Rs.920,000 − 20,000 estimated 300,000 miles

= Rs.3.00 per mile

- If the truck is driven for 50,000 miles in year 1, the units-of-production depreciation expense is:

Depreciation = (miles driven)(depreciation per mile)

= (50,000 miles)(Rs.3.00 per mile)

= Rs.150,000

- Depletion of natural resources in a given period is determined using the units-of- production method.

Example: Depletion

Suppose a firm acquired mineral rights for Rs.1.5 million, and suppose it is estimated that the mineral deposits will produce 100,000 tons of ore. If 10,000 tons were extracted during the period, 1/10 of the cost is allocated to this period.

- Accelerated depreciation speeds up the recognition of depreciation expense in a systematic way so that more depreciation expense is recognized in the earlier years of the asset’s life and less in the later years. total depreciation expense over the life of the asset, however, will be the same as with straight-line depreciation. Accelerated depreciation is appropriate for assets that lose much of their economic value early in their lives, such as movie DVDs for rental.

- Assets that are worn out or no longer useful may be discarded or sold. When an asset is sold or discarded, its market value at the time of sale or disposal might be different from its book value. the book value of an asset is equal to its original historical cost minus accumulated depreciation.

- Discarded assets are simply disposed of, and the firm receives nothing in return. the market value for the asset is zero. If the asset has been depreciated to zero before being discarded, no gain or loss is recorded. However, if the asset has any remaining book value at the time of disposal, the book value amount is realized as a loss on the income statement. An asset that is disposed of is derecognized and removed from the balance sheet.
- When an asset is sold, the firm receives a cash payment in exchange for the asset. the asset's book value is compared to the sale price, and any difference is recognized as a gain or loss on the income statement.

- Intangible assets have no physical existence, but legal rights confer benefits to the asset's owner. Intangible assets are distinguished from other assets that are classified as current assets (e.g., receivables) because intangibles are investments that are used in operations.

- Examples of intangible assets include the following:

a. Trademarks or brand names.
b. Copyrights.
c. Patents.
d. licenses or franchises.
e. leaseholds or leasehold improvements.
f. Technology.
g. Non-compete covenants.

- Typically, intangible assets are only recorded on the balance sheet when they are purchased from another firm. Most costs for developing intangible assets internally are expensed as incurred.
- When a company acquires an intangible asset (e.g., buys a patent), an asset is created by debiting the asset account for the acquisition cost. the cost of intangible assets is allocated over the estimated life of the asset. this allocation process is referred to as amortization. Amortization of intangibles uses the straight-line method.

- Goodwill is an intangible asset created when a firm purchasing another business pays more than the fair market value of the business' assets if they were purchased individually. If the excess purchase price cannot be attributed to patents, brands, copyrights, or other intangible assets, it is recorded as goodwill. Goodwill reflects the factors that enable a company to earn an above-average rate of return, such as strong management, manufacturing efficiency, and customer approval.
- Goodwill is assumed to have an indefinite life. Goodwill is not amortized, but is subject to an annual impairment review. Each year, a company must calculate the fair market value of its goodwill. If the fair market value is less than the carrying value on the balance sheet, the goodwill is said to be impaired. If impairment occurs, the carrying value of the goodwill account is reduced to its fair market value, and an impairment loss is recorded on the income statement.

❑ LIABILITIES

- Liabilities are probable future payments of assets (usually cash) or services (in the case of prepaid revenue) that a firm is obligated to make as a result of previous operations. Current liabilities are obligations that the company expects to pay within one year or one operating cycle. Long-term liabilities are obligations that will be paid after the current year or operating cycle.

❑ Warranties

- When a company sells products covered under warranty, future warranty expense associated with those sales must be estimated to achieve a matching of expenses with the revenue they generate. the amount of the future possible liability is estimated, most often, from past experience. this amount must consider the extent of the warranty—what it covers and the length of time covered. the estimated warranty liability (a.k.a. estimated warranty payable) is created upon the sale of the asset (debit warranty expense, credit liability).

- Assume a toaster manufacturer sells 1,000 toasters, each with a Rs.10 warranty liability. the recognition and payment of warranties are noted in the following ways.

During period of sale:

Warranty Expenses.................Dr	10000	
To Estimated Warranty Payable............ Cr		10000

- When repairs are made under warranty (assume 100 toasters at Rs.10 each):

	debit	Credit
Estimated warranty payable	Rs.1,000	
Parts inventory		Rs.400
Cash		Rs.600

Long-Term Debt

- Long-term debt represents an obligation to repay a borrowed amount, plus interest, over a period greater than one year. All long-term liabilities, such as bonds, are recorded as the present value of future cash flows.
- A bond's issue price does not always equal its par value. When bonds are issued at a price greater than par, the bonds are said to be issued at a premium. When bonds are issued at a price less than par, the bonds are said to be issued at a discount.
- A premium or discount arises because the stated interest rate (a.k.a. coupon rate) on the bonds is above or below, respectively, the market rate of interest.
- The accounting entry for bonds issued at a premium requires crediting the unamortized bond premium account. Suppose the Rs.1 million par value bond is issued at a premium of Rs.100,000. the entry is:

	debit	*Credit*
Cash	Rs.1,100,000	
Unamortized bond		Rs.100,000
Premium Bonds payable		Rs.1,000,000

- Total interest cost consists of the total amount of coupon interest paid to bondholders over the life of the bond and any premium or discount that exists when the bonds are issued. total interest cost can be calculated by subtracting the amount received by the firm when the bonds are issued from the total amount paid out to bondholders over the bond’s life.
- The total interest cost for a par bond is simply the amount of interest paid over the life of the bond. Suppose a company issues Rs.1,000,000 worth of bonds with a coupon rate of 6% and a maturity of five years. the total interest cost is calculated as:

Total amount paid to bondholders = par value + interest payments

= Rs.1,000,000 + (Rs.1,000,000 × 0.06 × 5)

= Rs.1,000,000 + 300,000 = Rs.1,300,000

Total amount received at issuance = par value = Rs.1,000,000

Total interest cost = total amount paid – total amount received

= Rs.1,300,000 – Rs.1,000,000 = Rs.300,000

- The total interest cost for a bond issued at a discount is equal to the amount of interest paid over the life of the bond plus the amount of the discount. this is because the discount effectively raises the (lower-than-market) interest rate the firm is paying on the bond. Suppose a company issues Rs.1,000,000 of bonds with a coupon rate of 6% and a maturity of five years, while the market rate of interest is 7%. Based on the 7% market rate, the bonds would sell for Rs.958,417.

Total amount paid to bondholders = par value + interest payments

= Rs.1,000,000 + (Rs.1,000,000 × 0.06 × 5)

= Rs.1,000,000 + 300,000 = Rs.1,300,000

Total amount received at issuance = par value – discount

= Rs.1,000,000 – 41,583 = Rs.958,417

Total interest cost = total amount paid – total amount received

= Rs.1,300,000 – Rs.958,417 = Rs.341,583

- the total interest cost for a bond issued at a premium is equal to the amount of interest paid over the life of the bond minus the amount of the premium. this is because the premium effectively lowers the (higher-than-market) interest rate the firm is paying on the bond. Suppose a company issues Rs.1,000,000 of bonds with a coupon rate of 6% and a maturity of five years, while the market rate of interest is 5%. Based on the 5% rate, the bonds would sell for Rs.1,043,760.

Total amount paid to bondholders = par value + interest payments

= Rs.1,000,000 + (Rs.1,000,000 × 0.06 × 5)

= Rs.1,000,000 + 300,000 = Rs.1,300,000

Total amount received at issuance = par value + premium

= Rs.1,000,000 + 43,760 = Rs.1,043,760

Total interest cost = total amount paid – total amount received

= Rs.1,300,000 – Rs.1,043,760 = Rs.256,240

- For bonds issued at a price above (i.e., at a premium) or below (i.e., at a discount) face value, the difference between the par value and the issue value must be amortized over the life of the bond as adjustment of interest expense in the income statement.
- As a result of amortization, the carrying value of a bond issued at a premium or discount on a company's balance sheet will be equal to par on the bond's maturity date.

- A premium or discount can be amortized either using the straight-line method (equal amount each period) or the effective interest method (the difference between the interest paid and the effective interest; effective interest is the market interest rate that existed at the time the bonds were issued multiplied by the carrying value of the bond).
- Non-interest bearing debt (i.e., zero-coupon bonds) should be initially recorded at discounted present value, using a discount rate equal to the company's normal borrowing rate. the issuer will recognize the interest expense for each period using the effective interest method, applying the discount rate to the book value of debt at the beginning of the period.
- When a bond reaches its maturity date, the final interest payment is made and the principal is paid in full. A key point is that at maturity, the market value of the bond will equal its book value.

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- When a bond reaches its maturity date, the final interest payment is made and the principal is paid in full. A key point is that at maturity, the market value of the bond will equal its book value.

- If a bond is retired prior to maturity, any difference between the market and book value of the bond is treated as a non-recurring item, and is shown on the income statement.

Leases

- A lease is an agreement that allows the lessee to use, for a limited time, a long-lived asset owned by the lessor. A lease must be classified as either an operating lease or a capital (finance) lease. A capital lease is a long-term liability. operating leases are often used in an attempt to keep the liability off the balance sheet.
- under IFRS, a lease is classified as a finance lease if the rights and risks of ownership are substantially transferred to the lessee. under u.S. GAAP, if a lease meets any of the following criteria, the lessee must classify it as a capital lease:

a. lease transfers ownership to property by end of lease.
b. lease contains bargain purchase option.

c) lease term is 75% or more of estimated economic life of the property.
d) Present value of minimum lease payments at beginning of lease equals or exceeds 90% of the fair market value of property.

- operating leases are accounted for as rental agreements. no liability appears on the lessee's balance sheet.

a) Rental payments are recognized as an expense by the lessee and as income by the lessor.
b) Disclosures of cash payments due under operating leases for each of the next five years and in aggregate are required in the notes to financial statements.

- In the case of a capital lease, the lessee treats the lease as if it were a purchase of property.

a) An asset and a related long-term liability are recorded at the present value of future minimum lease payments.

b) The value of the asset is allocated to expense in the income statement, on a straight-line basis, over the term of the lease.

c) Each lease payment is treated as part interest expense and part payment of principal.

❑ **Pensions**

- A pension plan is an agreement under which an employer agrees to pay monetary benefits to employees once their period of active service ends. the benefits normally depend on certain requirements, such as age and number of years of service.
- A pension fund is an intermediary used by the employer to meet plan obligations. the employer makes payments to the fund. the fund makes investments and makes pension payments to employees. Most pension plans in the u.S. are funded because of Employee Retirement Income Security Act (ERISA) requirements and tax advantages.

- A defined contribution plan is a pension plan that requires the employer to make only a specified contribution into the employee's retirement account. the contributions may be fixed or variable (profit-sharing). there is no promise of any specific level of future benefits, and employees bear all the risk of investment performance.
- Accounting for defined contribution plans is very straightforward. Pension cost equals the contributions made, and the employer will report an asset or liability reflecting the difference between actual payments made and the required payments.
- With a defined benefit plan, the employer promises a specified monetary benefit upon retirement. the promised benefits may be fixed or pay-related. By promising a defined future benefit, the employer bears all the risk of investment performance.
- determining the pension expense for defined benefit plans is more complicated than for defined contribution plans. Accounting for defined benefit plans is an important topic at level II in the CFA program.

❑ OWNERS' EQUITY

- Contributed equity capital consists of the par value (if applicable) of common stock, the par value of preferred stock, and paid-in capital in excess of par value.
- the par value of common stock is an amount that is arbitrarily set by management. the product of the par value per share and the number of shares issued represents the legal capital of the corporation. Par value is unrelated to the market value of a share of stock.
- Paid-in-capital in excess of par is the difference between what the corporation initially sold the shares for and the par value (if applicable).
- If the stock does not have a par value, the amount the stock is initially sold for is recorded simply as common stock.

- Preferred stock (or preference shares) is equity ownership that has seniority (i.e., preference) over common stock with respect to claims on income and assets.

I. Preferred stock dividends are usually a fixed amount, stated as either a fixed amount per share or a fixed percentage of the stock's par value.
II. In the case of cumulative preferred stock, any dividends not paid when scheduled must be paid before any other preferred or common dividends can be paid.
III. Dividends not paid when due are referred to as dividends in arrears.
IV. In the case of noncumulative preferred stock, the corporation is not obligated to pay any dividends not paid when scheduled.
V. Convertible preferred stock may be exchanged into common stock at a stated rate. this is an option the investors have if they own the stock.
VI. Callable preferred stock may be bought back by the corporation at a specified price per share. this is an option that the corporation has if it issues callable preferred stock.

- Important points to remember about the balance sheet include the following:

a) It is a snapshot of the business at one point in time.

b) It shows all assets (what you have), liabilities, and equity (who has claims to what you have).

c) Assets and liabilities are separated into short-term and long-term categories. Current assets are those that are expected to be consumed, sold, or converted to cash in less than one year. Current liabilities are expected to be paid within one year (e.g., accounts payable). long-term assets and long-term liabilities have lives greater than one year.

- Generally speaking, if non-cash assets went up, they consumed cash in the process. on the contrary, if non-cash assets went down, they created cash in the process. liabilities are just the opposite. liabilities are only recorded when the company has done one of two things: they either borrowed cash (source) or incurred an expense that they have not yet paid.

- The increase from borrowing is obvious, but what you might have forgotten is what happens when a company incurs an expense that has not been paid for. the expense will be deducted as soon as it is incurred, but to show income from a cash flow perspective only, we must remove the change.
- The statement of cash flows and the balance sheet must agree. the change in cash for the period as stated in the statement of cash flows plus the cash balance on the previous balance sheet must equal the cash balance on the current balance sheet.
- Investing cash flows refer to cash transactions involving long-term assets. the purchase of the new cash register was an investing cash outflow. Since the purchase required a cash outlay, the amount on the statement of cash flows is a negative number.
- Financing cash flows refer to transactions involving the capitalization of the business, regardless of whether the source of capital is debt or equity.

❑ SUMMARY

➢ PRINCIPLES AND PROCEDURES

A. Accounting standards help assure consistency and comparability of accounting procedures.

B. Financial statements in many countries are prepared in accordance with International Financial Reporting Standards (IFRS). Financial statements in the united States are created under Generally Accepted Accounting Principles (u.S. GAAP).

C. Financial statements are prepared at regular, predetermined times.

D. In the double entry accounting system, every debit has a corresponding credit.

1. debits increase asset, expense, loss, and dividend accounts. debits decrease liability, equity, revenue, and gain accounts.

2. Credits increase liability, equity, revenue, and gain accounts. Credits decrease asset, expense, loss, and dividend accounts.
3. The basic accounting equation is as follows: assets = liabilities + owners' equity. the equation, with its two equal sides, is the underlying reason for the use of double entry accounting, wherein two equal changes (at least) must take place in an entry in order for the equation to maintain balance. the equation is also the underlying format of the balance sheet.

E. Under accrual basis accounting, revenues are recorded when earned and expensed when incurred, regardless of the timing of their related cash flows. the matching principle requires that revenues and the expenses related to or incurred for the production of those revenues be recorded in the same accounting period. these two basic principles facilitate the most meaningful measure of profitability.

❑ FOUR PRIMARY FINANCIAL StATEMENTS

A. The balance sheet is also known as the statement of financial position. It includes asset, liability, and equity accounts, which represent both the resources owned by the firm as well as claims to those resources as of a specific point in time—usually December 31 or whichever date represents the company's year end.

1. Assets are those resources owned and/or used by the firm that bring a current or future benefit. Assets may be contributed to the business by the owner(s), borrowed, or generated by the business. they can be current (short-term) or fixed (long-term).

a. Current assets are those that will be used up, sold, or converted into cash within one year or the operating cycle, whichever is longer. they include cash, marketable securities, accounts receivable, inventory, supplies, and prepaid items.

b. long-lived assets are those with lives greater than one year and include property, plant, and equipment, long-term investments, natural resources, and intangibles.

2. liabilities are external claims on the firm's assets by lenders and creditors. they can be current (short-term) or long-term.

a. Current or short-term liabilities are payable within one year. these include wages payable, accounts payable, short-term notes payable, and the current portion of long-term debt.

b. long-term liabilities are those that extend beyond one year. these include long-term notes payable, mortgages payable, leases, and bonds payable.

3. Owners' equity represents the total value of the ownership claim(s) of the proprietor, partners, or stockholders. It represents what remains of assets (residual) after all debts are satisfied. Equity can be created in one of two ways.

a. Contributed capital represents claims to assets that were literally contributed by the owners of the company, whether by private capital contributions or public stock issues in exchange for assets.

b. Retained earnings represents the sum of all current and prior period earnings that have not been returned to the owners by way of dividend distributions. Retained earnings differs from current-year earnings (net income) in that it is a multi-period cumulative figure.

B. The income statement measures the results of operations for a period of time, usually one year. Profitability is determined by taking the difference between revenues and gains and expenses and losses.

1. Revenues represent an “inflow,” or creation of new assets, that is typically created through the day-to-day operations of the business.

2. Gains result from the disposal of long-term assets for an amount greater than their book or carrying value on the balance sheet (i.e., you received more than the adjusted cost basis).
3. Expenses result from the consumption of assets. When the amount of assets created during the period (revenues) is greater than the amount of assets consumed (expenses) the difference is a positive net income or operating profit figure.

a. Cost of goods sold is an expense associated with the sale of inventory. When the inventory is sold, its cost is removed from the balance sheet and written off on the income statement against the revenue created in the sale (the matching principle).
b. Depreciation, depletion, and amortization are the systematic allocation of the cost of long-term assets to expense over the period of time benefited by the assets. Rather than removing long-term assets from the books as they are expensed, the total of depreciation taken is recorded as a credit to an account called accumulated depreciation. Accumulated depreciation is a contra-asset account that is netted against long-term assets to create an indirect reduction in their book values.

c. The cost vs. expense issue arises when costs are incurred: do you record an asset or expense? If the cost results in an asset, the cost should be capitalized, or recorded as an asset. If the cost does not result in the creation of an asset, it should be expensed immediately.

4. "Below the line" items are reported separately from net income from operations, and include gains and losses not related to normal ongoing operations of the firm. Gains or losses on discontinued operations are reported here, as are extraordinary items and effects of any changes in accounting methods.

C. The statement of changes in equity provides a detailed look at the increases and decreases in equity during the year. Equity can be increased with additional capital contributions and positive earnings during the year, or it can be decreased by losses incurred during the year as well as dividends paid to the owners of the company.

D. The statement of cash flows identifies the sources and uses of cash from three different business functions:

1. Cash flows from operating activities are created through the day-to-day conduct of business. this section of the statement of cash flows can be created in one of two different ways.

a. The direct method of determining cash flows from operating activities is a top-down approach whereby items on the income statement are adjusted for changes in related working capital accounts (current assets and current liabilities) to turn accrual-based income and expenses into cash basis figures.

b. The indirect method is a bottom-up approach that begins with net income and adjusts it back to a cash basis figure.

2. Cash flows from investing activities are those sources and uses of cash created by the purchase and sale of long-term assets. All related dividends and interest received as a result and gains and losses created on disposal are included as adjustments in the operating activities section, since they are included in the determination of net income.

3. Cash flows from financing activities are those cash flows created by borrowing from and repayment to the lenders, creditors, and owners of the business. dividends paid to owners are also included as a use of cash in this section.

E. Analysts should look further than the prepared financial statements when evaluating a publicly traded company. More extensive information is available in footnotes to the financial statements, management’s discussion and analysis, and other public sources such as filings with the SEC.

❑ A Closer Look at the Balance Sheet

A. Marketable securities are classified as either securities held to maturity (reported at original cost), trading (reported at fair market value), or available for sale (reported at fair market value).
B. Accounts receivable must be adjusted for bad debts. there are two methods to make this adjustment: the direct write-off method (where bad debt expense is recorded as the accounts are written off) and the allowance for doubtful accounts method (where bad debts are estimated). the allowance method is preferred.
C. Inventory costing methods include specific identification, average cost, FIFo, and lIFo. lIFo is permitted under u.S. GAAP but not under IFRS. In normal periods of rising prices, FIFo will generate higher net income (lower CoGS) and higher ending inventory. lIFo will generate lower net income (higher CoGS) and lower ending inventory. the effects of inventory accounting choices can be evaluated using the basic inventory equation:

Ending inventory = beginning inventory + purchases – cost of goods sold

D. long-lived assets are capitalized, with their cost then expensed over their useful lives. this expense is called depreciation for tangible assets, depletion for natural resources, and amortization for intangible assets.

i. Straight-line depreciation allocates the cost evenly over the asset's life.

ii. Accelerated depreciation methods (e.g., double declining balance) allocate more of the cost to the earlier years of the asset's life.

E. Contingent liabilities must be disclosed in the balance sheet if the future payment is probable and reasonably estimable.

F. long-term liabilities (e.g., bonds) are recorded at the present value of future cash flows. Any premium or discount from face value at issuance must be amortized annually over the life of the debt.

G. Capital leases must be shown on the balance sheet. operating leases are not recorded on the balance sheet, and firms sometimes try to use operating leases to keep lease obligations off the balance sheet.
H. Preferred stock is stock with a claim on income and assets that is senior to common stock.
I. Treasury stock is stock that has been repurchased by the issuing corporation.

PRACTICE QUESTIONS: FINANCIAL REPORTing AND ANALYSIS

1. All of the following would be reported on the income statement "below the line" EXCEPT:

A. Discontinued operations.

B. Income tax expense.

C. Extraordinary items.

D. Cumulative effect of changes in accounting methods.

2. Which of the following would not affect cash flow from operations?

A. An increase in accounts payable.

B. Payment of interest expense.

C. Payment of income taxes.

D. Payment of dividends.

3. Prepaid expense items, such as prepaid rent, are usually considered:

A. Capital assets.

B. Current assets.

C. Current liabilities.

D. long-term liabilities.

4. Expenses that are related to specific revenues but not with a specific product should be:

A. Deferred and amortized over the lifetime of the specific product.

B. Expensed immediately.

C. Expensed in the period in which revenues are recognized.

D. Expensed as incurred.

5. An analyst is evaluating two firms in the same industry. Firm A uses the lIFo method of inventory accounting, while Firm B uses FIFo. In a period of rising prices, the analyst should expect that Firm A would report:

A. higher net income and higher inventory than Firm B.

B. higher net income and lower inventory than Firm B.

C. lower net income and higher inventory than Firm B.

D. lower net income and lower inventory than Firm B.

6. Depreciation

A. Is a cash expense

B. Reduces income tax liability

C. Increases gross operating profits

D. Is considered a long term liability

7. All of the following are examples of intangible assets EXCEPT:

A. Timberland.
B. Patents.
C. Goodwill arising from an acquisition.
D. licenses to use technology developed by another firm.

8. Regal Corp has leased a machine under a long-term agreement that includes a bargain purchase option. Under U.S. GAAP, this transaction should be treated as:

A. An operating lease, regardless of other features of the agreement
B. A capital lease, so long as the term of the agreement is at least 75% of the estimated economic life of the machine.
C. An operating lease, so long as the term of the agreement is at least 75% of the estimated economic life of the machine.
D. A capital lease, regardless of other features of the agreement.

9. Treasury stock is best defined as:

A. Outstanding stock repurchased by the issuer.

B. Stock with no par value.

C. Additional paid-in capital.

D. Stock payable to shareholders as part of a stock dividend.

10. Stockholder's equity would be increased by all of the following EXCEPT:

A. Issuing new stock at par value.

B. Increase in market price of common stock.

C. Positive net income.

D. Issuing new stock above par value.

PRACTICE QUESTION ANSWERS: FINANCIAL REPORTing AND ANALYSIS

1. B- "Below the line" items are reported after net income. Income taxes are deducted in determining net income.
2. D- Accounts payable is a working capital account, and changes to working capital accounts are included in cash from operations. Interest paid and taxes paid also are included in cash from operations. Dividends paid are considered in cash from financing.
3. B- Prepaid items are typically expenses that have been paid in advance. A good example is insurance, which may be paid for several months or a year a time, then expensed monthly. The prepaid amount, which has not been expensed, is carried on the balance sheet as a current asset.

4. C- Matching principle requires that revenues and expenses are matched with each other and matched within the appropriate accounting period.
5. D- In a rising price environment, LIFO would mean more expensive inventory was being included in cost of goods sold, so net income would be lower. The remaining inventory would be the less expensive inventory purchased earlier, so ending inventory would be lower also.
6. B- Although depreciation is a non-cash expense, it reduces taxable income and taxes. It also reduces gross operating profit.
7. A- Timberland is a tangible asset.
8. D- He agreement would be a capital lease so long as it included either a bargain purchase option or a term of 75% of the machine’s life. The agreement would also be considered a capital lease if the agreement transferred ownership or if the present value of the lease payments were greater than or equal to 90% of the fair market value of the property.

9. A- Treasury stock is stock that has been repurchased by the issuing firm.
10. B- Issuing new stock would increase equity, regardless of whether the stock was issued at or above par value. Positive net income adds to retained earnings, which would also increase equity. Changes in the market price of the stock are not reflected in the firm’s balance sheet.

Chapter 4 - CORPORATE FINANCE

- Corporate finance is the study of how corporations raise and use capital, how corporate financial managers evaluate possible capital investments, and how corporations are governed by their shareholders.
- legally separate from the owners. this separateness affords the corporate form three specific advantages over the proprietorship and partnership forms of business.

1. Unlimited Life. Since the corporation is a legal entity separate from its owners, its life is not tied to that of the owners.
2. Limited Liability. In a proprietorship or partnership, all profits, losses, debts, and other liabilities "flow through" to the owner(s). In the case of a corporation, the owners are only liable for the amount they have invested in the corporation

3. Ease of Ownership Transfer. ownership interest in publicly traded corporations is obtained by purchasing their common stock. Common stock is sold in shares, with each share indicating a percentage ownership in the firm. If you hold 10% of the common stock of a firm, you own 10% of that firm. ownership interest permits holders of common stock to vote at stockholder meetings, giving the owners of the firm a say in how the firm is managed. Stockholders usually have one vote per share of stock they own. Votes are cast on major questions faced by the corporation, such as the election of the Board of directors.

- large corporations typically have millions of shares of stock outstanding and have thousands of owners. Since some owners would have to travel hundreds or even thousands of miles to attend the stockholder meeting to cast their votes, corporations send them proxies

- A proxy is an absentee ballot. on the proxy, the stockholder indicates his choice for members of the Board of directors and yes or no on other questions included in the proxy. If a stockholder fails to return the proxy by the indicated date, management typically has the right to cast that stockholder’s votes.
- The charge of the Board of directors is to elect, advise, and oversee the president of the corporation. directors are paid and are expected to meet regularly, usually quarterly. the only prerequisite to being a member of the Board is interest and valuable expertise.
- The profits of any firm belong to the owners of the firm. Rather than pay out all net income to the stockholders, the Board will ordinarily retain a portion for future investment. this means that net income is divided into two parts. the first is the portion paid to stockholders in the form of dividends, and the second is the portion reinvested by management for the stockholders. this portion is called retained earnings on the firm’s balance sheet.

- Since they are a part of net income, retained earnings represent profits generated by the firm that have not been paid to the stockholders. By retaining part of the firm's earnings, management is implicitly promising to use them to maintain or replace equipment or to invest it in profitable projects or expansion. As a general rule, firms with many investment opportunities tend to pay smaller dividends, while firms with fewer investment opportunities, such as public utilities, tend to pay larger dividends.
- The characteristics of the firm issuing stocks and bonds determine a large portion of the risk of its securities. We divide these characteristics into two categories: financial risk and business risk. Financial risk comes from the way management finances the firm's assets and growth. using common equity stabilizes the firm's cash flows, while using debt creates leverage which can lead to volatility in the firm's cash flows (i.e., using debt makes the firm riskier). there is also a certain amount of volatility in the firm's earnings due to business risks. Much of this risk is associated with the type of industry in which the firm operates, but management can make choices that will increase or decrease the firm's business risk.

- Stockholders are primarily concerned with the price of their stock. they want management to make decisions that will cause the price to increase. Bondholders, on the other hand, are far more interested in the firm's ability to make the required
- Periodic interest payments and repay the principal when due. the ability to make interest payments as part of the normal operations of the firm depends on management's ability to consistently generate sufficient operating income or earnings before interest and taxes (EBIT). the appropriate level of firm risk is one source of disagreement between stockholders and bondholders.
- Stockholders want management to undertake risky projects to maximize their expected returns, even though doing so also increases the firm's overall risk. A large portion of the increased risk is a result of unsystematic (company specific) factors which can be diversified away by stockholders who hold their stock as part of a large portfolio.

- Thus the stockholders can achieve higher expected returns without bearing all of the associated increase in risk.
- Bondholders, on the other hand, would prefer that management be cautious in running the firm. they prefer less risky projects that are expected to maintain a stable level of operating profit that is sufficient to cover the requisite interest payments on the bonds. In addition, a firm's creditors want to limit further issuance of debt to protect the stability of their investment. Issuance of more and more debt will likely result in increasing the interest rates the firm must pay to borrow. these higher interest rates increase interest payments and the overall risk of the firm.
- Stockholders will tolerate additional risk with its accompanying increased expected returns. Bondholders want stability with its lower, more consistent returns. If stockholders get their wish, they in effect transfer (i.e., take) value from the bondholders. the increased risk reduces the value of the debt claims on the firm while simultaneously increasing the value of the equity claims. If the bondholders get their way, their value is maintained, but the value of the equity claims is not maximized.

❑ RISK AND RETURn

- When a corporate manager makes a decision to purchase equipment, expand operations, or start a new product line, the manager must consider both the costs and the benefits of that decision. We study costs and benefits in the framework of risk and return. decisions made by the corporate financial manager will usually involve money, since money is both the cost and the benefit of most financial decisions. Risk is important because virtually no financial decision is immune from uncertainty.
- We use the word uncertainty as a synonym for risk. In finance, whenever there is uncertainty about an outcome, that outcome is considered risky. let's assume today is the day your best friend Chris promised to pay back the Rs.200 he borrowed from you last week. Are you certain Chris will pay you the Rs.200 today as promised?

- If Chris gives you the money today, you will have received the payment exactly as you expected. If you receive the money tomorrow or the next day, you will have received the amount expected but not at the original time expected
- let’s define risk as the possibility of an unfavorable event. Is receiving the Rs.200 late an unfavorable event? What if you needed the money today to pay your cable television bill? If you receive the money late, the result is interrupted cable service.
- Since most financial decisions result in receiving (or paying) a cash flow in the future, and since the future is always uncertain, there is obviously risk associated with any future cash flow. In fact, as the cash flow occurs further into the future, it will generally tend to become riskier.
- Given enough time, just about anything can happen. that means that the longer the time before you expect a cash flow, the higher the possibility that something will happen to affect the way it is received or even if it is received at all. Since no one can predict the future with certainty, we must accept that some amount of risk is inevitable.

What Causes Risk?

- Risk, as it applies to common stock, is defined the same way as it is for any other investment. It is the possibility of an unfavorable event. From the investor's perspective, a particularly unfavorable event is a decline in the price of the stock. We can define the unfavorable event for a common stock as a decline in price, but what causes stock prices to decrease?
- The forces that can affect stock prices can be separated into two general categories: macroeconomic and microeconomic. Macroeconomic variables (e.g., inflation, the national unemployment rate, government policies) are economy-wide in nature and affect all stock prices to varying degrees. For instance, inflation causes overall price increases, resulting in decreased demand and reduced profits. As the unemployment rate increases, economy-wide consumption declines, also resulting in reduced profits. Macroeconomic factors such as these can be the most troublesome for investors.

❑ Microeconomic (Firm-Specific) Variables

- Microeconomic variables are those that are specific to each firm. they are the characteristics of the firm, such as its management, employees, products, and financing choices. let's take a little time to discuss some of the most important microeconomic forces that affect stock prices.
- **Business Risk**. Recall from the chapter on Financial Reporting and Analysis that several factors can affect income from operations, also known as operating income or earnings before interest and taxes (EBIT). let's look at the top portion of Figure 1, the Income Statement for J&J dogs, our rapidly expanding company from the first section of this chapter.
- We will define business risk as the uncertainty in EBIT or the forces that cause this uncertainty.3 Whenever a factor has a distribution of possible values, we say the true value of that factor is uncertain. Remember, we are using uncertainty as a synonym for risk, so an uncertain factor is risky in a corporate finance context.

- We encounter risk when we are trying to predict a future value. Whenever the true value of a future cash flow is not known with certainty, we call it an unknown. We might have a pretty good idea about the range of values it could have, but we can’t predict it with certainty.
- We now turn to some of the better-known sources of business risk: revenue variability, cost and price structure, competition, and operating leverage.
- Variability in revenue. If the firm’s future revenues are highly variable (subject to extreme changes), future EBIT will be highly uncertain. Anything that causes sales variability is considered a source of business risk. this would include demand for the product or service (quantity sold) and the price at which it sells.
- If demand for the firm’s output is subject to seasonal swings or if the product has many substitutes, sales will be hard to predict. Also, if the product market is subject to severe price variability, as with the market for computer chips, there will be variability in sales revenues.

- Cost and input price structure. Some firms face uncertainty in the costs of their inputs. this variability in input costs will obviously cause variability in the firms' operating and net income. Also at issue is the firms' ability to pass along increased input prices to the consumer through an increased sales price. Firms with little price flexibility and uncertain input costs will be exposed to higher levels of risk.
- Competition and new product development. Some firms' revenues are very difficult to predict because competitors—domestic or international—may enter the market at any time with a competing or improved product. the degree to which competing products affect revenues will depend on how quickly and inexpensively the firm can develop another product.
- Operating leverage. operating leverage depends upon the proportion of the firm's costs that are fixed. In the short run, the higher the proportion of fixed costs, the less flexibility management has in lowering costs to accommodate weak sales. In the long run, all costs are variable and management can change the entire cost structure.

- Operating leverage is measured as the percentage change in EBIT that results from a given percentage change in revenues. With no fixed costs, the change in EBIT is the same as the change in revenues. For example, if revenues increase (decrease) by 10%, EBIT will also increase (decrease) by 10%. Fixed costs act as a lever and cause the percentage change in EBIT to be greater than the percentage change in revenues. A high proportion of fixed costs could cause the percentage change in EBIT to be three or four times the percentage change in revenue. In this case, a 10% increase (decrease) in revenues would lead to a 30% or 40% increase (decrease) in EBIT. later in this chapter we provide an example of breakeven calculations relating to operating leverage, as well as graphs further illustrating the leverage effect. the main point is that if EBIT has been leveraged through the existence of fixed costs, its distribution of possible values has been widened and the firm's business risk has been increased.

- Business risk depends on the industry as well as management's decisions. For example, the auto and steel industries can do little about their fixed cost structure since they have many large fixed assets, and labor costs are fixed for extended periods by unions. Alternatively, real estate development companies tend to own very few assets and use subcontracted labor, and therefore have low fixed costs and low operating leverage.
- Financial risk. Whereas business risk is mostly a result of the firm's assets and its revenue and cost structure, financial risk is the risk of the firm due to management's choices regarding the use of debt financing. the effects of debt financing are shown on the income statement below EBIT in the form of interest expense. Interest expense has the effect of levering (i.e., magnifying) the percentage change in net income up or down. this levering of net income effectively increases or widens the distribution of its possible values (increases risk).

- Financial leverage is the percentage change in net income resulting from a given percentage change in EBIT. With no interest charges, the change in net income is the same as the change in EBIT.4 For example, if EBIT increases (decreases) by 10%, net income also increases (decreases) by 10%. Interest is a fixed cost and acts as a lever to make the percentage change in net income greater than the percentage change in EBIT. Much like the use of high levels of fixed operating costs, heavy dependence on debt financing could cause the percentage change in net income to be many times the percentage change in EBIT. later, we provide an example of breakeven calculations relating to financial leverage, as well as graphs further illustrating the leverage effect. the key issue is that the resulting amplification in net income could be a boon for companies with high operating profit margins but could be a disaster for a struggling firm.

❑ Capital Structure

- Capital structure refers to the relative proportions of debt and equity the owners of a firm have used to finance its operations. We can observe a firm’s capital structure by examining its balance sheet. In Figure 2, we have reproduced the balance sheet.
- Capital structure gives information about the firm’s long-term or permanent sources of capital
- The typical large corporation has several different issues of long-term debt (bonds) outstanding as well as a great deal of common stock and retained earnings. It is the relative proportions of these sources of financing that represent the capital structure of the firm.
- Capital structure will affect the rate at which the firm can borrow as well as the rate of return required by its equity holders. Moreover, management’s choices for funding affect not only the firm’s cost of capital but the value of the firm as well.

- A firm’s target capital structure is the debt ratio that the firm tries to maintain over time and is typically similar to the average for the industry in which the firm operates. Should the firm’s debt ratio fall below the target level, new capital needs will be satisfied by issuing debt. on the other hand, if the debt ratio is greater than the target level, the firm will raise new capital by retaining earnings or issuing new equity.
- When setting its target capital structure, management must weigh the tradeoff between risk and return associated with the use of debt, since the use of debt increases the risk borne by both shareholders and bondholders. However, using debt also leads to higher expected rates of return for stockholders. the higher risk associated with debt may depress stock prices, while the higher expected return may increase stock prices. thus, the firm’s optimal capital structure is the one that balances the influence of risk and return and maximizes the firm’s stock price. the optimal debt ratio will be the firm’s target capital structure.

- Several factors influence management's ability and desire to issue debt and, hence, the firm's optimal capital structure:

i. Business risk is the risk inherent in the firm's basic operations due to the type of industry in which the firm operates. For example, a public utility could be viewed as fairly low risk. Compared to most industrial firms, a public utility firm's demand is fairly predictable. therefore it is uncommon for utilities to face financial difficulties. on the other hand, a deep sea exploration firm might be considered very risky. not only does the ship and crew continually face the perils of the open sea, the probability of finding anything of value is remote. Firms that face a high degree of business risk will typically maintain a larger proportion of equity in their capital structure.

- One of the reasons for using debt is the tax shield. Interest payments on debt issued by businesses are tax deductible in most countries, whereas dividends are typically not. thus, the tax shield provided by debt financing lowers the effective cost of using debt relative to the cost of using equity. other things equal, this would imply that firms should use as much debt as possible. However, when a firm has a low effective tax rate, additional debt is less advantageous.
- Financial flexibility refers to a firm's ability to go to the capital markets and raise funds at reasonable terms. If the firm already employs a good deal of debt, management might find it difficult to sell new debt.

❑ Cost of CAPITAL

- On the right (liability) side of a firm’s balance sheet, we have debt, preferred stock, and common equity, which are normally referred to as the capital components of the firm. Any increase in a firm’s total assets will have to be financed through an increase in at least one of these components. the costs of the components are called the component costs of capital.
- We will focus on the three major capital components and their associated component costs:

➢ K_d- The interest rate (the required return) at which the firm can issue new debt; also, the yield to maturity on existing debt. this is the before-tax component cost of debt.

➢ $k_d(1 – t)$- After-tax cost of debt. Here, t is the firm’s marginal tax rate. Remember, the interest payments made by a firm are tax deductible, which makes the after-tax cost of debt less than the before-tax cost.

- ➢ Kps- Cost of preferred stock. Since all dividends, common and preferred, are issued out of net income (after-tax), they are not tax-deductible.
- ➢ Kce- Cost of common equity. We can interpret this as the required rate of return on common stock. the cost of common equity is not directly observable and must be estimated.
- Cost of debt. Since the interest expense on debt is tax-deductible, we consider the after-tax cost of debt [kd(1 – t)]. It is the interest rate at which the firm can issue new debt (kd) net of the tax savings resulting from the tax-deductibility of interest payments (kdt).
- Cost of common equity. the cost of common equity (kce) is the return that a firm's stockholders require on the equity that the firm retains from its earnings. If a stock is in equilibrium, the rate of return investors require is equal to the rate of return they expect to get.

- The cost of common equity can be estimated using one of the following three approaches: the CAPM approach7, the bond yield plus risk premium approach, and the discounted cash flow approach.

1. **The capital asset pricing model (CAPM) approach.**

Step 1: Estimate the risk-free rate, RF. A short-term treasury bill (T-bill) rate or a long-term treasury bond rate can be used as an estimate of the risk-free rate.

Step 2: Estimate the stock's beta, β. this is the stock's systematic risk.

Step 3: Estimate the expected rate of return on the market (RM).

Step 4: Use the CAPM equation to estimate the required rate of return. $k_{ce} = RF + \beta(RM – RF)$

- Results obtained with the CAPM approach should be interpreted with caution because (1) you must choose an appropriate estimate of the risk-free rate, (2) beta is an estimate of the security's risk, and (3) the market risk premium (RM – RF) is difficult to estimate correctly.

2. **The bond yield plus risk premium approach.**

The method adds a risk premium (usually 3 to 5 percentage points) to the interest rate (required return) on the firm's long-term debt.

$$k_{ce} = \text{bond yield} + \text{risk premium}$$

3. **The discounted cash flow approach.**

If dividends are expected to grow at a constant rate, g, then the current price of the stock is given by the constant growth dividend valuation model:

$$P_0 = \frac{D_1}{K_{ce} - g}$$

Where:

D1 = Next year's dividend

kce = The investor's required rate of return

G = The firm's expected constant growth rate

Rearranging the terms, you can solve for kce,

$$kce = \frac{D1}{Po} + g$$

But in order to use $kce = \frac{D1}{P0} + g$, you have to first estimate the expected growth rate g. this can be done by the following:

- Using a growth rate projected by security analysts.
- Using the following equation:

g = (retention rate)(RoE) = (1 – dividend payout rate)(RoE)

Weighted Average Cost of Capital (WACC)

- Generally, it is necessary to raise each type of capital (i.e., debt, common stock, or preferred stock) in large sums. the large issues may temporarily overemphasize the most recently issued capital in the firm's capital structure, but in the long run management will try to move toward target weights for each capital type.
- Even though management typically issues only one type of capital at a time to fund operations and expansion, it is necessary to consider all the capital components when discussing the firm's cost of capital. Following is a simplified example of why this is necessary.
- Therefore, when we consider the cost of funds used to purchase the firm's assets, we must consider the average cost of the three capital components. We refer to the average cost of the funding sources as the firm's weighted average cost of capital (WACC).

- A firm's weighted average cost of capital is the weighted average of the individual component costs. the weight of each component is defined by the firm's capital structure:

  $$WACC = (wd)[kd(1 – t)] + (wps)(kps) + (wce)(kce)$$

  where:

  wd = the weight of debt in the capital structure

  wps = the weight of preferred stock in the capital structure

  wce = the weight of common equity in the capital structure

❑ CAPITAL BUDGETING

- To maintain or expand its operating capabilities, every firm must weigh the costs and benefits of investing in their business. Evaluating and selecting potential investments (projects) is known as capital budgeting. these decisions may relate to building a new facility, buying a new machine, or acquiring another firm. the basic question to address is whether the potential return on the project justifies the initial investment (i.e., its cost), and will increase the long-term value of the firm. to determine which projects are worthwhile, we must first assess the cash flows of the project.

- In general, an investment project will require an initial investment to undertake the project, and then provide positive cash flow benefits during its working life. the tradeoff between the cash costs and benefits of the project will determine its relative attractiveness.
- Initiating a project requires that a firm invest in certain assets necessary to complete the project. the firm may need to purchase a new piece of machinery, update a warehouse, hold a higher balance of accounts receivable and accounts payable, or utilize undeveloped real estate. the sum of these initial costs is called the net investment. the net investment may involve direct costs such as purchasing and installing an asset or opportunity costs such as using a previously idle asset instead of selling it in the market.

- No rational firm would undertake an investment project unless the project provided a positive cash flow benefit. this cash benefit can come in the form of incremental (i.e., additional) cash inflow to the firm or incremental cash savings that would go unrealized without the project. the incremental cash benefit must be considered, however, net of any expenses and investments required to operate the project. these expenses may include operating costs, taxes, and investments in net working capital or fixed assets to support the project. the cash flow benefit after subtracting out expenses and continued investment is referred to as the project's net cash flow.
- A project's cash flows must be evaluated on an incremental, after-tax basis. We are only interested in the cash flows that the project adds to the firm's total cash flow, not in the total cash flow itself. Also, taxes have a real cash implication and must be accounted for in the estimation of cash flows for the project.

❑ Net Present Value

- A project's net present value (NPV) is equal to the sum of the present values of the net cash flows minus the net investment required to initiate the project. to determine the present value of the project's future net cash flows, a discount rate must be used to discount the future net cash flows back to the present. If the risk of the project is equal to the overall risk of the company, then the marginal WACC (i.e., the cost to raise more debt and equity capital in their current proportions) can be used as the discount rate. If the project is more or less risky than the company as a whole, then an adjustment to the marginal WACC will be necessary.
- The net present value of each project is simply the sum of the present value of each project's cash flows, including the net investment. In the preceding table, the net investment is represented as a negative value at time zero. Remember the net investment is a cash outflow that reduces the NPV of the project.

- This reasoning applies to all firms undergoing the capital budgeting process. A firm should rank, from highest to lowest, all projects with a positive NPV and, starting with the highest NPV project, select as many projects as the firm's capital budget will allow. Projects with a negative NPV should be rejected since these projects would reduce the overall value of the firm.9 Projects with an NPV equal to zero can either be accepted or rejected but will not change the value of the firm.

Internal Rate of Return

- The internal rate of return (IRR) of any project is its expected return, given its cost and expected cash flows. that is, IRR is the discount rate that makes the present value of the expected cash inflows equal to the cost of the asset and makes the NPV zero. Mathematically, we can represent the IRR as the discount rate that makes the following true:

  Net investment = sum of the present values of cash inflows

- IRR can be determined using a financial calculator (recommended) or by trial and error. the trial and error method is performed by discounting the project's cash inflows at various discount rates until you find the one that satisfies the formula. If you use trial and error in our J&J dogs example, you would start with a rate greater than 10% because 10% generated a positive NPV for both Project A and Project. However, it is much simpler and faster to use a calculator to find the IRR of a project.
- Using a financial calculator, the IRR for Project A is 29.2% and the IRR for Project B is 29.7%.
- Similar to the NPV rule, the IRR decision process applies to all firms undergoing the capital budgeting process. A firm should accept projects with an IRR greater than the cost of capital and reject projects with an IRR less than the cost of capital. Projects with an IRR equal to the cost of capital can either be accepted or rejected but will not change the value of the firm.

- We cannot conclude, however, that the project with the highest IRR will add the most value to the firm. differences in the sizes of projects and the timing of their cash flows can cause one project to have a higher IRR but a lower NPV compared to another. For that reason, when choosing among mutually exclusive projects (that is, when a firm can accept only one project from two or more alternatives), a firm should rely on the NPV method.
- The IRR method is most useful for projects that have a conventional cash flow pattern, with an initial cash outflow followed by a series of cash inflows. Because the sign changes only once, the project has a single IRR. However, if the sign on a project's cash flows changes more than once (for example, if it has a disposal cost at the end of its life), the project can have multiple IRRs. Mathematically, each change in sign can produce another discount rate at which the NPV is zero. We don't have any good way to decide which of these IRRs is "correct."

❑ Payback Period

- The payback period (PBP) is the number of years it takes to recover the initial cost of an investment. In other words, PBP is the time required for a project's net cash flows to repay the net investment. the formula used to calculate the payback period is as follows:

$$PBP = \text{Years until full recovery} + \frac{\text{Unrecovered cost at the beginning of full recovery year}}{\text{Cash flow during full recovery year}}$$

- As noted earlier, the payback period does not consider the risk of the project or the time value of money associated with the cash flows. As such, it is an inferior to the NPV and IRR methods as a method of project evaluation.

❑ Breakeven Analysis

- Breakeven analysis is a tool used by firms to quantify the effects of operating leverage on their investment projects and on the firm as a whole. Recall that operating leverage is the trade-off between variable costs and fixed costs. operating leverage amplifies the earnings of the firm. High operating leverage will make years of good profitability look even better and years of poor profitability look even worse. these effects are created by the presence of fixed costs in the operating structure.
- Fixed costs cannot be changed in the short run. the costs must be paid no matter how many units of a particular product the firm chooses to produce. Variable costs, on the other hand, depend on the number of units the firm produces. If no production is undertaken, no variable costs are incurred. to make a profit, the firm must sell enough of its product to cover both variable and fixed costs. the level of sales at which a firm covers all of its fixed and variable costs is called the breakeven point. the breakeven sales quantity, QBE, can be defined as follows:

Sales revenue = operating costs

Or

(price per unit)(quantity) = (variable cost per unit × quantity) + fixed costs

Or

$PQ = VQ + F$

At breakeven, operating profit is equal to zero: $PQ – VQ – F = 0$. therefore $QBE = F / (P – V)$. We have simply solved for Q which leaves us with a ratio of fixed costs to what is known as the contribution margin $(P – V)$. the breakeven quantity of sales is the point at which operating profit (also known as EBIT) is equal to zero. Sales of a quantity greater than QBE will result in positive operating profit for the firm. Sales of a quantity less than QBE will result in operating losses for the firm.

- The bottom line is that the use of Financial leverage does not change the degree of business risk present, but it does affect the firm overall level of risk. Therefore, the appropriate degree of financial leverage will depend on the firm's inherent level of business risk and management objectives for total firm risk.

❑ Risk and Return

A. Firm-specific factors consist of business risk and financial risk.

1. Business risk is due to characteristics of the industry (i.e., the type of business in which the firm operates).

a. Firms in the industry might be subject to variable revenues.

b. The firm's cost and pricing structures might not be flexible.

c. New product development might be slow.

d. Use of fixed assets causes operating leverage; the greater the amount of fixed assets, the higher the operating leverage.

e. Operating leverage is measured as the percentage change in EBIT given a percentage change in revenues.

2. Financial risk is due to the utilization of fixed-obligation sources of financing, primarily bonds. Financial leverage results from the use of debt:

a. The more debt used and the greater the fixed obligation, the higher the financial leverage.

b. Financial leverage is measured as the percentage change in net income given a percentage change in EBIT.

B. Capital structure refers to the way management has paid for the firm's assets.

1. Any long-term form of capital is considered part of the capital structure. usually this means common stock, preferred stock, and bonds.

2. Any permanent form of capital should be considered. Short-term sources of capital should be considered if they are significant in amount and maintained at a more or less constant level.

C. The firm's capital structure affects the firm's cost of capital. the firm's cost of capital is a weighted average of the costs (returns required by investors) of the firm's sources of capital: common stock, long-term debt, and preferred stock.

D. A firm’s target capital structure is the debt-to-equity ratio that the firm tries to maintain over time. Several factors influence the firm’s ability and desire to issue debt and, hence, its target capital structure.

1. Business risk is the risk inherent in the firm’s basic operations due to the type of industry in which the firm operates. the greater the firm’s business risk, the lower its optimal debt ratio, so risky activities like deep sea exploration would typically be financed with equity rather than debt.
2. Using debt creates a tax shield. that is, interest payments on debt issued by firms are tax deductible, which lowers the effective cost of using debt.
3. Firms maintain financial flexibility by not over-utilizing debt.

E. The firm’s cost of capital is the rate it must pay on the various capital components used to fund its assets:

1. kd is the component cost of debt, equal to the required rate of return on new debt or the yield to maturity on existing debt.
2. kd(1 – t) is the after-tax cost of debt.
3. kps is the component cost of preferred stock.
4. kce is the component cost of common equity.

F. The component cost of preferred stock is found by dividing its price by its annual dividend.

$$Kps = \frac{Dps}{Pps}$$

G. The firm’s cost of common equity can be estimated using different methods:

1. The capital asset pricing model (CAPM) approach. kce = RF + ⍰(RM – RF)
2. The bond yield plus risk premium approach.

3. The discounted cash flow approach.

$$kce = \frac{d1}{P0} + g$$

a. Use the growth rate as projected by security analysts.

b. Estimate g using:

g = (retention rate)(return on equity) = (1 – payout rate)(RoE)

H. The firm's weighted average cost of capital (WACC) is the weighted average of the individual component costs. the weight of each component is its weight in the firm's target capital structure:

WACC = (wd)[kd(1 – t)] + (wps)(kps) + (wce)(kce)

❑ CAPITAL BUDGETING

A. Capital budgeting is the planning process for allocating funds to long-term projects, such as expanding operations.

B. An essential step in the capital budgeting process is the estimation of the cash flows expected from potential capital investment projects. Only incremental (i.e., resulting from acceptance of the project) cash flows should be considered.

1. The cost to initiate a project is called the net investment and generally includes the cost to acquire new assets as well as investments in net working capital.
2. Cash benefits come in the form of positive cash flow from increased revenue and profits or in the form of substantial cost savings.

C. Net present value (NPV) compares the cost of an asset to its expected cash flows.

1. The present value of expected cash flows is found by discounting them at the required return.
2. The NPV is the difference between the total present value of expected inflows and the cost of the asset.
3. There are three basic rules to remember with NPV:

a. A positive NPV indicates the project will add value to the firm.
b. A negative NPV indicates the project will subtract value from the firm.
c. A zero NPV indicates the project will meets its cost of capital but neither adds value to nor subtracts value from the firm.

D. The internal rate of return (IRR) is the asset's expected return and is the discount rate that makes the present value of the inflows equal to its cost (i.e., NPV = 0).

1. An IRR greater than the cost of capital indicates the project will add value to the firm.

2. An IRR less than the cost of capital indicates the project will subtract value from the firm.
3. An IRR equal to the cost of capital indicates the project will neither add value to nor subtract value from the firm.

E. The payback period (PBP) is the length of time required to recover a project's net investment. PBP is arbitrary and not recommended as a stand- alone method of evaluating capital budgeting projects.

❑ BREAKEVEN ANALYSIS

A. Operating breakeven analysis is used to determine the quantity of sales that will just cover a project's fixed and variable operating costs and as such indicates the degree of operating leverage of the project.

1. The breakeven quantity of sales results in an operating profit of zero.
2. Sales in excess of the breakeven quantity result in operating profits

3. Sales below the breakeven quantity result in operating losses.
B. Firms that already employ a high degree of operating leverage should use caution when considering additional projects with high breakeven levels.
C. Financial breakeven analysis includes interest cost as a fixed expense, and the firm is at the breakeven point when EBt (= EBIT – I) and net income are equal to zero.
D. Financial leverage increases the unit sales quantity required to breakeven, and magnifies the effects of operating leverage.
E. Managers should use financial leverage to magnify the firm's existing operating leverage only if they are comfortable with the resulting total firm risk.

PRACTICE QUESTIONS: CORPORATe FINANCE

1. All of the following are characteristics related to the ownership of a corporation EXCEPT:

a. The amount of control exerted by any individual over the firm is equal to the percentage of shares owned by the individual.
b. Ownership is easily transferable in a public market.
c. Owners of the firm generally are entitled to vote on major issues regarding the firm's management.
d. limited liability applies only to the minority shareholders.

2. Following are four statements given at a symposium on business structure. Which of the four statements correctly describes various attributes of the different forms of business?

a. A proprietorship offers the greatest level of owner control over business decisions but is also the most complicated business structure.
b. In a partnership the owners always share equal control over the operating decisions, making it the most complicated type of business.
c. A corporation is the most difficult business structure to form, and each owner has little influence on operating business decisions
d. An owner's control over operating decisions is the same in every business structure, but corporations are the most difficult to form.

3. Voltech Inc. is considering a change in its capital structure, which includes only debt and equity. the company has decided to increase the proportion of debt financing in order to move the capital structure toward what the company perceives as the optimal structure.

The company has also recently experienced a decline in its marginal tax rate. Assuming the costs debt and equity capital remain unchanged, what effect will the change in capital structure and tax rate have on Voltech's weighted average cost of capital?

	Capital structure	Tax rate
a.	Increase	Increase
b.	decrease	Increase
c.	decrease	decrease
d.	Increase	decrease

4. Which of the following statements is False?

a. A corporation is not legally required to pay dividends.

b. dividends are subject to double taxation.

c. liquidating dividends get paid out of retained earnings.

d. The Board of directors declares dividends.

5. Williams Corporation has recently enacted a plan to hire a review board for the firm's senior management team. the review board will be responsible for ensuring that the senior managers stop using company resources, such as the corporate jet, for personal use. Which of the following is False about Williams Corporation?

a. The cost of hiring the review board for the management team is an explicit agency cost.
b. The review board is likely to increase management's operating efficiency.
c. Management's excessive use of company assets is an agency cost to the firm.
d. The firm's stockholders bear the agency costs associated with the firm's current situation.

6. Shamus Fitzgerald is a partner in a company that provides cleaning services to office buildings. When the company was formed as a partnership three years ago, Shamus provided Rs.5,000 in equity capital but has not provided any equity investment since then. today, the company has a total of Rs.27,000 in common equity capital. the company also has Rs.11,000 in long-term debt. using this information, determine which of the following statements is True.

a. If the company fails, Shamus' personal assets cannot be used to repay the company's obligations.
b. Incorporating the company would increase the Shamus' liability exposure.
c. Shamus is personally responsible for Rs.2,037 of the company's long-term debt.
d. In the event of company failure, Shamus is only responsible for repaying Rs.5,000 of the company's outstanding liabilities.

7. Sylvia Hall is estimating changes in the level of risk related to tyler Corporation. Hall believes that several microeconomic factors have a direct influence on the riskiness of tyler Corp. and has developed a model predicting the risk level using microeconomic factors. Which of the following should not be included as a factor in Hall's model?

a. Unanticipated changes in the rate of inflation.
b. A change in the firm's management.
c. An unexpected decline in the economic viability of some of tyler Corp.'s assets.
d. An increase in the firm's cost to acquire raw materials.

8. Forrest, Inc. wants to amplify its ability to convert revenue increases into increases in net income. Which of the following accurately describes a method Forrest could use to accomplish this goal?

a. Increase the financial leverage of the firm.
b. Utilize a smaller proportion of fixed assets in the asset structure.
c. Decrease the level of debt expense on the income statement.
d. Shift the firm’s cost structure to include a greater proportion of variable costs.

9. Samantha Hurley assesses risk for Kowel & Associates, a risk management consulting firm. Hurley has observed that one of Kowel & Associates’ most important clients is exposed to a large degree of risk related to two factors: (1) changes in the overall level of interest rates and (2) changes in the number of competing products. Hurley’s risk estimates indicate that the client’s risk rating has exceeded acceptable levels. What advice should Hurley give the client?

a. Reduce the systematic risk related to competing products, and reduce the total risk related to interest rates.

b. Reduce the unsystematic risk related to competing products, and reduce the macroeconomic risk related to interest rates.
c. Reduce the unsystematic risk related to competing products, and reduce the stand-alone risk related to interest rates.
d. Reduce the stand-alone risk related to competing products, and reduce the macroeconomic risk related to interest rates.

10. Charleston, Inc. just experienced a decrease in revenue of 10%. In response, operating income and net income both decreased by 25%. Which of the following is True about Charleston, Inc.?

a. The firm has high operating leverage but no financial leverage.
b. The firm has no operating leverage but high financial leverage.
c. The firm has high operating leverage and high financial leverage.
d. The firm has no operating leverage and no financial leverage.

11. Which of the following statements about a corporation declaring a cash dividend is true?

a. The cash dividend must be approved for payment by the shareholders.
b. The cash dividend is a current liability to the corporation when declared.
c. The cash dividend does not affect the corporation's working capital.
d. The cash dividend is taxed as capital gains.

12. Bill Garrison has been asked to explain the basics of leverage and a firm's capital structure to a group of novice investors. Which of Garrison's statements accurately describes leverage and capital structure?

a. If a firm does not rely heavily on operating leverage, then the firm's fixed costs are a relatively small proportion of total costs.

b. An increase in the corporate tax rate will not change the way a corporation raises capital.
c. A firm exposed to significant business risk is more likely to use financial leverage than a firm with little business risk.
d. If a firm increases its financial leverage, the operating leverage will increase in a similar proportion.

13. Pieter Reinhardt recently made the following statements to a group of investors regarding agency costs. Which of the statements does not accurately describe an aspect of agency costs?

a. Agency costs arise as a result of management’s desire to use company assets for its personal gain and the owners’ desire to maximize the value of the firm.
b. Agency costs are minimized when the owners of a firm and the management of a firm are the same.

C. Agency costs arise as a result of stockholders' desire to increase the price of the common stock and debt holders' desire to secure interest payments.

D. Agency costs do not have any impact on the overall value of the firm.

14. Green & Company is a manufacturer of flooring materials including carpets and hardwoods. Recently, management at Green & Company announced its intention to finance a new investment project without altering the current capital structure of the firm. Which of the following correctly explains Green & Company's announcement?

a. Green & Company intends to maintain the ratio of current liabilities to total liabilities as it initiates the new investment project.

b. Any equity required to finance the new investment project will only come from retained earnings.

c. Green & Company intends to maintain the ratio of current assets to total assets as it initiates the new investment project.
d. The assets required to initiate the investment project will be acquired without altering the proportions of debt and equity capital currently on the balance sheet.

15. Madison Foods Company currently has Rs.2,500,000 of debt on its balance sheet and Rs.7,500,000 of equity. Madison has calculated that its long-term target capital structure should be 30% debt and 70% equity. Given the company's current capital structure, which of the following is true?

a. Any projects undertaken in the future will need to be financed with 70% equity.
b. Any projects undertaken in the future will need to be financed with more than 30% debt.
c. Any projects undertaken in the future will need to be financed with less than 30% debt.

d. Any projects undertaken in the future will need to be financed with more than 70% equity.

16. Which of the following is False regarding dividends?

a. The market price of a preferred stock is influenced by its dividend payout.
b. Stockholders pay double income taxes on the dividends they receive.
c. A utility company normally pays larger dividends.
d. Dividends are the portion retained by a company to grow operations.

17. Jerry Matthews is reviewing a report written by several managers reporting directly to him. the report details opportunities to be considered in the capital budgeting process this year. Which of the following opportunities listed by the managers is not a capital budgeting matter?

a. The firm needs to replace certain pieces of its assembly line machinery but does not need to replace the entire line.
b. The firm can save significant amounts of money by increasing the relative proportion of equity on the balance sheet.
c. The firm has a large tract of land that could be used to build a warehousing facility.
d. The firm can reduce its costs significantly by investing in a just-in-time inventory system.

18. If a firm is considering a capital investment project that is significantly more risky than the firm itself, which of the following will be true?

a. The IRR necessary to make the project worthwhile will be lower than a project with risk equal to the firm as a whole.
b. The discount rate to find the project's NPV will be higher than the firm's weighted average cost of capital.

c. The discount rate to find the project’s NPV will be lower than the firm’s weighted average cost of capital.

d. The IRR will not be a meaningful measure in this instance.

19. In the capital budgeting process, which of the following is not relevant?

a. The cost to acquire a new piece of equipment or machinery.

b. Cost savings that result from the investment project under consideration.

c. The risk of the cash flows associated with the project.

d. Total cash flow of the firm.

20. The following demonstrates the cash flow streams for Projects A, B, C, d, and E. Which of the projects has the shortest and longest payback periods, respectively?

Year	Project A	Project B	Project C	Project D
0	–15,000,000	–1,500,000	–8,750,000	–905,000
1	2,500,000	250,000	6,250,000	465,000
2	3,000,000	300,000	2,300,000	465,000
3	2,950,000	575,000	1,275,000	465,000
4	2,450,000	205,000	580,000	465,000
5	2,000,000	115,000	245,000	465,000
6	2,500,000	95,000	165,000	465,000

	Shortest	longest
A.	Project C	Project A
B.	Project d	Project B
C.	Project C	Project B
D.	Project d	Project A

21. Dodson Corp. expects a 10-year replacement project designed to increase the company's productivity to produce an NPV equal to Rs.1.5 million. the project will provide positive cash flows in years 1 through 10 of the project. If the project cash flows end unexpectedly after seven years, what will happen to the project's NPV and IRR?

	NPV	IRR
A.	Increase	decrease
B.	decrease	decrease
C.	decrease	Increase
D.	Increase	Increase

22. Which of the following statements is False?

a. operating leverage is a key determinant of break-even levels.
b. The degree of operating leverage tells us the sensitivity of operating cash flow to changes in sales volume.

c. In the short run, management has the flexibility to change a company’s high fixed cost structure.

d. With no fixed costs, the change in EBIT is the same as the change in revenues.

23. Mark Kelley is assessing an investment project. He has determined that, given his cash flow and risk assumptions, the project will add value to his firm. three days after deciding the project was acceptable, Kelley decided that the project was actually more risky than he originally thought. After reassessing the project’s risk, what should happen to the cost of capital and the NPV of the project Kelley is considering?

a. The cost of capital should decrease, while the NPV should increase.

b. The cost of capital should increase, and the NPV should increase.

c. The cost of capital should decrease, and the NPV should decrease.

d. The cost of capital should increase, while the NPV should decrease

24. In a meeting with her colleagues, Martha Samuels detailed the ideal characteristics of measures to evaluate capital budgeting projects. Which of the following characteristics is not necessary?

a. The measure should account for the timing of the cash flows.

b. The measure should account for the method of financing.

c. The measure should account for the risk of the project.

d. The measure should account for all of the project’s cash flows.

25. What is the NPV of the project at 10%?

A.	Rs.16,315.
B.	Rs.31,422.
C.	Rs.1,531,422.
d.	Rs.1,522,415.

26. What is the project’s IRR?

A.	10.00%.
B.	11.02%.
C.	9.85%.
d.	10.42%.

Use the following information to answer Questions 27 through 31.

Jamestown Sporting Supplies is a large manufacturer of sporting goods equipment to the u.S. and Canadian markets. Jamestown has grown rapidly over the past few years, and as a result, one of their key pieces of machinery is wearing out.

Jamestown is evaluating two potential projects, each of which would involve the purchase of a new machine to replace the old one. the incremental cash flows from each project including the net investment required today are summarized in the following table.

Year	Project A	Project B
0	–Rs.175,000	–Rs.120,000
1	100,000	10,000
2	90,000	10,000
3	10,000	40,000
4	5,000	105,000
Total	Rs.30,000	Rs.45,000

Jamestown’s capital structure consists of 40% debt and 60% equity. the after-tax cost of debt for the company is 5.5%, and the cost of equity is 8.0%.

27. Jamestown’s weighted average cost of capital is equal to which of the following?

a. 6.0%.

b. 6.5%.

c. 7.0%.

d. 7.5%.

28. If Jamestown is unwilling to accept any project with a payback period greater than 3 years, which of the following is true?

a. Jamestown should accept Project B, since it has a PBP of 1.83 years.

b. Jamestown should accept Project A, since it has a PBP of 1.83 years.

c. Jamestown should not accept Project B, since it has a PBP of 4.57 years.

d. Jamestown should not accept Project A, since it has a PBP of 4.57 years.

29. Calculate the net present value of each of the projects that Jamestown is considering.

Project A	Project B
Rs.12,939	Rs.10,411
Rs.10,386	Rs.9,045
Rs.9,045	Rs.10,836
Rs.10,411	Rs.12,939

30. Using the net present values calculated previously, which of the following statements is true?

a. Because it adds more value to the firm, Project A should be preferred to Project B.

b. Jamestown should not accept either of the projects, since they will decrease the value of the firm.

c. Jamestown should be indifferent between Project A and Project B, since they both add value to the firm.

d. Because it adds more value to the firm, Project B should be preferred to Project A.

31. Calculate the IRR for each project.

	Project A	Project B
A.	10.5%	10.5%
B.	10.5%	9.8%
C.	9.8%	10.5%
d.	9.8%	9.8%

Use the following information to answer Questions 32 through 35. toppers, Inc. manufactures and sells baseball caps in the united States. the

Company sells its complete line of caps for Rs.25 apiece. the company is currently evaluating three different projects that would change the cost structure of its operations. toppers is concerned about increasing the amount of operating leverage as a result of undertaking one of the three projects. Each of the projects' expected costs are summarized in the following table.

	Project A	Project B	Project C
Price	Rs.25.00	Rs.25.00	Rs.25.00
Variable costs	Rs.15.00	Rs.20.00	Rs.10.00
Fixed costs	Rs.80,000	Rs.60,000	Rs.120,000

32. What is the breakeven quantity of sales for Project B?

a. A. 12,000 caps.
b. 8,000 caps.
c. 1,000 caps.
d. 333 caps.

33. What is the breakeven quantity of sales for Project C?

a. A. 12,000 caps.
b. 8,000 caps.
c. 1,000 caps.
d. 229 caps.

34. Given toppers’ aversion to additional operating risk, which of the following statements is Correct?

a. Project B has the lowest contribution margin and therefore the lowest operating leverage.

b. Project A has more operating leverage than Project C.
c. Project B will add the most operating leverage and should be avoided.
d. Project C has more operating leverage than Project A.

35. If toppers sells 10,000 caps, what will be the operating profit or loss for Projects A, B, and C?

a. Project A will have an operating loss of Rs.20,000, and Project C will have an operating profit of Rs.30,000.
b. Project C will have an operating profit of Rs.30,000, and Project B will have an operating loss of Rs.10,000.
c. Project B will have an operating profit of Rs.10,000, and Project C will have an operating profit of Rs.30,000.
d. Project A will have an operating profit of Rs.20,000, and Project B will have an operating profit of Rs.10,000.

PRACTICE QUESTION ANSWERS: CORPORATE FINANCE

1. D   limited liability extends to all of the owners of a corporation. this is one of the reasons firms undergo the time consuming and, in some cases, expensive process of incorporating the firm.
2. C   Corporations must be registered within their state of incorporation, and they require more external reporting. In a proprietorship there is a sole owner. this individual has complete control over all decisions. In all other forms or business there are multiple owners which diffuse the control of any one owner.
3. B   Since debt generally has a lower component cost of capital than does equity, increasing the proportion of debt in the capital structure will decrease the overall WACC. Consider the following example:

kequity = 15%, kdebt = 8%, t = 40%

$WACC = 0.70(15\%) + 0.30[8\%(1 – 0.40)] = 10.5\% + 1.4\% = 11.9\%$

$WACC = 0.60(15\%) + 0.40[8\%(1 – 0.40)] = 9.00\% + 1.92\% = 10.9\%$

thus, we can see that as the proportion of debt increases, the WACC decreases. A decrease in the tax rate of a company will increase the WACC. Consider another example:

kequity = 15%, kdebt = 8%, wequity = 70%, wdebt = 30%

$WACC = 0.70(15\%) + 0.30[8\%(1 – 0.40)] = 10.5\% + 1.4\% = 11.9\%$

$WACC = 0.70(15\%) + 0.30[8\%(1 – 0.30)] = 10.5\% + 1.7\% = 12.2\%$

As the tax rate decreases, the WACC increases.

4. C Ordinary dividends are paid out of retained earnings. If the firm decides to pay dividends in excess of retained earnings, this is known as a liquidating dividend.

5. B Having the review board in place may eliminate the wasteful use of the company’s assets, but the cost will be the payment made to the board for their services as well as decreased operating flexibility. With someone watching their every move, management will become overly cautious and may forego profitable opportunities for fear of scrutiny by the review board.
6. C In a partnership, each partner is personally responsible for company liabilities in proportion to the partner’s ownership in the company. In this question, Shamus owns 5,000 / 27,000 = 18.51% of the company and is thus responsible for 0.1851 × 11,000 = Rs.2,037 of the company’s debt.
7. A Microeconomic factors include firm-specific factors. Inflation is a macroeconomic (system-wide) factor.
8. A Increasing financial leverage will amplify how revenue increases affect the firm’s net income. this will also increase the firm’s financial risk.

9. B Unsystematic risk or firm-specific risk is the risk caused by microeconomic forces (such as the risk associated with competing products). Macroeconomic risk relates to economy-wide forces that affect all companies (such as the level of interest rates).
10. A If a firm does not employ financial leverage, the percentage change in net income should be equal to the percentage change in operating income.
11. B The Board of directors of the corporation has the authority to declare a dividend, and when a dividend is declared it becomes a current liability of the corporation. the current liability impacts the company’s working capital (current assets minus current liabilities).
12. A Operating leverage comes from the use of fixed costs in the operating structure. As fixed costs decrease as a proportion of total costs, the operating leverage of the firm decreases.

13. D The origin of agency costs is the separation of ownership and management. Also, the goals of the stockholders, bondholders, and management are sometimes at odds. Agency costs are detrimental to the firm and prevent the firm from realizing its maximum value.
14. D Capital structure refers to the proportions of debt and equity financing used to pay for the firm's assets. If Green & Company wants to finance a new investment without changing the capital structure, it will need to raise the required investment according to the existing proportions. For instance, if the current capital structure consists of 40% debt and 60% equity, Green & Company must raise 40 cents of debt capital and 60 cents of equity capital for every dollar of investment required for the new project.

15. B The firm’s current capital structure includes a debt ratio of 2,500,000 = 25% . Since the target capital structure includes a debt (2,500,000 + 7,500,000) ratio of 30%, new projects will have to make up the extra 5% needed to get to the target structure. therefore the proportion of debt financing for new projects will have to be greater than the target 30% to make up the deficiency. If the firm was already at the target structure, then new projects would be financed with 30% debt and 70% equity.
16. D Dividends are not retained by the corporation but are paid to shareholders. Earnings retained by the corporation are used to finance future projects, which, if successful, will allow the company to grow.
17. B Increasing the proportion of equity on the balance sheet is a financing decision, not a capital budgeting decision. Capital budgeting decisions relate to the opportunities for investment in the business to increase its value. Changing the mix of debt and equity doesn’t change the value, just how it is divided among the stakeholders.

18. B A project that is riskier than the firm as a whole will need to be evaluated on a present value basis using a discount rate that is higher than the weighted average cost of capital.
19. D When considering capital budgeting projects, it is the incremental cash flow, not the total cash flow, that is relevant. the project needs to be evaluated in terms of how much value it will add to the firm. In order to do this, we must isolate only those cash flows that will result from the project itself.
20. D First calculate the cumulative cash flows for each project as demonstrated in the following table:

Year	Project A	Project B	Project C	Project D
0	–15,000,000	–1,500,000	–8,750,000	–905,000
1	–12,500,000	–1,250,000	–2,500,000	–440,000
2	–9,500,000	–950,000	–200,000	25,000

once the cumulative cash flows for a project turn positive (indicating full recovery of the initial project cost), we can calculate the payback period for the project using the following formula:

$$PBP = \text{years until full recovery} + \frac{\text{unrecovered cost at the beginning of the last year}}{\text{cash flow during the last year}}$$

Thus the payback period (PBP) for each project is as follows:

$$PBPA = \frac{5 + 2,100,000}{2,500,000} = 5 + 0.84 = 5.84$$

$$PBPB = \frac{5 + 55,000}{95,000} = 5 + 0.58 = 5.58$$

$$PBPC = \frac{2 + 200,000}{1,275,000} = 2 + 0.16 = 2.16$$

$$PBPd = \frac{1 + 440,000}{465,000} = 1 + 0.95 = 1.95$$

21. B If the positive cash flows from a project end before they are expected or are less than originally expected, then the NPV of a project will decrease since there is less overall cash benefit from undertaking the project. the IRR will also decrease for the same reason. Fewer cash flows or smaller cash flows than expected translates into smaller returns.
22. C Management can only effectively deal with high fixed costs over a longer-term time horizon.
23. D As the risk of a project increases, the cost of capital (the interest rate used to discount the project's cash flows to their present value) should increase to reflect the additional return required for the increased risk. An increased cost of capital would necessitate a decreased NPV. discounting the project's cash flows at a higher rate decreases the present value of each cash flow and thus the NPV as well.
24. B How a firm chooses to finance a project is theoretically independent from the decision to accept or reject a project. the decision to accept a project should be based on an objective measure that takes into account all of a project's cash flows, the project's risk, and the time value of money.

25. A

Year	Net Cash Flow	PV @ 10%
0	–Rs.1,500,000	–Rs.1,500,000
1	400,000	363,636
2	400,000	330,579
3	400,000	300,526
4	400,000	273,205
5	400,000	248,369
Total		Rs.1,516,315

NPV = SPV inflows – cost = Rs.1,516,315 – Rs.1,500,000 = Rs.16,315

note: the cash inflows could be treated as an annuity of Rs.400,000 for five years:

–400,000	PMt
5	n
10	I/Y
CPt PV	Rs.1,516,315

26. D Since the cash inflows are an annuity, solving for the IRR is fairly simple:

–400,000 PMt

5 n

1,500,000 PV

CPt I/Y 10.42%

27. C The WACC is the weighted average of the capital costs.

WACC = (0.40 × 5.5%) + (0.60 × 8.0%) = 2.2% + 4.8% = 7.0%

28. B In order to calculate the payback period, we must first calculate the cumulative cash flows for each project.

	Project A		Project B	
Year	NCF	Cum. NCF	NCF	Cum. NCF
0	–Rs.175,000	– Rs.175,000	–Rs.120,000	–Rs.120,000
1	Rs.100,000	–75,000	Rs.10,000	– 110,000

The table shows that for Project A, the PBP will be between one and two years since the cumulative cash flow turns positive in year 2. For Project B, the PBP will be between 3 and 4 years. More specifically:

$$PBPA = 1 + \frac{75,000}{90,000} = 1 + 0.83 = 1.83 \text{ years}$$

$$PBPB = 3 + \frac{60,000}{105,000} = 3 + 0.57 = 3.57 \text{ years}$$

Since the cutoff point for investment projects is three years, Jamestown should accept Project A.

29. C To calculate the NPV of each project, discount each project's cash flows using the 7.0% WACC as the discount rate. the cash flows (undiscounted and discounted) are presented in the following tables.

Year	Project A	Project B	Year	Project A	Project B
0	–Rs.175,000	–Rs.120,000	0	–Rs.175,000	–Rs.120,000
1	100,000	10,000	1	93,458	9,346
2	90,000	10,000	2	78,609	8,734
3	10,000	40,000	3	8,163	32,652
4	5,000	105,000	4	3,814	80,104
Total	Rs.30,000	Rs.45,000	NPV	Rs.9,045	Rs.10,836

The table shows that for Project A, the PBP will be between one and two years since the cumulative cash flow turns positive in year 2. For Project B, the PBP will be between 3 and 4 years. More specifically:

$$PBPA = 1 + \frac{75,000}{90,000} = 1 + 0.83 = 1.83 \text{ years}$$

$$PBPB = 3 + \frac{60,000}{105,000} = 3 + 0.57 = 3.57 \text{ years}$$

Since the cutoff point for investment projects is three years, Jamestown should accept Project A.

30. D Although any project with a positive NPV will increase the value of the firm, Jamestown only needs to replace one machine and thus can only choose one project. Since Project B has a greater NPV than Project A, the firm should choose Project B. Project B will increase the value of the firm by the greatest amount.

31. B The IRR is the discount rate that makes the NPV of the project equal zero. For example, for Project A, the IRR is the discount rate that, when substituted into the NPV formula below, makes the equation true:

$$0 = \frac{100{,}000}{(1 + IRR)^1} + \frac{90{,}000}{(1 + IRR)^2} + \frac{10{,}000}{(1 + IRR)^3} + \frac{5{,}000}{(1 + IRR)^4} - 175{,}000$$

The IRR can be found by trial and error or by using a calculator such as the TI BA II+. In order to find the IRR using the TI BA II+, use the following keystrokes:

[CF] [2ND] [CLR WORK] Clears the cash flow worksheet

175,000 [+/–] [ENTER] Enters the net investment

[↓] 100,000 [ENTER] Enters 1st year's cash flow

[↓] [↓] 90,000 [ENTER] Enters 2nd year's cash flow

[↓] [↓] 10,000 [ENTER] Enters 3rd year's cash flow

[↓] [↓] 5,000 [ENTER] Enters 4th year's cash flow

[IRR] [CPT] Computes the IRR

U sing the method detailed above, the IRR for Project A is 10.5%, and the IRR for

Project B is 9.8%.

32. A QBE $= \frac{60\,000}{(25-20)} = 12\,000$

32. A QBE $= \frac{120000}{(25-10)} = 8\,000$

34. C Project B has the highest breakeven level of sales (12,000) and therefore adds the most operating leverage. Project A and Project C both have a breakeven quantity of 8,000 and therefore have the same operating risk. Project B does have the lowest contribution margin (25 – 20 = 5), but this does not indicate that it has the lowest operating leverage.

35. B Calculate the operating profit or loss as follows:

operating profit = sales – variable cost – fixed cost

Profit A = (10,000 × 25) – (10,000 × 15) – 80,000 = Rs.20,000

Profit B = (10,000 × 25) – (10,000 × 20) – 60,000 = –Rs.10,000

Profit C = (10,000 × 25) – (10,000 × 10) – 120,000 = Rs.30,000

CAPITAL

❑ Capital Funds

Equity contribution of owners. The basic approach of capital adequacy framework is that a bank should have sufficient capital to provide a stable resource to absorb any losses arising from the risks in its business. Capital is divided into different tiers according to the characteristics / qualities of each qualifying instrument. For supervisory purposes capital is split into two categories:

- Tier I
- Tier II

➢ Tier I Capital

A term used to refer to one of the components of regulatory capital. It consists mainly of share capital and disclosed reserves (minus goodwill, if any). Tier I items are deemed to be of the highest quality because they are fully available to cover losses .Hence it is also termed as core capital.

- **Tier II Capital**

Refers to one of the components of regulatory capital. Also known as supplementary capital, it consists of certain reserves and certain types of subordinated debt. Tier II items qualify as regulatory capital to the extent that they can be used to absorb losses arising from a bank's activities. Tier II's capital loss absorption capacity is lower than that of Tier I capital.

- **Revaluation reserves**

Revaluation reserves are a part of Tier-II capital. These reserves arise from revaluation of assets that are undervalued on the bank's books, typically bank premises and marketable securities. The extent to which the revaluation reserves can be relied upon as a cushion for unexpected losses depends mainly upon the level of certainty that can be placed on estimates of the market values of the relevant assets and the subsequent deterioration in values under difficult market conditions or in a forced sale.

- **Leverage**

Ratio of assets to capital.

❑ Capital reserves

That portion of a company's profits not paid out as dividends to shareholders. They are also known as undistributable reserves and are ploughed back into the business.

❑ Deferred Tax Assets

Unabsorbed depreciation and carry forward of losses which can be set-off against future taxable income which is considered as timing differences result in deferred tax assets. The deferred Tax Assets are accounted as per the Accounting Standard 22.

❑ Deferred Tax Liabilities

Deferred tax liabilities have an effect of increasing future year's income tax payments, which indicates that they are accrued income taxes and meet definition of liabilities.

❑ Subordinated debt

Refers to the status of the debt. In the event of the bankruptcy or liquidation of the debtor, subordinated debt only has a secondary claim on repayments, after other debt has been repaid.

❑ **Hybrid Debt Capital Instruments**

In this category, fall a number of capital instruments, which combine certain characteristics of equity and certain characteristics of debt. Each has a particular feature, which can be considered to affect its quality as capital. Where these instruments have close similarities to equity, in particular when they are able to support losses on an ongoing basis without triggering liquidation, they may be included in Tier II capital.

❑ **BASEL Committee on Banking Supervision**

The BASEL Committee is a committee of bank supervisors consisting of members from each of the G10 countries. The Committee is a forum for discussion on the handling of specific supervisory problems. It coordinates the sharing of supervisory responsibilities among national authorities in respect of banks' foreign establishments with the aim of ensuring effective supervision of banks' activities worldwide.

❑ BASEL Capital accord

The BASEL Capital Accord is an Agreement concluded among country representatives in 1988 to develop standardized risk-based capital requirements for banks across countries. The Accord was replaced with a new capital adequacy framework (BASEL II), published in June 2004. BASEL II is based on three mutually reinforcing pillars that allow banks and supervisors to evaluate properly the various risks that banks face. These three pillars are: Minimum capital requirements, which seek to refine the present measurement framework supervisory ; review of an institution's capital adequacy and internal assessment process; market discipline through effective disclosure to encourage safe and sound banking practices.

❑ Risk Weighted Asset

The notional amount of the asset is multiplied by the risk weight assigned to the asset to arrive at the risk weighted asset number. Risk weight for different assets vary e.g. 0% on a Government Dated Security and 20% on a AAA rated foreign bank etc.

❑ CRAR(Capital to Risk Weighted Assets Ratio)

Capital to risk weighted assets ratio is arrived at by dividing the capital of the bank with aggregated risk weighted assets for :
credit risk, market risk and operational risk.
The higher the CRAR of a bank the better capitalized it is.

❑ Credit Risk

1. **Standardized approach (SA)** - Under the SA, the banks use a risk-weighting schedule for measuring the credit risk of its assets by assigning risk weights based on the rating assigned by the external credit rating agencies.
2. The risk that a party to a contractual agreement or transaction will be unable to meet its obligations or will default on commitments. Credit risk can be associated with almost any financial transaction. BASEL-II provides two options for measurement of capital charge for credit risk:
3. **Internal rating based approach (IRB)** - The IRB approach, on the other hand, allows banks to use their own internal ratings of counterparties and exposures, which permit a finer differentiation of risk for various exposures and hence delivers capital requirements that are better aligned to the degree of risks.

- **The IRB approaches are of two types:**

a) Foundation IRB (FIRB): The bank estimates the Probability of Default (PD) associated with each borrower, and the supervisor supplies other inputs such as Loss Given Default (LGD) and Exposure At Default (EAD).

b) Advanced IRB (AIRB): In addition to Probability of Default (PD), the bank estimates other inputs such as EAD and LGD. The requirements for this approach are more exacting. The adoption of advanced approaches would require the banks to meet minimum requirements relating to internal ratings at the outset and on an ongoing basis such as those relating to the design of the rating system, operations, controls, corporate governance, and estimation and validation of credit risk components, viz., PD for both FIRB and AIRB and LGD and EAD for AIRB. The banks should have, at the minimum, PD data for five years and LGD and EAD data for seven years. In India, banks have been advised to compute capital requirements for credit risk adopting the SA(Standardized Approach).

❑ Market risk

Market risk is defined as the risk of loss arising from movements in market prices or rates away from the rates or prices set out in a transaction or agreement. The capital charge for market risk was introduced by the BASEL Committee on Banking Supervision through the Market Risk Amendment of January 1996 to the capital accord of 1988 (BASEL I Framework). There are two methodologies available to estimate the capital requirement to cover market risks:

1. **The Standardized Measurement Method**: This method, currently implemented by the Reserve Bank, adopts a 'building block' approach for interest-rate related and equity instruments which differentiate capital requirements for 'specific risk' from those of 'general market risk'. The 'specific risk charge' is designed to protect against an adverse movement in the price of an individual security due to factors related to the individual issuer. The 'general market risk charge' is designed to protect against the interest rate risk in the portfolio.

2. **The Internal Models Approach (IMA)**: This method enables banks to use their proprietary in-house method which must meet the qualitative and quantitative criteria set out by the BCBS and is subject to the explicit approval of the supervisory authority.

❑ Operational Risk

The revised BASEL II framework offers the following three approaches for estimating capital charges for operational risk:

1. **The Basic Indicator Approach (BIA)**: This approach sets a charge for operational risk as a fixed percentage ("alpha factor") of a single indicator, which serves as a proxy for the bank's risk exposure.
2. **The Standardized Approach (SA):** This approach requires that the institution separate its operations into eight standard business lines, and the capital charge for each business line is calculated by multiplying gross income of that business line by a factor (denoted beta) assigned to that business line.

3. **Advanced Measurement Approach (AMA)**: Under this approach, the regulatory capital requirement will equal the risk measure generated by the banks' internal operational risk measurement system. In India, the banks have been advised to adopt the BIA to estimate the capital charge for operational risk and 15% of average gross income of last three years is taken for calculating capital charge for operational risk.

❑ Internal Capital Adequacy Assessment Process (ICAAP)

In terms of the guidelines on BASEL II, the banks are required to have a board-approved policy on internal capital adequacy assessment process (ICAAP) to assess the capital requirement as per ICAAP at the solo as well as consolidated level. The ICAAP is required to form an integral part of the management and decision-making culture of a bank. ICAAP document is required to clearly demarcate the quantifiable and qualitatively assessed risks. The ICAAP is also required to include stress tests and scenario analyses, to be conducted periodically, particularly in respect of the bank's material risk exposures, in order to evaluate the potential vulnerability of the bank to some unlikely but plausible events or movements in the market conditions that could have an adverse impact on the bank's capital.

❑ Supervisory Review Process (SRP)

Supervisory review process envisages the establishment of suitable risk management systems in banks and their review by the supervisory authority. The objective of the SRP is to ensure that the banks have adequate capital to support all the risks in their business as also to encourage them to develop and use better risk management techniques for monitoring and managing their risks.

❑ Market Discipline

Market Discipline seeks to achieve increased transparency through expanded disclosure requirements for banks.

❑ Credit risk mitigation

Techniques used to mitigate the credit risks through exposure being collateralised in whole or in part with cash or securities or guaranteed by a third party.

❑ Mortgage Back Security

A bond-type security in which the collateral is provided by a pool of mortgages. Income from the underlying mortgages is used to meet interest and principal repayments.

❑ Derivative

A derivative instrument derives its value from an underlying product. There are basically three derivatives

a) **Forward Contract-** A forward contract is an agreement between two parties to buy or sell an agreed amount of a commodity or financial instrument at an agreed price, for delivery on an agreed future date. Future Contract- Is a standardized exchange tradable forward contract executed at an exchange. In contrast to a futures contract, a forward contract is not transferable or exchange tradable, its terms are not standardized and no margin is exchanged. The buyer of the forward contract is said to be long on the contract and the seller is said to be short on the contract.

b) **Options**- An option is a contract which grants the buyer the right, but not the obligation, to buy (call option) or sell (put option) an asset, commodity, currency or financial instrument at an agreed rate (exercise price) on or before an agreed date (expiry or settlement date). The buyer pays the seller an amount called the premium in exchange for this right. This premium is the price of the option.

c) Swaps- Is an agreement to exchange future cash flow at pre-specified Intervals. Typically one cash flow is based on a variable price and other on affixed one.

❑ Duration

Duration (Macaulay duration) measures the price volatility of fixed income securities. It is often used in the comparison of interest rate risk between securities with different coupons and different maturities. It is defined as the weighted average time to cash flows of a bond where the weights are nothing but the present value of the cash flows themselves. It is expressed in years. The duration of a fixed income security is always shorter than its term to maturity, except in the case of zero coupon securities where they are the same.

❑ Modified Duration

Modified Duration = Macaulay Duration/ (1+y/m), where 'y' is the yield (%), 'm' is the number of times compounding occurs in a year. For example if interest is paid twice a year m=2. Modified Duration is a measure of the percentage change in price of a bond for a 1% change in yield.

❑ Non Performing Assets (NPA)

An asset, including a leased asset, becomes non performing when it ceases to generate income for the bank.

❑ Net NPA

Gross NPA - (Balance in Interest Suspense account + DICGC/ECGC claims received and held pending adjustment + Part payment received and kept in suspense account + Total provisions held).

❑ Coverage Ratio

Equity minus net NPA divided by total assets minus intangible assets.

❑ Slippage Ratio

(Fresh accretion of NPAs during the year/Total standard assets at the beginning of the year)*100

❑ Restructuring

A restructured account is one where the bank, grants to the borrower concessions that the bank would not otherwise consider.

Restructuring would normally involve modification of terms of the advances/securities, which would generally include, among others, alteration of repayment period/ repayable amount/ the amount of installments and rate of interest. It is a mechanism to nurture an otherwise viable unit, which has been adversely impacted, back to health.

❑ Substandard Assets

A substandard asset would be one, which has remained NPA for a period less than or equal to 12 months. Such an asset will have well defined credit weaknesses that jeopardize the liquidation of the debt and are characterized by the distinct possibility that the banks will sustain some loss, if deficiencies are not corrected.

❑ Doubtful Asset

An asset would be classified as doubtful if it has remained in the substandard category for a period of 12 months. A loan classified as doubtful has all the weaknesses inherent in assets that were classified as substandard, with the added characteristic that the weaknesses make collection or liquidation in full, - on the basis of currently known facts, conditions and values - highly questionable and improbable.

❑ Loss Asset

A loss asset is one where loss has been identified by the bank or internal or external auditors or the RBI inspection but the amount has not been written off wholly. In other words, such an asset is considered uncollectible and of such little value that its continuance as a bankable asset is not warranted although there may be some salvage or recovery value.

❑ Off Balance Sheet Exposure

- ❑ Off Balance Sheet exposures refer to the business activities of a bank that generally do not involve booking assets (loans) and taking deposits. Off-balance sheet activities normally generate fees, but produce liabilities or assets that are deferred or contingent and thus, do not appear on the institution's balance sheet until and unless they become actual assets or liabilities.

❑ Current Exposure Method

The credit equivalent amount of a market related off-balance sheet transaction is calculated using the current exposure method by adding the current credit exposure to the potential future credit exposure of these contracts. Current credit exposure is defined as the sum of the positive mark to market value of a contract. The Current Exposure Method requires periodical calculation of the current credit exposure by marking the contracts to market, thus capturing the current credit exposure. Potential future credit exposure is determined by multiplying the notional principal amount of each of these contracts irrespective of whether the contract has a zero, positive or negative mark-to-market value by the relevant add-on factor prescribed by RBI, according to the nature and residual maturity of the instrument.

EARNINGS

- **Total income**

Sum of interest/discount earned, commission, exchange, brokerage and other operating income.

- **Total operating expenses**

Sum of interest expended, staff expenses and other overheads.

- **Operating profit before provisions**

Net of total income and total operating expenses.

- **Net operating profit**

Operating profit before provision minus provision for loan losses, depreciation in investments, write off and other provisions.

- **Profit before tax (PBT)**

(Net operating profit +/- realized gains/losses on sale of assets)Profit after tax (PAT)

- **Profit after tax**

Profit before Tax -Provision for tax.

- **Retained earnings**

Profit after tax – dividend paid/proposed.

- **Average Yield**

(Interest and discount earned/average interest earning assets)*100

- **Average cost**

(Interest expended on deposits and borrowings/Average interest bearing liabilities)*100

- **Return on Asset (ROA)** - After Tax

Return on Assets (ROA) is a profitability ratio which indicates the net profit (net income) generated on total assets. It is computed by dividing net income by average total assets. Formula- (Profit after tax/Av. Total assets)*100

- **Return on equity (ROE)**- After Tax

Return on Equity (ROE) is a ratio relating net profit (net income) to shareholders' equity. Here the equity refers to share capital reserves and surplus of the bank. Formula- Profit after tax/(Total equity + Total equity at the end of previous year)/2}*100

- **Accretion to equity**

(Retained earnings/Total equity at the end of previous year)*100

- **Net Non-Interest Income**

The differential (surplus or deficit) between non-interest income and non-interest expenses as a percentage to average total assets.

- **Net Interest Income (NII)**

The NII is the difference between the interest income and the interest expenses.

- **Net Interest Margin**

Net interest margin is the net interest income divided by average interest earning assets.

❑ **Cost income ratio (Efficiency ratio)**

The cost income ratio reflects the extent to which non-interest expenses of a bank make a charge on the net total income (total income - interest expense). The lower the ratio, the more efficient is the bank. Formula: Non interest expenditure / Net Total Income * 100.

FUNDS AND INVESTMENT

- **CASA Deposit**

Deposit in bank in current and Savings account.

- **High Cost Deposit**

Deposits accepted above card rate (for the deposits) of the bank.

- **Liquid Assets**

Liquid assets consists of: cash, balances with RBI, balances in current accounts with banks, money at call and short notice, inter-bank placements due within 30 days and securities under "held for trading" and "available for sale" categories excluding securities that do not have ready market.

- **Funding Volatility Ratio**

Liquid assets [as above] to current and savings deposits - (Higher the ratio, the better)

- **Market Liability Ratio**

Inter-bank and money market deposit liabilities to Average Total Assets

- **ALM**

Asset Liability Management (ALM) is concerned with strategic balance sheet management involving all market risks. It also deals with liquidity management, funds management, trading and capital planning.

- **ALCO**

Asset-Liability Management Committee (ALCO) is a strategic decision making body, formulating and overseeing the function of asset liability management (ALM) of a bank.

- **Banking Book**

The banking book comprises assests and liabilities, which are contracted basically on account of relationship or for steady income and statutory obligations and are generally held till maturity.

❑ Venture Capital Fund

A fund set up for the purpose of investing in startup businesses that is perceived to have excellent growth prospects but does not have access to capital markets.

❑ Held Till Maturity(HTM)

The securities acquired by the banks with the intention to hold them up to maturity.

❑ Held for Trading(HFT)

Securities where the intention is to trade by taking advantage of short-term price / interest rate movements.

❑ Available for Sale(AFS)

The securities available for sale are those securities where the intention of the bank is neither to trade nor to hold till maturity. These securities are valued at the fair value which is determined by reference to the best available source of current market quotations or other data relative to current value.

❑ Yield to maturity (YTM) or Yield

The Yield to maturity (YTM) is the yield promised to the bondholder on the assumption that the bond will be held to maturity and coupon payments will be reinvested at the YTM. It is a measure of the return of the bond.

❑ Convexity

This represents the rate of change of duration. It is the difference between actual price of a bond and the price estimated by modified duration.

❑ Foreign Currency Convertible Bond

A bond issued in foreign currency abroad giving the investor the option to convert the bond into equity at a fixed conversion price or as per a pre-determined pricing formula.

❑ Trading Book

Investments in trading book are held for generating profits on the short term differences in prices/yields. Held for trading (HFT) and Available for sale (AFS) category constitute trading book.

- **CRR**

Cash reserve ratio is the cash parked by the banks in their specified current account maintained with RBI.

- **SLR**

Statutory liquidity ratio is in the form of cash (book value), gold (current market value) and balances in unencumbered approved securities.

- **Stress testing**

Stress testing is used to evaluate a bank's potential vulnerability to certain unlikely but plausible events or movements in financial variables. The vulnerability is usually measured with reference to the bank's profitability and /or capital adequacy.

- **Scenario Analysis**

A method in which the earnings or value impact is computed for different interest rate scenario.

- **LIBOR**

London Inter Bank Offered Rate. The interest rate at which banks offer to lend funds in the interbank market.

❑ **Basis Point**

Is one hundredth of one percent. 1 basis point means 0.01%. Used for measuring change in interest rate/yield.

❑ **Fraud**

Frauds have been classified as under, based mainly on the provisions of the Indian Penal Code:

a) Misappropriation and criminal breach of trust.
b) Fraudulent encashment through forged instruments, manipulation of books of account or through fictitious accounts and conversion of property.
c) Unauthorized credit facilities extended for reward or for illegal gratification.
d) Negligence and cash shortages.
e) Cheating and forgery.
f) Irregularities in foreign exchange transactions.
g) Any other type of fraud not coming under the specific heads as above.

ASSET SECURITIZATION

- ❑ **Securitization**

A process by which a single asset or a pool of assets are transferred from the balance sheet of the originator (bank) to a bankruptcy remote SPV (trust) in return for an immediate cash payment.

- ❑ **Special Purpose Vehicle (SPV)**

An entity which may be a trust, company or other entity constituted or established by a 'Deed' or 'Agreement' for a specific purpose.

- ❑ **Bankruptcy Remote.**

The legal position with reference to the creation of the SPV should be such that the SPV and its assets would not be touched in case the originator of the securitization goes bankrupt and its assets are liquidated.

- **Credit enhancement**

These are the facilities offered to an SPV to cover the probable losses from the pool of securitized assets. It is a credit risk cover given by the originator or a third party and meant for the investors in any securitization process.

- **Custodian**

An entity, usually a bank that actually holds the receivables as agent and bailee of the trustee.

- **First loss facility**

First level of credit enhancement offered to an SPV as part of the process in bringing the securities issued by SPV to investment grade.

- **Second loss facility**

Credit enhancement providing the second or subsequent tier of protection to an SPV against potential losses.

- **Value at Risk (VAR)**

VAR is a single number (currency amount) which estimates the maximum expected loss of a portfolio over a given time horizon (the holding period) and at a given confidence level.

VAR is defined as an estimate of potential loss in a position or asset/liability or portfolio of assets/liabilities over a given holding period at a given level of certainty. The following are the three main methodologies used to calculate VAR: Parametric Estimates - Estimates VAR using parameters such as volatility and correlation. Accurate for traditional assets and linear derivatives, but less accurate for non linear derivatives. Monte Carlo simulation- Estimates VAR by simulating random scenarios and revaluing positions in the portfolio. Appropriate for all types of instruments, linear and nonlinear. Historical simulation- Estimates VAR by reliving history; takes actual historical rates and revalues positions for each change in the market.

- **Commercial real estate**

Commercial real estate is defined as "fund based and non-fund based exposures secured by mortgages on commercial real estates (office buildings, retail space, multi-purpose commercial premises, multi-family residential buildings, multi-tenanted commercial premises, industrial or warehouse space, hotels, land acquisition, development and construction etc.)"

NDS-OM WEB

- **Primary Member (PM)**

A member of NDS-OM (having Constituent Subsidiary General Ledger (CSGL) and current account with RBI) who authorizes their Gilt Account Holders to have direct access to the web enabled NDS-OM system.

- **Gilt Account Holders (GAHs)**

Non-NDS members who have gilt account and current account with PMs are termed as GAHs. GAHs permitted by RBI include NBFCs, Provident Funds, Pension Funds, Mutual Funds, Insurance Companies, Cooperative Banks, Regional Rural Banks, Trusts, Corporates, Individuals etc.

- **Dedicated URL ndsind.com**

Dedicated URL is a secure site, i.e., https// accessible only through deployment of requisite digital certificates and tokens (for non-repudiation of transactions).

The issuance and management of digital certificates and security tokens would be the responsibility of the PM as part of GAH creation and activation process. Regular renewals thereof would also be the PM's responsibility.

- **Digital Certificates and e-tokens (PM)**

Digital certificates are digital signatures to be obtained by PM from any Government Recognized Certifying Authority designated by RBI, on behalf of GAH. For added security, the certificates need to be installed in an e-token as per specifications approved. The digital certificate and token specifications needs to be SHA 2 (2048 bit) compliant. Without the Digital certificate and e-token, the GAH cannot log in to the NDS OM web based module. The Primary member will be responsible for obtaining/renewal and intimating revocation to RBI/CCIL of the Digital Certificate for such GAH users.

- **NDS OM Administrator (CCIL; NDS OM Admin)**

The Administrator (CCIL) is the person who creates and activates the GAH in the web-based system on the request of the PM and also authorizes the employees of GAH (GAH Users created by PM) to access the system by generating login and password.

❑ Authorized Users of Gilt Account Holder (GAH User)

Once GAH is created as a client of PM in the web-based system by CCIL (the NDS OM Admin), Users of GAH are created by PM and later authorized by CCIL to access and operate the system. While authorizing, CCIL generates the login ID and password for the GAH Users and forwards the same to PM. PM in turn forwards the same to GAH to enable its employees (GAH Users) to log-in to the Web Based Application (https://www.ndsind.com).

❑ Client Head (PM)

The 'Client Head' is the super user at the PM end. Only 'Client Head' has privileges to perform actions like create GAH users, modify users, suspend users, unlock, log-off users, reset the login password of users, set risk limits & take action on client bids etc. Only one user is possible in every PM environment.

❑ Transactional' User (GAH)

These are GAH employees (GAH Users) who are authorized by PM to place, modify, cancel their bids, view status of their bids and view the limits set by the PM & along with the current utilization.

❑ View Only' User (GAH)

These are GAH employees (GAH Users) who have been provided with 'View only' rights by the PM. These employees have an aggregated view of all the activities and risk limits of all transactional users under the respective GAH. It also includes view of issuance details and aggregate view of bidding and allocation details of all transactional users.

❑ Single Order Limit (SOL) for Trades

SOL shall mean the maximum order quantity (in terms of face value) that can be placed by the concerned user through a single order.

❑ Price/Yield Range Settings for Trades

NDS-OM Web shall validate that the price/yield of every order placed by a GAH user is within the range specified by the Primary Member vis-à-vis the last traded price/yield for the concerned security in the specific market.

❑ Security Stock Balances Settings for Trades

Primary Members shall update the Security Stock Balances for each of their GAH.

Once input, NDS-OM shall automatically update the security balances based on activity undertaken on NDS-OM Web on the same lines as that of NDS-OM. Adequacy of available free balances for each security shall be validated before accepting a sale order(s) for any security. If the balance is not adequate, the respective sale order shall be rejected.

- **Activity Control Settings for Trades**

Primary Members shall assign Buy and / or Sell privileges to each of the Transactional Users of their GAH through activity control settings.

- **Funding Limits Settings for Trades**

Funding limits for trades represent the net aggregate settlement consideration amount up to which the concerned GAH can accumulate net long fund positions arising out of trades concluded on NDS-OM Web. This control shall be set for every GAH at the GAH user level. This limit constitutes a trading limit which shall get reinstated at the beginning of every trading session for every GAH.

❑ Turnover Limits for Trades

Turnover limits represent the gross amount in face value terms computed by aggregating individual "buys" + "sells" orders inputted on behalf of a GAH across all its users. This value is expressed in consideration terms of the underlying security instrument and shall reflect the total aggregate value that can be undertaken by the GAH for that trading session. This control shall be set for every GAH at the user level. This limit constitutes a trading limit which shall get reinstated at the beginning of every trading session for every GAH.

KEY RATE DURATION

Key rate duration measures how the value of a security or portfolio changes at a specific maturity point along the entirety of the yield curve. When keeping other maturities constant, the key rate duration can be used to measure the sensitivity in a security's price to a 1% change in yield for a specific maturity.

- **The Formula for Key Rate Duration:**

Where:

- P_- = a security's price after a 1% *decrease* in its yield
- P_+ = a security's price after a 1% *increase* in its yield
- P_0 = the security's original price

❑ **Calculating Key Rate Duration**

- As an example, assume that a bond is originally priced at $1,000, and with a 1% increase in yield would be priced at $970, and with a 1% decrease in yield would be priced at $1,040. based on the formula above, the key rate duration for this bond would be:

KRD= ($1040-$970)/ (2*1% * $1000) = $70/$20= 3.5

where:

KRD = Key rate duration

DEBT FACTORING

- Debt factoring is an alternative term to invoice factoring and takes place when accounts receivables, typically in the form of invoices, are raised by a business and passed to a debt factoring company for them to provide a cash advance – up to 100% of the invoices' value.
- The factoring company also takes care of chasing collection of the owed payment on behalf of the client – when the payment is made, the remaining value not initially forwarded is given to the business minus prearranged fees for their service provided.
- The more that you explore our invoice finance product pages, the more that you'll discover that this increasingly popular cash flow solution encompasses a wide range of products – each tailor-made to suit different businesses in different economic situations

- Debt or invoice factoring is ideal for businesses that need help to manage their sales ledger. Alternatively, some firms who’ve spent years developing their in-house credit collection systems prefer to retain control of their sales ledger, meaning that they’ll often lean towards an invoice discounting facility or factoring financiers who allow clients to handle their own credit control (CHOCS).

Discount Factor

- In financial modeling, a discount factor is a decimal number multiplied by a cash flow value to discount it back to its present value. The factor increases over time (meaning the decimal value gets smaller) as the effect of compounding the discount rate builds over time. Practically speaking, it is easier to use the XNPV function in Excel. However, a benefit of manually calculating the discount factor is that you can see what the present value of each individual cash flow is, as opposed to only the total NPV.

Corporate Finance, Financial analysis, Liquidity management, Tax planning and GST

7 marks

- American depository receipt (ADR) is a certificate issued in the united states in lieu of a foreign security
- The original securities are lodged in bank/custodian abroad, and the American depository receipts (ADR) are traded in the US for all intents and purpose as if they were a domestic stock
- An ADR dividend is paid in US dollars, so it provides a way for American investors to buy foreign securities without having to go abroad, and without having to switch in and out of foreign currencies
- ➢ Commercial paper is transferable
- ➢ Three financial statements are:
- Income statement, balance sheet and cash flow statement
- Cash flow statement shows how changes in income statement and balance sheet accounts affect cash and cash equivalents during an accounting period
- ➢ From income statement, one cannot see the net worth of the business

The liquidity ratio indicates the liquidity of a firm and indicates whether or not a firm is capable to repay its short term liabilities

- The current ratio is the relationship between the current assets and the current liabilities. This ratio helps in knowing about the liquidity position of a firm during the course of a year
- The most ideal value for current ratio can be 1.33: 1
- The quick ratio is the ratio between quick current assets and current liabilities. This ratio measures the capacity of the organization to pay off the current liabilities of the urgent nature immediately
- Debt service coverage ratio:

- explains the relationship between the funds available for servicing the long term outside liabilities on the one hand and the amount of interest and installment of long term outside liabilities on the other hand
- is used for judging repayment capacity and fixing the repayment schedules for term loans in banks and financial institutions
- Is calculated as under: (Net profit after interest & tax + Depreciation + Interest on loan)/Annual repayment installments + Interest on loan

- Payback period method:
  - The payback period is the numbers of years it takes to recover the initial cost of the investment
  - The payback period is used s a measure of liquidity
- The net present value (NPV) is calculated by totalling the present values of all the expected incremental cash flows from a project
- The components of financial statements are:
  - Income statement & balance sheet
  - Statement of retained earnings
  - Statement of changes in financial position

Ratios	Is calculated by
First method of maximum permissible	(Current assets- Other assets liabilities)-25% of(Current assets- Other current liabilities)
Second method of maximum permissible	(CA-OCL)-25% of CA
Third method of maximum permissible	(CA-OCL)-CCA-25% of(OCL)
Debt-equity ratio	Debt/Equity
Interest coverage ratio	Profit before tax and interest- Debt interest
Fixed asset coverage ratio	Net fixed asset/Long term debts, secured by fixed assets
Proprietary ratio	Capital or share holders funds/Total tangible assets)*100
Total indebtedness ratio	Total outside liabilities/Tangible net worth
Inventory turnover ratio	Sales/Average stock
Debtor turnover ratio	Sales/Average debtors
Fixed asset turnover ratio	Sales/Fixed assets

Ratios	Is calculated by
Return on assets(ROA)	Net profit after tax / Total assets)*100
Return on capital employed	Net profit/Capital employed)*100
Earning per shares	Net profit after tax and preference shares dividend/Number of ordinary shares
Profit earning ratio	Market value per shares/Earning per share
Net worth	Share capital+ Reserve and surplus
Current ratio	Current assets/Current liabilities

TAX PLANNING

- Tax planning:
- is legitimate provided it is within the framework of law
- connotes the exercise carried out by the taxpayer to meet his tax obligations in proper, systematic and orderly manner availing all permissible exemptions, deductions and reliefs available under the statue as may be applicable to his case
- does not necessarily mean reduction in tax liability but it also aimed at avoiding controversies and consequential litigations

❑ Tax evasion have the characteristics of:

- Deliberately or consciously not furnishing material particulars
- Furnishing inaccurate or false particulars
- Defrauding the state by violating any of the legal provisions

❑ Tax management means:

- Filing of various tax returns in time
- Adherence to the compliance of the applicable provisions of law
- Avoiding of levy of interest and penalties

❑ Tax planning includes direct as well indirect taxes and is a dynamic concept

❑ Tax planning should be done before the income accrues or arises

- The tax planning measures may be initiated while :
  - Deciding the form of the organization according to its size and requirement
  - Deciding the location of work place, whether any tax heaven/tax rebate is available
  - Planning to avail the exemptions/rebate available in the tax law
- In the case of McDowell & Co. v. CTO (1985) 154 ITR 148, the Hon'ble supreme court opined that "tax planning may be legitimate provided it is within the framework of the law. Colourable devices cannot be part of tax planning and it is wrong to encourage or entertain the belief that it is honourable to avoid payment of tax by resorting to dubious methods
- Tax evasion is a term that is difficult to define but which is generally used to mean illegal arrangements where liability to tax is hidden or ignored, i.e. the taxpayer pays less tax than he is legally obligated to pay by hiding income or information from the tax authorities:
- In Tax evasion a person tries to reduce his tax liability by deliberately suppressing the income or by inflating the expenditure showing the income lower than the actual income and resorting to various types of deliberate manipulations
- Tax avoidance is an arrangement of taxpayer's affairs that is intended to reduce his liability and that although the arrangement could be strictly legal it is usually in contradiction with the intention of law it purports to follow .
- The line of demarcation between tax avoidance and tax management is very thin and blurred

- Tax avoidance includes:
  - Use of colorable devices
  - Defeating the genuine spirit of law
  - mis-representation or twisting of facts
- Tax planning is arrangement of a person business or private affairs in order to minimize tax liability
- An example of Tax planning is doing business in an industrially backward state which entitles an assessee to claim a deduction under section 80-IB of the income tax act, 1961
- Tax management involves the compliance of law regularly and timely as well as the arrangement of the affairs of the business in such manner that it reduces the tax liability.
- Successful tax planning requires:
  - Upto date knowledge of tax laws
  - Planning within the framework of law
  - Disclosure and furnishing of information to income tax department
- The areas of corporate tax planning:
  - Location aspects
  - Financial management
  - Nature of business

CENTRAL GOODS AND SERVICE TAX ACT, 2017

- ❑ The concept of the GST was the outcome of Kelkar Committee
- ❑ The state taxes which have been subsumed under the GST are:
- Entertainment tax
- Luxury tax
- Taxes on advertisement and many more indirect taxes
- ❑ The power to levy GST is conferred by the constitution of India under article 246A
- ❑ The central goods and services tax act, 2017 (CGST) received the assent of the president on 12th April, 2017
- ❑ CGST act has 174 sections
- ❑ CGST act has three schedules
- ❑ The CGST act extends to whole of India
- ❑ "Address of delivery" means the address of the recipient of goods or services or both indicated on the tax invoice issued by a registered person for delivery of such goods or services or both
- ❑ The aggregate turnover does not include:
- Central tax and state tax
- Union territory tax
- Integrated tax and cess
- ❑ "Aggregate turnover" means the aggregate values of all taxable supplies (excluding the value of inward supplies on which tax is payable by a person on reverse charge

Basis), exempt supplies, exports of goods or services or both and inter state supplies of persons having the same permanent account number, to be computed on all India basis but excludes central tax, state tax, union territory tax, integrated tax and cess

- "Assessment" does not include assessment by the appellate authority
- A club which provides facilities or benefits to its members, will be treated as business, if:
  - The club is providing such facilities by charging any other consideration
  - The club is providing such facilities for a subscription
- The definition of the word "Business" given under the CGST act is Inclusive definition
- Where goods are packed and transported with insurance, the supply of goods, packing materials, transport and insurance is a composite supply
- "Council" means the goods and services tax council established under article 279A of the constitution
- "Input service" means any service used or intended to be used by a supplier in the course or furtherance of business
- "Input tax credit" means the credit of input tax
- "Job work" means Any treatment or process undertaken by a person on goods belonging to another registered person

- “Principal place of business” means the place of business specified as the principal place of business in the certificate of registration
- “Tax period” means the period for which the return is required to be furnished
- The expression ”Supply” includes:
  - All forms of supply of goods or services or both such as sale, transfer, barter, exchange, licence, rental, lease or disposal made or agreed to be made for a consideration by a person in the course or furtherance of business
  - Import of services for a consideration whether or not in the course or furtherance of business
  - The activities specified in schedule I, made or agreed to be made without a consideration and the activities to be treated as supply of goods or supply of services as referred to in scheduled II
- Schedule I of the CGST act specifies about the activities to be treated as supply even if made without consideration
- Supply of goods by an agent to his principal made without any consideration, where the agent undertakes to receive such goods on behalf of the principal shall be treated as supply
- Any transfer of the title in goods is supply of goods

- Actionable claims shall be treated neither as a supply of goods nor a supply of services
- Activities or transactions which shall be treated neither as a supply of goods nor a supply of services has been described in Schedule III
- A supply comprising two or more supplies, one of which is a principal supply, shall be treated as Composite supply
- How to differentiate between the composite and mixed supply:
  - Existence of principal supply as well as the bundling of the products
- A supply comprising two or more supplies shall be treated as a Mixed supply
- On intra-state supply, CGST & SGST is to be levied
- Activities to be treated as supply even if made without consideration in contained in schedule I
- The gifts not exceeding 50000 rupees in value in a financial year by an employer to an employee shall not be treated as supply of goods and services or both

- Services by an employees to the employer in the course of or in relation to his employment is not a taxable service:
- The tax liability on a mixed supply comprising two or more supplies shall be taxed as per the item which attracts the highest rate of tax
- The following supplies are subject to reverse charge mechanism:
  - Where supplies are made by the unregistered person
  - On the notified categories of goods or service or both
- The maximum rate prescribed under section 9 of the CGST act, 2017:
  - Not exceeding 20%
- There shall be levied a tax called the central goods and services tax on all intra-state supplies of goods or services or both, except on the supply of alcoholic liquor for human consumption
- The rate of tax under the CGST shall be notified by the central government as per the recommendation of the GST council
- The GST council consist of:
  - Union finance minister
  - The union minister of state, in-charge of revenue, Min. of finance
  - The minister in-charge of finance or taxation or any other minister nominated by each state government
- Who can opt for the composition scheme:

- A registered person, whose aggregate turnover in the preceding financial year did not exceed 50 lakh rupees

- ❑ In case of composition scheme government may, by notification, increases the limit to such higher amount, not exceeding 1 crore and 50 lakh rupees, as may be recommended by the council
- ❑ A registered dealer who is a manufacturer, opted for the composition scheme, at what rate under CGST he will pay- one percent
- ❑ A registered dealer who is engaged in making supplies referred to in clause(b) of paragraph 6 of schedule II, and, opted for the composition scheme, at what rate under CGST he will pay- two and half per cent
- ❑ A registered dealer who is engaged in making other supplies opted for the composition scheme, at what rate under CGST he will pay -half per cent
- ❑ Who can opt for the composition scheme:

- If he is not engaged in the supply of services other than supplies referred to in clause (B) of paragraph 6 of schedule II
- If he is not engaged in making any supply of goods which are not leviable to tax under this act
- If he is not engaged in making any inter-state outward supplies of goods

- ❑ A registered person under composition scheme cannot claim input tax credit:

- A registered dealer who have opted for composition scheme cannot charge tax from his customers
- A taxable person to whom the provision of section 10(1) apply shall not be entitled to any credit of input tax
- Any person who has been granted registration on a provisional basis and who opts to pay tax under section 10, shall electronically file an intimation in form GST CMP-01
- The registered person who intends to withdraw from the composition scheme shall, before the date of such withdrawal, file an application in FORM GST CM-04, duly signed or verified through electronic verification code, electronically on the common portal
- GST CMP-01 form is to be used for intimation to pay tax under section 10
- The liability to pay tax goods shall arise at the time of supply
- Time of supply of goods: Earliest of the following:
  - The date of issue of invoice by the supplier
  - The last date on which he is required, under sub-section (1) of section 31, to issue the invoice with respect to the supply
  - The date on which the supplier receives the payment with respect to the supply
- The liability to pay tax on services shall arise at the time of supply of service

- The time of supply of service: Earliest of the following:
  - The date of issue of invoicing by the supplier, if the invoice is issued within the period prescribed under sub-section (2) of section 31 or the date of receipt of payment, whichever is earlier
  - The date of provision of service, if the invoice is not issued within the period prescribed under sub-section(2) of section 31 or the date of receipt of payment, whichever is earlier
  - The date on which the recipient shows the receipt of services in his books of account, in a case where the provisions of clause(a) or clause(b) do not apply
- Time of supply in case of supplies in respect of which tax is paid or liable to be paid on reverse charger basis: Earliest of the following:
  - The date of payment as entered in the books of account of the recipient
  - The date on which the payment is debited in his bank account, whichever is earlier
  - The date immediately following 60 days from the date of issue of invoice or any other document, by whatever name called, in lieu thereof by the supplier
- The time of supply, where there is a change in the rate of tax in respect of goods or services or both, have been supplied before the change in rate of tax and the invoice for the same has been issued and the payment is also received after the change in rate of tax shall be the earliest of:
  - The time of supply shall be the date of receipt of payment
  - The date of issue of invoice

- The value of supply of goods or service shall be the amount charged from the customer i.e. Transaction value
- Where the recipient is eligible for full input tax credit, the value declared in the invoice shall be deemed to be the open market value of the goods or services
- Residual method for determination of value of supply of goods or services or both is contained in Rule 31
- The value of supply shall not include:
  - Any discount which is given before or at the time of the supply if such discount has been duly recorded in the invoice issued in respect of such supply
- The conditions for availing of the input tax credit
  - He is in possession of a tax invoice or debit note issued by a supplier registered under this act
  - He has received the goods or services or both
- Input means any goods other than capital goods used or intended to be used by a supplier in the course or furtherance of business
- Where the goods or services or both are used by the registered person partly for the purpose of any business and partly for other purpose:
  - The amount of credit shall be restricted to so much of the input tax as is attributable to the purposes of his business

- In case of change in the constitution of registered taxable person, the unutilized input tax credit can be transferred provided there is a change in constitution of the business with the specific provision of transfer of liabilities
- GST ITC 01 form is to be used for declaration for claim of input tax credit under section 18(1)
- The principal shall be entitled to take credit of input tax on inputs even if the inputs are directly sent to a job worker for job work without being first brought to his place of business
- Where the inputs are sent directly to a job worker, the period of one year shall be counted from the date of receipt of inputs by the job worker
- The expression "special category states" shall mean the states are specified in Constitution of India under article 279A(4)(g)
- Every supplier shall be liable to be registered under this act in the state or union territory, other than special category states, from where he makes a taxable supply of goods or services or both, if his aggregate turnover in a financial year exceeds 40 lakh rupees in case of goods and 20 lakh rupees in case of services.
- Where such person makes taxable supplies of goods or services or both from any of the special categories states, he shall be liable to be registered if his aggregate turnover in a financial year exceeds 10 lakh rupees

- Within 30 days from the date on which he becomes liable to registration
- Person making intra state supply and the turnover is below the threshold limit of Rs 20 lakh (other than the special category states) not liable for registration under the GST
- PAN document is compulsory for obtaining registration under the GST
- GST REG 01 form is to be used for the registration purpose
- An electronic commerce operator, whose turnover is below the threshold limit prescribed under the act, is required to obtain compulsory registration
- The validity of the registration certificate once issued is for Perpetual
- The certificate of registration issued to a casual taxable person or a non- resident taxable person shall be valid for the period specified in the application for registration or 90 days from the effective date of registration, whichever is earlier
- A certificate of registration issued in FORM GST REG-06
- A non-resident taxable person shall electronically submit an application, in FORM GST REG-09, at least five days prior to the commencement of business
- A registered person seeking cancellation of his registration shall electronically submit an application in FORM GST REG-16
- A tax invoice should be issued by a registered dealer supplying taxable goods, where the supply involves movement of goods:

- The tax invoice has to issued before the time of removal of such goods
- The tax invoice has to issued at the time of removal of such goods

❑ The central government on the recommendations of the council many specify the categories of good or supplies in respect of which a tax invoice shall be issued, within such time and in such manner:

❑ When a tax invoice should be issued by a registered dealer supplying taxable goods, where the supply do not involves movement of goods:

- The tax invoice has to issued before the goods are delivered
- The tax invoice has to be issued at the time of the goods are delivered
- The tax invoice has to be issued when the goods are made available to the recipient

❑ A registered person supplying exempted goods or services or both or paying tax under the provision of section 10 shall issue a bill of supply

❑ A person who is not a registered person cannot collect tax on supply of goods or services or both

❑ No reduction in output tax liability of the supplier shall be permitted, if the incidence of tax and interest on such supply has been passed on to any other person

❑ Every registered person shall keep and maintain the books and records at his principal place of business as mentioned in the certificate of registration

- Where more than one place of business are specified in the certificate of registration, the books and other records shall be kept where the accounts relating to each place of business are kept
- Every registered persons who is required to keep and maintain books of account or other records shall retain them until the expiry of seventy two months from the due date of furnishing of annual return for the year pertaining to such accounts & records
- Every registered person whose turnover during a financial year exceeds the prescribed limits of Rs. Two crore, shall get his accounts audited by a CA
- Details of outwards supplies of goods or services is to be filed in GSTR-1 and its due date of filing is 10th of the succeeding month
- Details of inward supplies of goods or service is to be filed in GSTR-2 and its due date of filing is 15th of the succeeding month
- Monthly return after finalization of outward supplies and inward supplies, is to be filed in GSTR-3 and its due date of filing is 20th of the succeeding month
- Return under composition scheme is to be filed in GSTR-4 and the due date of filing is 18th of the month succeeding the quarter
- Annual return is to be filed in GSTR_9 and its due date is 31st december of subsequent year
- In the case of supply of goods, the invoice shall be prepared in triplicate, the triplicate copy being marked as triplicate for supplier

- In the case of the supply of services, the duplicate copy is meant for Supplier
- The responsibility for correctness of any particulars furnished in the return or other details filed by the goods and services tax practitioners shall continue to rest with:
  - The registered person on whose behalf such return and details are furnished
- A person paying a tax under section 10 shall furnish the annual return is FORM GSTR-7
- Every electronic commerce operator required to collect tax at source under section 52 shall furnish annual statement in FORM GSTR-9B
- The certificate to the goods and services tax practitioner shall be issued in FORM GSTR PCT-02
- Every deposit made towards tax, interest, penalty, fee or any other amount by a person by internet banking or by using credit or debit cards or national electronic fund transfer or real time gross settlement or by such other mode and subject to such conditions and restrictions as may be prescribed, shall be credited to The electronic cash ledger
- The amount available in the electronic credit ledger may be used for making any payment towards output tax under the CGST Act or IGST Act
- All liabilities of a taxable person under the CGST Act shall be recorded and maintained in an electronic liability register

- Every person who is liable to pay tax in accordance with the provisions of this act or the rules made there under, but fails to pay the tax or any part thereof to the government within the period prescribed, shall for the period for which the tax or any part thereof remains unpaid, pay, on his own, interest at such rate not exceeding 18%
- A taxable person who makes an excess claim of input credit shall pay interest on such excess claim at such rate not exceeding 24% , as may be notified by the government on the recommendations of the council
- Four per cent rate of tax deduction at source
- The provision of TDS is applicable where the total value of such supply, under a contract exceeds Rs 250000
- The deductor is required to furnish to the deductee a certificate, after deducting the tax at source, within 5 days of crediting the amount so deducted to the government
- The electronic liability register specified under section 49(7) shall be maintained in FORM GST PMT-01
- In the case of inter-state supplies, where the value of a supply does not exceed Rs 250000, a consolidated revised invoice may be issued separately in respect of all the recipients located in a state, who are not registered under the act
- In case of transportation of goods without issue of invoice, the delivery challan shall be prepared in Triplicate

- Any person claiming refund of any tax and interest, if any, paid on tax or any other amount paid by him, may make an application before the expiry of two years from the relevant date
- The proper officer shall issue the refund order within 60 days from the date of receipt of application complete in all respects
- The shipping bill filed by an exporter of goods shall be an application for refund of integrated tax paid on the goods exported out of india
- If any tax ordered to be refunded under section 54(5) to any applicant is not refunded within 60 days from the date of receipt of application under subsection(1) of that section, interest at such rate not exceeding 6% shall be payable in respect of such refund from the date immediately after the expiry of 60 days from the date of receipt of application under the said sub-section till the date of refund of such tax
- Where a taxable person fails to obtain registration even though liable to do so or whose registration have been cancelled under sub-section (2) of section 29 but who was liable to pay tax, the proper officer may proceed to assess the tax liability of such taxable person to the best of his judgment for the relevant tax periods and issue an assessment order within a period of 5 years from the date specified under section 44 for furnishing of the annual return for the financial year to which the tax not paid relates
- Who may undertake audit of any registered person:

- The commissioner of CGST
- The commissioner of SGST
- Any officer authorised by the commissioner

- The special audit of a registered persons can be conducted by a CA
- On conclusion of the special audit, the registered person shall be informed of the findings of the special audit in FORM GST ADT-04
- Who can inspect any places of business of the taxable persons engaged in the business of transporting goods or the owner or the operator of warehouse or godown or any other place:
- Not below the rank of joint commissioner
- The power to arrest a person has been prescribed by section 69
- Where the goods have not been transported after generation of the e-way bill, it may be cancelled electronically on the common portal, within 24 hours of generation of the e-way bill
- The part-B of the e-way bill can be updated 3 time as one wants for movement of goods to the destination
- Where any goods, documents, books or things are liable for seizure under section 67(2), the proper officer or an authorised officer shall make an order of seizure in FORM GST INS-02
- Penalty under section 73(9) shall be payable where any amount of self-assessed tax or any amount collected as tax has not been paid within a period of 30 days from the date of payment of such tax
- Where any order is required to be issued in pursuance of the direction of the appellate authority or appellate tribunal or a court, such order shall be issued within 2 years from the date of communication of the said direction

- A transaction considered by the tax payer as intra-state supply, but which is subsequently held to be an inter- state supply, shall be refunded the amount of taxes so paid
- On an application filed by a taxable person, the commissioner may, extend the time for payment or allow payment of any amount due under the CGST act, other than the amount due as per the liability self-assessed in any return, by such person in monthly instalments not exceeding 24 months
- The maximum number of monthly instalments permissible under Section 80 is 24 months
- Section 83 deals with the provisional attachment of any property belonging to the taxable person, for the purpose of protecting the interest of the government revenue
- A summary of show cause notice shall be served by the proper officer in FORM GST DRC-01
- Where the sale of goods is made through a process of auction, including e-auction, form GST DRC-10 shall be used as a notice clearly indicating the goods to be sold and the purpose of sale:
- The agent and his principal shall be, jointly and severally liable to pay tax where an agent supplies or receives any taxable goods on behalf of his principal

- Where any company is being would up every person appointed as receiver of any assets of a company shall, within 30 days after his appointment, give intimation of his appointment to the commissioner
- Where any partner retires from the firm, he or the firm, shall intimate the date of retirement of the said partner to the commissioner by a notice and such intimation is to be given within 1 month from the date of retirement
- The authority shall pronounce its advance ruling in writing within 90 days from the date of receipt of application
- For filing an appeal against the advance ruling by the concerned officer of the jurisdictional offer no fee shall be payable by the said officer for filing the appeal.
- Section 107 of the CGST act deals with the appeals to the GSTAT
- Section 108 of the CGST act deals with the powers of the Revisional authority
- The national bench of the GSTAT shall be situated at New delhi
- Qualification for being appointed as president
- He has been a judge of the Supreme Court
- He has been the Chief Justice of a High Court
- He has been a judge of High Court for a period not less than 5 years

- The GSTAT may admit an appeal within 3 months after the expiry of the initial period as referred to in section 112(1)
- the GSTAT can grant adjournments Not more than three times .
- Section 117 deals with the matter relating to the appeal before the High Court
- An appeal before the High Court shall be filed within a period of 180 days from the date on which the order appealed against is received by the aggrieved person
- An appeal to the appellate authority under section 107(1) shall be filed in FORM GST APL-01
- An application to the appellate authority under section 107(2) shall be made in FORM GST APL-03
- Any person aggrieved by any decision or order passed under CGST/SGST/UTGST may appeal within 3 months from the date on which the said decisions or order is communicated to such persons
- An appeal to the High Court under section 117(1) shall filed in FORM GST APL-08
- If any person who is required to furnish any information or return as required under section 151, without reasonable cause fails to furnish or wilfully furnishes false information, he shall be punishable with a fine which may extend to Rs 10000
- A breach shall be considered a ‘minor breach’ if the amount of tax involved is less than Rs. 5000

- A person shall not be prosecuted for any offence under section 132 except with the previous sanction of the commissioner
- No court shall take cognizance of any offence punishable under the CGST act/rules, except with the previous sanction of the commissioner, and no court inferior to that of a magistrate of the first class , shall try any such offence
- IGST will be applicable where there is inter-state supply
- 40% is the maximum ceiling prescribed for the tax rate under the IGST
- The following shall be treated as a supply of goods in the course of inter-state trade or commerce:
- Where supplier and the place of supply are in two different states
- Where supplier and the place of supply are in two different union territories
- Where supplier and the place of supply are in a state and a union territory
- "Zero rated supply" means supplies of goods or services or both:
- Export of goods or services or both
- Supply of goods or services or both to a special economic zone developer or A special economic zone unit