

## USE OF SPREADSHEET IN BUSINESS APPLICATIONS

Spreadsheet can be used for a number of purposes in business, some of them are Payroll Accounting, Asset Management and Loan Repayment Schedule.

### Payroll Accounting

Payroll is the statement prepared by every organisation to show the detailed salary calculation.

#### Components of Payroll

1. **Basic Pay (BP):** It is the pay in the pay scale plus Grade Pay, but doesn't include special pay.
2. **Grade Pay (GP):** It is the pay to be added to Basic Pay according to the designation of the employee. Eg. An amount added to the BP on completing 15 years of service.
3. **Dearness Pay (DP):** It is the portion of Dearness Allowance which has been declared and deemed to have been merged with Basic Pay.
4. **Dearness Allowance (DA):** It is the compensation for reduction in the purchasing power of money due to price rise. It is granted by Govt. periodically as a percentage of Basic Pay + Dearness Pay.
5. **House Rent Allowance (HRA):** It is an amount paid to facilitate employee in acquiring rental accommodation.
6. **Transport Allowance (TA / TRA) :** Transport allowance granted to employee for the purpose of travelling between place of duty and residence.
7. **Other Earnings (OE):** It includes Education Allowance, Medical Allowance, Washing Allowance etc.

#### Deductions :-

1. **Professional Tax (PT):** It is a tax levied by the State on the income earned by way of profession. Normally it is collected by the Local Self Government.
2. **Provident Fund (PF):** It is a statutory deduction as a part of social security. It is deducted as certain percentage of Basic Pay + Dearness Pay.
3. **Tax Deductions at Source (TDS):** It is a statutory deduction. It is the monthly instalment of total Income Tax payable during the year.
4. **Recovery of Loan Instalment:** Deduction towards loan provided by the employer to the employee.
5. **Other Deductions :** Any other deductions made towards 'Advance against Salary', 'Food Grains Advance', 'Festival Advance' etc.

#### Template Design in Spreadsheet

Business firms normally use designed templates of spreadsheets for payroll accounting. It is a predefined spreadsheet having cells or columns with integrated formulae and customised formats.

Templates are very useful for repetitive tasks where we can save a lot of time and also it provides accurate output.

## Asset Accounting

Accounting of assets covers the complete life cycle of an asset. It involves computation of depreciation, maintenance of asset register etc. We are familiar with the calculation of depreciation in manual accounting.

Depreciation should be charged on fixed assets so as to recoup the amount spent on fixed assets. Depreciation is charged on fixed assets as per the policy of the organization. Normally there are two methods for charging depreciation; they are Straight Line Method and Written Down Value method.

### Straight Line Method

Under this method fixed amount of depreciation is charged on asset every year. The following is the formula for computation of depreciation under this method.

**Syntax:       =SLN(Cost, Salvage, Life)**

- **Cost** – Purchase Value + Other Expenses such as Transportation charges, installation charges, Pre-operating expenses etc.
- **Salvage** – Scrap value after the life of asset.
- **Life** – It indicates the life period of asset.

Eg. An asset purchased for Rs. 9,000 and its installation cost is Rs. 1,000. The useful life of the asset is 10 years, at the end of which it will bring a salvage value of Rs.2,000.

These details can be applied in SLN Function to calculate Straight Line Depreciation as follows:-

=SLN(10000,2000,10)       The result is Rs.800

### Written Down Value Method (WDV)

Written Down Value method uses the current book value as the base for calculating depreciation for the next period. It is also called Reducing Balance Method or Declining Balance method or Diminishing Balance method. In spreadsheet the DB() function is used to calculate depreciation under Written Down Value method.

**Syntax: =DB(cost, salvage, life, period, months)**

- **Cost** – The original cost of the asset.
- **Salvage** – The salvage value after the life period.
- **Life** – Life period of asset.
- **Period** – The year for which the depreciation is calculated, say 1<sup>st</sup> year , 5<sup>th</sup> year etc.
- **Months** – (This is Optional) It is the number of months in the first year, it is applicable only if the asset is purchased or put to use in the middle of the year (the asset is used only for a part of the year). If this parameter is omitted, the DB function will assume that there are 12 months in 1<sup>st</sup> year.

#### Example-1

An asset that costs Rs. 1,00,000. The salvage value is Rs.8,000. It has an effective life of 10 years. The depreciation for the first year, assuming that there are 12 months in first year (i.e.; the asset was purchased on the opening day of the financial year) is calculated by the following formula:

=DB(100000,8000,10,1,12)

### Example-2

An asset that costs Rs. 50,000. The salvage value is Rs.2,000. It has an effective life of 8 years. The depreciation for the second year, assuming that there are 12 months in first year (i.e.; the asset was purchased on the opening day of the financial year) is calculated by the following formula:

$$=DB(50000,2000,8,2,12)$$

### Example-3

An asset that costs Rs. 20,000. The salvage value is Rs.1000. It has an effective life of 5 years. The depreciation for the third year, assuming that there are 4 months in first year (i.e.; the asset was purchased after 8 months) is calculated by the following formula:

$$=DB(20000,1000,5,3,4)$$

## **Loan Repayment Schedule**

Loan is an amount borrowed for a specified period at a specified rate of interest. It is repaid through a number of periodic instalments (normally in monthly instalments) along with interest over the loan repayment period.

Computation of repayment instalments is a tedious task. But the spreadsheet built in PMT function can be used to compute monthly instalments of repayments of loan.

### **Equated Monthly Instalment (EMI) Calculation**

EMI is a fixed amount payable by the borrower to the lender on each calendar month. It is determined by certain factors like Principal Amount (actual amount of loan), Interest Rate, Period of Loan etc.

**Syntax:**    **=PMT( rate, nper, pv, [fv], [type] )**

- **Rate** - Rate of interest eg: 10% or 0.10
- **Nper** - Number of Payments (Number of periods)
- **PV** - Principal Amount (Present Value)
- **FV** - Future Value (Usually 0 and it is optional)
- **Type** - 1 for payment at the beginning, 0 for payment at the end)

Eg 1: A bank has given an Housing Loan of Rs.5,00,000 to a customer on 1<sup>st</sup> April 2005. The loan carries interest @ 10% p.a and the loan is to be repaid over 10 years. Here the monthly instalments are calculated by the following formula assuming that the instalments are paid at the end of each month.

$$=PMT (10\%/12,10*12,500000,0,0) = \text{Rs. -6607.54}$$

Here the interest rate is divided by 12 to convert into monthly rate and the year is multiplied by 12 to get number of monthly payments. The monthly instalment is shown as minus figure since it is an outflow of cash.

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