

# ADVANCED BANK MANAGEMENT IMPORTANT FORMULA FOR CAIIB EXAM

## CAIIB ABM Formula



## Advanced Bank Management Important Formula for CAIIB Exam

### Unit 02 - Supply and Demand

1. CR = CA : CL
2. Net Worth = CA - CL
3. DER = TL/TNW or debt/equity or TL/equity
4. Price Elasticity of Supply = (% change in quantity supplied)/(% change in price)

### Unit 03 - Money Supply & Inflation

5. Narrow Money ( M1)= Currency with public + Demand deposits with banking system + ' other deposits with RBI
6. M2=M1+ Savings deposits of post office savings banks
7. M3= M1+ Time deposits with banking system
8. M4= M3+ All deposits with post office savings banks (Excluding National savings certificate )
9. Inflation = ( Price index in current year- Price index in base year)\*100

### Unit 9 - GDP Concepts

10. GDP = C+I+G+(X-M)
11. GNP = GDP+ NR (net income from assets abroad(net income receipts ))
12. GDP at factor cost = GDP at market price - (Indirect taxes- Subsidies)
13. Total revenue receipts = Net tax revenue + Total Non-Tax revenue

### Unit 12 - Time Value of Money

14. Present value(PV)= Discount factor × C n
15. Cash flow for n period = Cn= PV(1+r)<sup>n</sup> where r = interest rate
16. Discount factor = 1/(1+r)<sup>n</sup> Where r = interest rate , n = period in year
17. Effective interest rate (EIR)= (1+r/n)<sup>n</sup> - 1
18. Current yield on coupon = (coupon or nominal yield)× 100 / (current market price of coupon)
19. Rate of return = (coupon+ price change)/investment
20. PV = P / R \* [(1+R)<sup>T</sup> - 1]/(1+R)<sup>T</sup>
21. PV = P / (1+R)<sup>T</sup>
22. FV = P \* (1 + R)<sup>T</sup>
23. FV = P\*(1-R)<sup>T</sup>
24. FV = P / R \* [(1+R)<sup>T</sup> - 1]
25. FV = P / R \* [(1+R)<sup>T</sup> - 1] \* (1+R)

26.  $EMI = P * R * [(1+R)^T / (1+R)^T - 1]$
27. Net Present Value =  $-C_0 + C_1 / (1 + r)$
28. Future expected value of a present cash flow =  $Cash\ Flow * (1 + r)^t$
29. Present value of a simple future cash flow =  $Cash\ Flow / (1 + r)^t$
30. The Discount Factor =  $1 / (1 + r)^t$
31. Notation used internationally for PV of an annuity is  $PV(A, r, n)$
32. Notation used internationally for FV of an annuity is  $FV(A, r, n)$
33. The effective annual rate =  $(1 + r)^t - 1$  or  $(1 + (r / N))^N - 1$ , N = Number of times compounding in a year
34. PV of end of period Annuity =  $A \{ (1 - (1 / (1+r))^n) / r$

### **Unit 13 - Sampling method**

35. If S is the sample space & E is the even of occurrence  
Then Probability of occurrence of even E for n time =  $P(E) = n(E)/n(S)$

### **Unit 14 - Co-efficient of co-relation:**

36. If x and Y are the two variables then correlation of coefficient 'r'  
 $r = cov\{(x,y) / \Delta x \Delta y\}$
37. Equation of estimating of straight line  $\hat{Y} = a + bx$   
Where  $\hat{Y}$  = estimating value of dependent variable  
x = is an independent variable  
a = y intercept when x=0  
b = the slop of trend line

### **Unit 17 - Bond Investment**

38.  $YTM = [ C + (A - P) / n ] \times 100 / (A + P) / 2$  Where C- Coupon  
A- Face value/ Maturity value of bond  
P- Price paid for bond  
n – term to maturity
39. conversely to find out the yield from a discounted instrument, the following formula can be derived from the above one  
 $r = (F - D) / D \times 365 / n \times 100$   
Where D = Discounted value of the instrument  
F = Maturity value  
r = Effective rate of interest per annum  
n = Tenure of the instrument (in days)
40. Yield on discounted instruments:- The issue price of a discounted instrument can be calculated by using formula  $D = F / 1 + \{ (r \times n) / 36500 \}$   
Where D = Discounted value of the instrument  
F = Maturity Value  
r = Effective rate of return per annum

$n$  = Tenure of the investment in days.

41. When you invest in a bond, you receive a regular coupon payment. As bond prices change, you may also make a capital gain or loss. The Rate of Return can be calculated using  $ROR = (\text{Coupon income} + \text{Price change}) \div \text{Investment}$

42. Zero coupon bond is a long term bond that pays no interest. This bond is sold at discount. This can be calculated by using formula  $ZC = FV / (1+r)^n$

Where FV = Face value of bond

$r$  = return required

$n$  = Maturity period

43. Future Value of an annuity(End of period) =  $A/r \times [(1+r)^n - 1]$

44. Present Value of an annuity ( End of period) =  $A/r \times [(1+r)^n - 1] / (1+r)^n$

45. FV ( at the beginning ) =  $A/r \times (1+r) [(1+r)^n - 1]$

46.  $\propto$  Value of Bond = PV( Coupon) + PV( Face value )

$\propto$  PV( A, r, n) + PV(Face value

47. Standard error of the mean =  $\sigma / \sqrt{n}$

48. PV of perpetuity =  $A/r$

Where A = Annuity

$r$  = interest rate

49. FV of annuity =  $A/r \times \{(1+r)^n - 1\}$

50. Bond Price =  $(1/(1+R)^t) \{ (\text{coupon} \times ((1+R)^t - 1) / R) + \text{Face Value} \}$

### **Unit -18 - Linear Programming**

51. Break Even Analysis =  $F / (1 - VC / S)$

F = Fixed costs, VC = Total variable operating costs & S = Total sales revenue

52. Break Even Margin or Margin of Safety =  $\text{Sales} - \text{Break Even Point} / \text{Sales}$ .

53. Cash Break Even =  $F - N / P - R$  or  $F - N / 1 - (VC / S)$

54. BEP = Fixed Costs / Contribution per unit.

### **Unit 27 - Ratio Analysis - Analysis of Financial Statements**

55. Raw material Turnover Ratio =  $\text{Cost of RM used} / \text{Average stock of R}$

56. SIP Turnover =  $\text{Cost of Goods manufactured} / \text{Average stock of SIP}$

57. Debt Collection period =  $\text{No. days or months or Weeks in a year} / \text{Debt Turnover Ratio}$ .

58. Average Payment Period =  $\text{No. days or months or Weeks in a year} / \text{Creditors Turnover Ratio}$ .

59. Inventory Turnover Ratio =  $\text{Cost of Goods Sold} / \text{Average Inventory}$ .

60. Debtors Turnover Ratio =  $\text{Net Credit Sales} / \text{Average Debtors}$ .

61. Creditors Turnover Ratio =  $\text{Net Credit Purchases} / \text{Average Credits}$ .

62. Defensive Interval Ratio =  $\text{Liquid Assets} / \text{Projected Daily Cash Requirement}$

63. Projected daily cash requirement = Projected operating cash expenses / 365.
64. Debt Equity Ratio = Long Term Debt / Equity.
65. Debt Equity Ratio = Total outside Liability / Tangible Net Worth.
66. Debt to Total Capital Ratio = Total Debts or Total Assets / (Permanent Capital + Current Liabilities)
67. Interest Coverage Ratio = EBIT / Interest.
68. Dividend Coverage Ratio = N. P. after Interest & Tax / Preferential dividend
69. Gross Profit Margin = Gross Profit / Net Sales \* 100
70. Net Profit Margin = Net Profit / Net Sales \* 100
71. Cost of Goods Sold Ratio = Cost of Goods Sold / Net Sales \* 100.
72. Operating Profit Ratio = Earnings Before Interest Tax / Net Sales \* 100
73. Expenses Ratio or Operating Ratio = Expenses / Net Sales \* 100
74. Net Profit Ratio = Net Profit After interest and Tax / Net Sales \* 100
75. Operating Expenses Ratio = (Administrative + Selling expenses) / Net Sales \* 100
76. Administrative Expenses Ratio = (Administrative Expenses / Net Sales) \* 100
77. Selling Expenses Ratio = (Selling Expenses / Net Sales) \* 100
78. Financial Expenses Ratio = (Financial Expenses / Net Sales) \* 100
79. Dividend Pay Out Ratio = Dividend per Equity Share / Earnings per Equity Share.
80. Dividend Pay Out Ratio = Dividend paid to Equity Shareholders / Net Profit available for Equity Share Holders.
81. Price Earning Ratio = Market Price per equity Share / Earning per Share.

### **Unit 31 - Credit control and monitoring**

82. Net worth = A) Excess of assets over liabilities (for individual)  
 B) Capitals + Reserve (for company)
83. Networking Capital = A) Total of current asset - Total of current liability  
 B) Difference b/w long term source and long term use
84. Debt Equity ratio (DER) = A) Term loan / Tangible net worth  
 B) Long term debt / Share holders equity  
 C) Total liability / Share holders equity
85. DSCR = A) Total cash flow before interest / Total repayment obligation  
 B) (Net profit + Depreciation + Interest on long term liability) / (Instalment + interest on long term liability)
86. Return on asset = Operating profit / (Total asset - intangible asset)
87. ICR (Interest coverage ratio) = EBIT / Interest on long term borrowings,  
 Where EBIT = Earning before interest and taxes

### **Unit - 28 Working Capital Finance**

88. Total outside liabilities = current liability + long term liability
89. Total tangible asset = CA + Fixed asset + other non current asset

90. Tangible net worth = Net worth – intangible asset
91. Current Ratio = CA:CL
92. Quick Ratio = ( CA – Inventories )/ CL
93. Quick asset = CA – Inventory
94. Heads come under current asset→
- ▼ Inventory
  - ▼ Preliminary Expenses/prepaid expenses
  - ▼ Cash and bank balance
  - ▼ Sundry debtors/Bill receivables
  - ▼ Investment in Quoted securities such as Govt securities , FDR
- ☞ Heads that come under liabilities
- ▼ Sundry creditors/Bills payable
  - ▼ Installment of term loan payable in a year
  - ▼ preferential capital
  - ▼ Provisions to paid in a year
  - ▼ WCTL( Working capital term loan )
95. Return on capital employed (ROCE)=( Net profit after tax × 100)/ total capital employed

### **Unit 31 – Credit Control and Monitoring**

96. Return on Assets = Net Profit After Tax / Total Assets.
97. Total Assets = Net Fixed Assets + Net Working Capital.
98. Net Fixed Assets = Total Fixed Assets – Accumulated Depreciation.
99. Net Working Capital = ( CA –CL ) – ( Intangible Assets + Fictitious Assets + Idle Stock + Bad Debts )
100. Return on Capital Employed = Net Profit Before Interest and Tax / Average Capital Employed.
101. Average Capital employed = Equity Capital + Long Term Funds provided by Owners & Creditors at the beginning & at the end of the accounting period divided by two.
102. Return on Ordinary Share Holders Equity = (NPAT – Preferential Dividends) / Average Ordinary Share Holders Equity or Net Worth.
103. Earnings Per Share = Net Profit After Taxes and Preferential dividends / Number of Equity Share.
104. Dividend per Share = Net Profit After Taxes and distributable dividend / Number of Equity Shares.
105. Total Asset Turnover = Cost of Goods Sold / Average Total Assets.
106. Fixed Asset Turnover = Cost of Goods Sold / Average Fixed Assets.
107. Capital Turnover = Cost of Goods Sold / Average Capital employed.
108. Current Asset Turnover = Cost of Goods Sold / Average Current Assets.
109. Working Capital Turnover = Cost of Goods Sold / Net Working Capital.
110. Return on Net Worth = ( Net Profit / Net Worth ) \* 100

111.  $DSCR = \frac{\text{Profit after Tax \& Depreciation} + \text{Int. on T L \& Differed Credit} + \text{Lease Rentals if any}}{\text{Repayment of Interest \& Installments on T L \& Differed Credits} + \text{Lease Rentals if any}}$
112.  $\text{Factory Cost} = \text{Prime cost} + \text{Production Overheads}$ .
113.  $\text{Cost of Goods Sold} = \text{Factory Cost} + \text{Selling, distribution \& administrative overheads}$
114.  $\text{Contribution} = \text{Sales} - \text{Marginal Costs}$ .
115.  $\text{Percentage of contribution to sales} = \left( \frac{\text{Contribution}}{\text{Sales}} \right) * 100$
116.  $\text{Sales volume requires} = \frac{\text{Fixed cost} + \text{Required profit}}{\text{Contribution per unit}}$ .
117.  $\text{BEP in Sales} = \left( \frac{\text{Fixed Costs}}{\text{Contribution per unit}} \right) * \text{Price per unit}$ .
118.  $\text{Contribution Sales Ratio} = \left( \frac{\text{Contribution per unit}}{\text{Sale price per unit}} \right) * 100$
119.  $\text{Level of sales to result in target profit after Tax} = \frac{\text{Target Profit}}{(1 - \text{Tax rate})} / \text{Contribution per unit}$
120.  $\text{Level of sales to result in target profit} = \frac{\text{Fixed Cost} + \text{Target profit}}{\text{Contribution per unit}}$

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